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Vascular plant biodiversity of the lower Coppermine River valley and vicinity (Nunavut, Canada): an annotated checklist of an Arctic flora

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The Coppermine River in western Nunavut is one of Canada's great Arctic rivers, yet its vascular plant flora is poorly known. Here, we report the results of a floristic inventory of the lower Coppermine River valley and vicinity, including Kugluk (Bloody Falls) Territorial Park and the hamlet of Kugluktuk. The study area comprises approximately 1000 km^2, extending from the forest-tundra south of the treeline to the Arctic coast. Vascular plant floristic data are based on a review of all previous collections from the area and the more than 1200 new collections we made in the area in 2014. Results are presented in an annotated checklist, including citation of all specimens examined, comments on taxonomy and distribution, and photographs for a subset of taxa. The vascular plant flora of the lower Coppermine River valley and vicinity comprises 300 species (311 taxa), a 36.6% increase from the 190 species documented by previous collections made in the area over the last century, and is considerably more diverse than other local floras on mainland Nunavut. We document 207 taxa for Kugluk (Bloody Falls) Territorial Park, an important protected area for plants on mainland Nunavut. One hundred and ninety taxa are newly recorded for the study area. Of these, 13 taxa (12 species and one additional variety) are newly recorded for Nunavut (*Allium schoenoprasum*, *Draba lonchocarpa*, *Eremogone capillaris* subsp. *capillaris*, *Sabulina elegans*, *Eleocharis quinqueflora*, *Epilobium* cf. *anagallidifolium*, *Botrychium* "neolunaria", *B. tunux*, *Festuca altaica*, *Polygonum aviculare*, *Stuckenia pectinata*, *Salix ovalifolia* var. *arctolitoralis* and *S. ovalifolia* var. *ovalifolia*), seven species are newly recorded for mainland Nunavut (*Carex gynocrates*, *C. livida*, *Cryptogramma stelleri*, *Draba simmonsii*, *Festuca viviparoidea* subsp. *viviparoidea*, *Juncus alpinoarticulatus* subsp. *americanus*, and *Salix pseudomyrsinites*) and 56 range extensions are reported. *PsbA-trnH* and *rbcL* DNA sequence data were used to help identify the three *Botrychium* taxa recorded in the study area. Three new combinations are proposed: *Petasites frigidus* subsp. *sagittatus* (Banks ex Pursh) Saarela, *Carex petricosa* subsp. *misandroides* (Fernald) Saarela and *Carex simpliciuscula* subsp. *subholarctica*

(T.V.Egorova) Saarela.

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Abstract: The Coppermine River in western Nunavut is one of Canada's great Arctic rivers, yet its vascular plant flora is poorly known. Here, we report the results of a floristic inventory of the lower Coppermine River valley and vicinity, including Kugluk (Bloody Falls) Territorial Park and the hamlet of Kugluktuk. The study area comprises approximately 1000 km^2, extending from the forest-tundra south of the treeline to the Arctic coast. Vascular plant floristic data are based on a review of all previous collections from the area and the more than 1200 new collections we made in the area in 2014. Results are presented in an annotated checklist, including citation of all specimens examined, comments on taxonomy and distribution, and photographs for a subset of taxa. The vascular plant flora of the lower Coppermine River valley and vicinity comprises 300 species (311 taxa), a 36.6% increase from the 190 species documented by previous collections made in the area over the last century, and is considerably more diverse than other local floras on mainland Nunavut. We document 207 taxa for Kugluk (Bloody Falls) Territorial Park, an important protected area for plants on mainland Nunavut. One hundred and ninety taxa are newly recorded for the study area. Of these, 13 taxa (12 species and one additional variety) are newly recorded for Nunavut (*Allium schoenoprasum*, *Draba lonchocarpa*, *Eremogone capillaris* subsp.

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Key words: floristics, forest-tundra, Kugluk (Bloody Falls) Territorial Park, treeline

Introduction

Botanical exploration of the Canadian Arctic, encompassing the Canadian Arctic Archipelago and portions of mainland Yukon, Northwest Territories, Nunavut, Quebec (Nunavik) and Newfoundland and Labrador (Nunatsiuvut), has been ongoing for nearly two hundred years (see Saarela et al. (2013a) for a brief summary). Mainland Northwest Territories and Nunavut include both boreal and Arctic ecosystems and the transitional ecotone between them (the forest-tundra or treeline), with a rich vascular plant flora comprising over 800 species (Porsild & Cody 1980). A detailed summary of botanical exploration of continental Northwest Territories and Nunavut up to 1976 is given in Porsild & Cody (1980). Their classic flora, now over 35 years old, is the only comprehensive work for this large, ~~botanically interesting~~ region. Many specimens and a considerable amount of new information on the Arctic flora of the continental Northwest Territories and Nunavut have accumulated since the publication of Porsild

& Cody (1980), including the results of floristic inventories of Bathurst Inlet (Cody et al., 1984), Wager Bay (Cody et al., 1989) and Tuktut Nogait National Park and vicinity in the Melville Hills area (Cody et al., 1992; Saarela et al., 2013a), and an ecological study of plant species richness along the Hood River (Gould & Walker, 1997). Further range extensions, additions to the flora of the region and other new information have been published in a series of papers by W.J. Cody and colleagues (Cody, 1996a; Cody & Johnston, 2003; Cody et al., 2000; Cody & Reading, 2005; Cody et al., 2003). Nevertheless, many Arctic areas of mainland Canada are unexplored or underexplored botanically, such as the lower Coppermine River valley in western Nunavut.

Floristics is the study of the distribution, number, types and relationships of plant species in an area. Here, we report the results of a floristic study of the lower Coppermine River valley and vicinity, in the form of an annotated checklist: a verified list of all vascular plant species in a defined area (Funk et al., 2007). We bring together the results of our 2014 fieldwork and the existing published and unpublished information on the vascular plants of the area, providing comprehensive baseline biodiversity data for the area. Checklists have many uses: they can contribute to biogeographical, evolutionary and phytogeographical studies, provide information relevant to conservation efforts, provide data for comparative biodiversity analyses, help identify areas that harbour rare species, and help with the identification of organisms. They also serve as foundational information for further floristic or ecological studies of a region, such as detailed characterization of vegetation or setting up plots for long term vegetation monitoring. Checklists can also be useful in monitoring the effects of climate change on the composition of the flora by documenting if, where and when a particular species has been collected. The specimens that underpin floristic research will be useful for future research, including systematics and taxonomy, phylogeography and DNA barcoding.

The Coppermine River—The Coppermine River is one of Canada's great Arctic rivers. It flows north 845 kilometres from its headwaters at Lac de Gras, Northwest Territories (64°30'N, 110°30'W; approximately 300 kilometres north of Yellowknife) through the forest-tundra and the Arctic shrub tundra to Coronation Gulf on the Arctic Ocean at the hamlet of Kugluktuk, Nunavut, dropping over 400 metres in elevation along the way (Fig. 1). Humans have inhabited the lower Coppermine River area for more than 3000 years, beginning with Pre-Dorset people (McGhee, 1970). The river's traditional name is Kogloktok, which means "the place of moving water" in Inuktitut, the Inuit language. In Inuinnaqtun, the primary Inuktitut dialect in the area, the river is known as Qurluktuk. The Coppermine River cuts through rock and sediment, resulting in a series of narrow gorges that produce rapids and wider valleys where sediment deposits have been washed away. The mouth of the river at Kugluktuk comprises a series of islands and shoals formed by sediments carried down the river, forming a large delta (Dredge, 2001). Today the Coppermine River is a well-known and popular wilderness canoe route. The 450 kilometre Nunavut portion of the Coppermine River was nominated for Heritage River status under the Canadian Heritage River System in 2002.

The Coppermine River area is important in the history of Arctic exploration. The river was given its English name by Samuel Hearne, an employee of the Hudson's Bay Company who was the first western explorer to visit the area. Hearne travelled to the river by foot in 1771 from Fort Prince of Wales, Hudson Bay, in search of the source of copper used by Inuit inhabiting the area (Hearne, 1795). Some 70 years after Hearne visited the area, the Coppermine River was explored as part of Sir John Franklin's first (1819–1822) and second (1825–1827) overland expeditions exploring the northern coast of North America. Several of the numerous rapids along the lower Coppermine River, which are important landmarks in the area, bear names given to

them during Franklin's first overland expedition, including Escape Rapids (67°37'0"N, 115°28'0"W), Sandstone Rapids (67°27'0" N, 115°38'15"W), Muskox Rapids (67°22'55"N, 115°43'15"W) and Rocky Defile Rapids (67°2'0"N, 116°12'0"W) (Fig. 2). (There is also an Escape Rapids on the Back River in Nunavut.) Sketches of the Coppermine River area made by Franklin expedition members Robert Hood and George Back, which were published in Franklin (1823), are among the earliest visual records of the Canadian Arctic. Some of these, however, do not accurately illustrate the landscape. This was demonstrated by St-Onge (1982), who compared some of the illustrations with contemporary photographs of the places that were illustrated. The next explorers to visit the Coppermine River were Peter Warren Dease and George Simpson, who explored the area during 1837–1839 as part of an assignment to map the Arctic coast from the mouth of the Mackenzie River eastward to the Kent Peninsula (Barr, 2002; Sampson, 1976). Later early explorers included David Hanbury in 1901 (Hanbury, 1904), George Douglas in 1911–1912 (Douglas, 1914) and the members of southern team of the Canadian Arctic Expedition in 1915 (Jenness, 2011), among others (Hodgins & Hoyle, 1997). All of the published accounts of these early explorers include important geographical information on the area. A trading post was set up in 1916 at the mouth of the Coppermine River, and the settlement of Coppermine was established in 1927 when the Hudson's Bay Company moved its trading post there from Bernard Harbour northwest of the settlement. The community is situated on a rocky hill that slopes gradually north to the shore of Coronation Gulf. The name of the community was officially changed to Kugluktuk on 1 January 1996. Here, we refer to the community as Kugluktuk even when referencing events before 1996.

The Coppermine River is located on the northwestern portion of the Canadian Shield. The geology and landforms of the lower Coppermine River valley and Kugluktuk are described

by Dredge (2001) and the sedimentary sequence of the area is described by St-Onge (2012). The entire Coppermine River was covered by the Laurentide Ice sheet during the most recent glaciation (Ritchie, 1987). The Coppermine River valley south of Rocky Defile Rapids was freed from ice by 10,250 ^{14}C years before present (St-Onge, 1980), and the river valley to Coronation Gulf was ice-free by 10,000 years before present (Bruneau, 1985). In late-glacial times a portion of the southern half of the Coppermine River valley, south of the Coppermine Mountains, was covered by a large lake called Glacial Lake Coppermine (St-Onge, 1980). Lower lying areas along the river comprise marine deltaic boulder gravel, originating from a delta of the post glacial sea.

***Bloody Falls*—**Thirteen kilometres south of the mouth of the Coppermine River is Bloody Falls, the first major rapid south of the Arctic coast (Fig. 3). Although Bloody Fall (singular) is the official name of the geographical feature (Canadian Geographical Names, 2015), we here use Bloody Falls (plural) as is common. The Bloody Falls area is known as Kugluk, which means rapids in Inuinnaqtun (Cameron, 2015). This is an important fishing area and archaeological investigations show it has been used by humans for over 3000 years (McGhee, 1970). Bloody Falls is a series of rapids named by Samuel Hearne who, on 17 July 1771, witnessed his Chipewyan companions massacre a group of Inuit camped in the area (Hearne, 1795). The location of a tent ring site on a hill overlooking Bloody Falls is thought to be the area where the massacre occurred (Morrison, 1981), and this incident has received considerable study (e.g., Brand, 1992; Cameron, 2015). The fast-moving rapids of Bloody Falls are the result of a narrow and rapid descent of the river. The gorge through which the Coppermine River flows, forming the rapids, cuts through a bedrock sill (gabbro) (Fig. 4A), and the river drops about 10 metres from the start to the end of the falls (Dredge, 2001). Above and below the rapids beyond

137 the northern and southern limits of the gabbro sill, the river is substantially broader, having cut
138 through large glaciofluvial deposits in those areas (Fig. 4B).

139 In recognition of the long history of pre-contact use of Bloody Falls, the area was
140 designated as Bloody Falls National Historic Site of Canada in 1978, because "it was a
141 traditional fishing site, also containing small caribou hunting stations, that record the presence of
142 Pre-Dorset, Thule, First Nation and Inuit cultures over the past three millennia" (Anonymous,
143 2015a). More recently, in 1995 a 10.5 km^2 area around Bloody Falls was designated by the then
144 Government of Northwest Territories as Kugluk (Bloody Falls) Territorial Park (Fig. 3)
145 (Nunavut Parks & Special Places, 2008). The park is located on both sides of the Coppermine
146 River, centred on Bloody Falls. On the west side of the river the park borders the river. On the
147 east side a small portion of the park above the start of Bloody Falls borders the river and the
148 remainder of the park is separated from the river by a parcel of Inuit Owned Land (Fig. 3).
149 Development in the park includes picnic tables, fire pits, an outhouse, informational signage, a
150 boardwalk and an ATV trail. The history of designating the Bloody Falls area as a territorial park
151 is discussed by Cameron (2015).

152 The immediate area around the base of Bloody Falls was described by McGhee (1970),
153 who conducted archaeological research there. Just north of what is currently a day-use area is an
154 older river course comprising two small ponds bordered by steep rocky slopes (Fig. 4D).
155 Between this canyon and the one through which the Coppermine River runs is a basalt remnant
156 reaching 20 metres above the river. The eastern and southern borders of this remnant along the
157 river are near-vertical cliffs and ledges, whereas to the north it gradually slopes to a flat,
158 seasonally flooded rocky beach. The apex of the basalt is covered in thick willow thickets (*Salix*

159 *glauca* L.). McGhee (1970) reported that willows had appeared there only in the previous
160 decades (i.e., before 1970), according to local people.

161 On the west side of the Coppermine River within the territorial park are numerous large
162 and steep-sloped sandy gullies (Fig. 4C), some up to 80 metres deep. These were formed by
163 erosion of sandy postglacial deltas, a process that is ongoing (Dredge, 2001). Active dunes are
164 present along the tops of some of the gullies. Some of the gullies have streams, often braided
165 ones, flowing through their bases (Fig. 4C), while the bases of others are dry. Some of the gullies
166 provide protected habitat where lush willow thickets thrive. In addition to the dramatic Bloody
167 Falls rapids, these large gullies are an attractive and unique feature of Kugluk (Bloody Falls)
168 Territorial Park. There are no such gullies elsewhere in the study area, to our knowledge.

169 ***Ecology*** **—**The study area comprises Arctic and Subarctic areas (Fig. 3). The southern
170 limit of the Arctic in Canada is equivalent to the northern limit of the forest-tundra ecozone as
171 defined by the Circumpolar Arctic Vegetation Map (CAVM Team, 2003; Walker et al., 2005).
172 They followed Timoney et al. (1992), who defined the boundary between the forest-tundra
173 ecozone and the Arctic ecozone by the ratio of trees to upland tundra. The southern limit of the
174 Arctic along the Coppermine River has a tree:upland tundra cover ratio of 1:1000 (Timoney et
175 al., 1992). This boundary parallels an approximately three kilometre portion of the Coppermine
176 River that runs east to west, approximately 27 kilometres south-southwest of Bloody Falls and
177 seven kilometres north of Sandstone Rapids (Fig. 4). The northern limit of the treeline or forest-
178 tundra in Canada's Arctic is not necessarily the northern limit of a tree species, as trees may
179 grow well beyond the treeline as scraggly bushes, low scrub or prostrate mats. Along the
180 Coppermine River valley the Subarctic-Arctic boundary is more than 12 kilometres south of the
181 northern limit of white spruce (*Picea glauca* (Moench) Voss), the northern-most tree species in

this part of the Canadian Arctic, whose relative abundance is used to define the ecozones. The distribution of white spruce in this area was described by Geurts (1983) as part of a study of pollen assemblages along the Coppermine River valley. Continuous white spruce trees up to eight to ten metres tall extend along the eastern side of the river to 67°19'N, about 1.5 kilometres south of Muskox Rapids (Fig. 5A). Between 67°19'N and 67°39'N white spruce is only present along valley edges (Fig. 5B, C), and north of Muskox Rapids the spruce forest becomes increasingly fragmented and the trees begin to take the form of Krummholz, quickly disappearing from the landscape altogether (Fig. 5D). The last trees observed by Geurts (1983) were at 67°39'N, 2.5 kilometres north of Escape Rapids. The northernmost spruce stands may be relicts from warmer periods during the mid-Holocene (Nichols, 1975; Nichols, 1976). There is evidence that spruce was distributed further north in the past. Nichols (1976) reported spruce macrofossils from the Kugluktuk area along the coast that dated to 3,715 ± 120 years before present, and Nichols (1975) noted spruce macrofossils from a site (Saddleback Hill) about one kilometre south of Kugluktuk, indicating spruce grew near the coast from 3700 to 2500 years before present, surviving in a vegetative state.

The Arctic has been divided into various phytogeographical and bioclimate ecozones. Porsild and Cody (1980) divided the continental Northwest Territories (including what is now continental Nunavut) into five phytogeographical provinces. The study area includes portions of their phytogeographical provinces “4” and “5”. Porsild and Cody (1980) defined “4” as including the treeless part of the [former] District of Mackenzie and most of the [former] District of Keewatin, and “5” as comprising the wooded (non-Arctic) portion of the region. In the classification of Canada’s National Ecological Framework, all of the study area is part of the Southern Arctic ecozone and the Coronation Hills ecoregion, located between Amundsen and

Coronation Gulfs and the northeast shore of Great Bear Lake. In the Coronation Hills ecoregion the mean annual temperature is -11°C, the summer mean is 5°C and the winter mean is -26°C (Ecological Stratification Working Group, 1995). In Kugluktuk from 1981 to 2010, mean annual temperature was -10.3°C, summer mean (June–August) temperature was 8.4°C and winter mean temperature (December–February) was -26.5°C (Environment Canada, 2015).

The Circumpolar Arctic Vegetation Map (CAVM Team, 2003; Walker et al., 2005) classified the circumpolar Arctic into five bioclimate subzones (A to E, with A being the coldest and harshest and E the warmest and least harsh), 23 floristic provinces and eight aboveground plant biomass classes based on normalized difference vegetation index (NDVI) data. They also described the general appearance of the vegetation based on dominant growth forms (dominant vegetation physiognomy) based on satellite imagery. The Arctic portion of the study area is part of bioclimate subzone E, which is characterized by a mean July temperature of 9–12°C, a summer warmth index of 20–35°C, a dense vertical structure of plant cover (with 2–3 layers, moss layer 5–10 cm thick, herbaceous/dwarf shrub later 20–50 cm tall, and sometimes with a low-shrub layer to 80 cm), 80–100% plant cover, total phytomass of 50–100 t ha^{-1}, net annual production of 3.3–4.3 t ha^{-1} yr^{-1}, and 200 to 500 vascular plant species in local floras. Following other bioclimate zonation approaches, the Arctic portion of the study area would be classified as low Arctic (Bliss, 1997; Polunin, 1951); low, erect shrub zone (Edlund, 1990); Arctic shrub (Daniëls et al., 2000) or low shrub (Walker et al., 2002). The Arctic portion of the study area is part of the poorly defined (Elvebakk, 1999) Central Canada floristic province, which extends from the Yukon/Northwest Territories border east to about Chantrey Inlet, Nunavut (67°16'00"N, 95°14'00"W) and north to Meighen Island, Graham Island and the western half of Devon Island, Nunavut. Physiognomically, the lower half of the study area that is part of the CAVM is

classified as S2 low shrub tundra. To the north, the portion of the study area on the east side of the Coppermine River is classified as G3 (nontussock sedge, dwarf-shrub moss tundra) and the west side of the Coppermine River is classified as G4 (tussock-sedge, dwarf-shrub, moss tundra).

***Previous collecting in the study area*—**There have been no previous attempts at a comprehensive floristic survey of the Coppermine River valley or Kugluktuk, but numerous plant collections have been made in the region. The first plant collections in the area were made by Sir John Richardson, surgeon and naturalist on Sir John Franklin's first overland expedition. These collections were published in an appendix to Franklin's narrative of that trip (Richardson, 1823). The appendix was also issued separately later in 1823, with addenda by Robert Brown (Richardson & Brown, 1823). In 1821 Franklin's party descended the Coppermine River and travelled north to the Arctic coast, starting at Point Lake, Northwest Territories (65°14'N, 113°09'W). Most of the plant collections Richardson made in 1821 were abandoned in the field (due to running out of supplies after they reached the coast and the onset of winter), except for some collections he made along the Coppermine River. These were carried back to Point Lake by W.W.F. Wentzel, representing the North West Company on the expedition, who along with four other men left Richardson and the rest of the main party upon their arrival at the mouth of the Coppermine River (Houston, 1984; Richardson, 1823). The surviving plant collections from along the Coppermine River are indicated by "(B)" in Richardson's botanical appendix in Franklin's book, denoting the "Barren grounds" region from Point Lake to the Arctic Sea (Richardson, 1823: 2). Richardson recorded some 117 vascular plant taxa from this region. We have not attempted to fully align the nearly 200-year-old nomenclature and species concepts used by Richardson with current ones, where they differ.

Richardson (1823) described several new taxa from the "Barren grounds", some of which are currently accepted. In the following list, currently accepted names are in parentheses if Richardson's new taxon is now considered a synonym. These new taxa included *Arenaria propinqua* Richardson (=*Sabulina rubella* (Wahlenb.) Dillenb. & Kadereit), *Anemone borealis* Richardson (=*Anemone parviflora* Michx.), *Aster montanus* Richardson (=*Eurybia sibirica* (L.) G.L. Nesom), *Braya glabella* Richardson, *Cardamine digitata* Richardson, *Cineraria frigida* Richardson (=*Tephroseris frigida* (Richardson) Holub), *Chrysanthemum integrifolium* Richardson (=*Hulteniella integrifolia* (Richardson) Tzvelev), *Crepis nana* Richardson (=*Askellia pygmaea* (Ledeb.) K.L. Chambers & S.C. Meyers), *Hedysarum mackenzii* Richardson (=*Hedysarum boreale* subsp. *mackenziei* (Richardson) S.L. Welsh), *Ranunculus arcticus* Richardson, *Ranunculus purshii* Richardson (=*R. gmelinii* DC.), *Salix desertorum* Richardson (=*Salix glauca* L.), *Senecio lugens* Richardson and *Stellaria laeta* Richardson (=*Stellaria longipes* Goldie). The protologues of only three of these new taxa contain descriptions more precise than simply area "B" denoting where the original material was collected. *Senecio lugens* was described from Bloody Falls, and *Braya glabella* and *Chrysanthemum integrifolium* were described from the Copper Mountains [Coppermine Mountains]. Three additional new species collected in the "Barren grounds" and published in Richardson (1823) were based on descriptions provided by Robert Brown. Traditionally the authority for these taxa has been attributed to "R. Br. ex Richardson": *Calamagrostis purpurascens* R. Br. ex Richardson (collected in the barren grounds), *Carex concinna* R. Br. ex Richardson (collected in the barren grounds and "wooded country from latitude 54° to 64° north") and *Carex podocarpa* R. Br. ex Richardson (collected in the barren grounds). However, since the specific names and their validating description were explicitly ascribed to Brown in Richardson (1823) by the statement

"Brown, M.S.", attribution to Brown is all that is required as the authority for these names, according to Art. 46 of the International Code of Nomenclature for algae, fungi, and plants (McNeill et al., 2012). Richardson (1823) also described other currently-recognized Arctic taxa, based on collections from areas other than the barren grounds along the Coppermine River, including *Phlox hoodii* Richardson, *Tofieldia coccinea* Richardson and *Woodsia glabella* R. Br.

The first sets of Richardson's collections are housed at the British Museum (BM) and Royal Botanical Gardens Kew (K), with duplicate material at the National Herbarium of Canada (CAN), Field Museum of Natural History (F), Gray Herbarium (GH), The New York Botanical Garden (NY), Muséum National d'Histoire Naturelle (P), Philadelphia Academy of Natural Sciences (PH) and probably other herbaria. Information on the labels of the specimens is vague, with no dates or collection numbers and imprecise (by today's standards) geographical descriptions such as "Arctic Coast", "N.W. America", "Arctic Plants", "Arctic America", "Sea coast", and sometimes with only "Dr. Richardson" and no geographical information. This is not surprising, as part of the goal of their expedition was to map the north coast, which was unknown at the time. Because of the lack of information on the specimens and in the protologues, identifying type or original material of Richardson's new taxa has often been problematic or impossible, with many specimens annotated as "possible type or isotype" or similar statements. In most cases it is not possible to determine which specimens are unique collections (from different places at different times) and which are duplicates (from the same place and time).

In 1826 during Franklin's second overland expedition (1825–1827) Richardson again travelled along the Coppermine River, this time south from the Arctic coast to the east end of Great Bear Lake (Franklin, 1828). We are not aware of any collections made from the Coppermine River area during this trip, but there are collections from other areas visited during

296 that expedition, such as the Mackenzie River. Richardson's collections from the first two
297 Franklin expeditions were studied by W.J. Hooker for his *Flora Boreali-Americana* (Hooker,
298 1840). Richardson travelled along the Coppermine River a third time, in the late 1840s, as part of
299 an overland expedition in search of Franklin and his crew, who went missing in the Canadian
300 Arctic in 1846. There is indication in Richardson's published account of that trip that he
301 collected plants along the Coppermine River and/or in the areas visited before the Coppermine
302 River, as he wrote on 11 September 1846 that along the Kendall River west of its confluence
303 with the Coppermine River, "…I deposited my packet of dried plants and some books in a tree,
304 intending to send for them in the winter" (Richardson, 1851). The specimens may have been
305 retrieved, as some collections labelled "Arctic Sea Coast", which may have been part of that
306 packet, were referred to in a letter by Francis Boott to Richardson providing identification of
307 *Carex* species collected on this expedition (Richardson, 1851).

308 Plant collections were apparently not made in the lower Coppermine River area again
309 until 1915. In February 1915, Frits Johansen and Rudolf M. Anderson, members of the Southern
310 Party of the Canadian Arctic Expedition 1913–1918 (Jenness, 2011), made a few winter
311 collections along the Coppermine River, which were reported in Macoun & Holm (1921).
312 Throughout the rest of the 20th century, numerous collections were made in the area, mostly in
313 Kugluktuk. Most of these were made incidental to other activities and few were made by
314 professional botanists. Collection information for only a small subset of these collections has
315 been published, either in floristic papers (see below) or taxon-specific taxonomic treatments. The
316 dots in the vicinity of Kugluktuk and Bloody Falls on the maps in Porsild and Cody (1980) are
317 based on most of these earlier collections. Pioneering Canadian bush pilot Arthur M. Berry made
318 collections in Kugluktuk in 1931 (specimens at CAN), while working for Northern Aerial

Mineral Exploration (Piper, 2010). Berry's collections were reported in Porsild (1943). Father Arthéme Dutilly of the Catholic University of America made collections in Kugluktuk in 1934 (CAN), during a three-month expedition in the Canadian Arctic to carry out botanical and entomological research (Anonymous, 1935; Boivin, 1983). L. Ross (affiliation unknown) made collections in Kugluktuk in 1940 (CAN). Hansford T. Shacklette, later of the U.S. Geological Survey, collected in Kugluktuk in 1948 (CAN) as part of an expedition that visited Port Radium, Sawmill Bay and Dease Arm of Great Bear Lake (Porsild & Cody, 1980). Mare Hammer of Denmark reportedly made collections from the Kugluktuk area in 1948 (Anonymous, 1949); we have not seen any of these, nor are we certain they exist. Alfred E. Porsild of the National Museums of Canada—the only professional botanist who collected in the area in the 20th century—made collections in Kugluktuk on 26 July 1949 (CAN). A stop in Kugluktuk is not recorded in Porsild's account of his summer 1949 field season on adjacent Banks Island and Victoria Island, though he does report leaving Port Radium on 25 July 1949 and arriving at Holman Island Post [Ulukhaktok] on 28 July 1949 (Porsild, 1950a); Kugluktuk is about halfway between those two settlements and the party likely made a brief stopover there, during which Porsild explored the flora. R.E. Miller (affiliation unknown) made collections in Kugluktuk and at the mouth of the Rae River in July and August 1955 (CAN). Raymond D. Wood and Mildred Wood made collections in Kugluktuk in 1958. R. D. Wood, a lawyer by profession, was an avid photographer of plants, and he and Mildred ("the botanist of the team" according to his obituary) collected vouchers of the plants that were photographed, although the vouchers list only Raymond's name as collector. All of their collections from Kugluktuk at CAN are associated with colour slides that are part of a larger set of their slides housed in the archives of the Canadian Museum of Nature (Porsild, 1965). The specimens are all annotated with text

342 indicating there is a corresponding slide of the plant, e.g. “museum slide no. 57”. James A.
343 Larsen, ecologist from the University of Wisconsin, made collections in Kugluktuk in 1962
344 (CAN). F. Fodor made collections in Kugluktuk in 1972 (UBC). Biologists Frederick W.
345 Schueler and J.D. Rising made a collection in Kugluktuk in 1975 (CAN). Teresa Dolman made
346 collections in Kugluktuk on 2 August 1995 (LEA). Carolyn Parker and I. Jonsdottir made a few
347 collections (ALA) in Kugluktuk on 23 June 1999. Lawrence K. Benjamin made collections in
348 Kugluktuk in June and July 2000 (ACAD).

349 The largest collection of plant specimens from the study area was gathered at Kugluktuk
350 and Bloody Falls by W.I. Findlay in 1951, who was then a student assistant with the Canada
351 Department of Agriculture (Porsild & Cody, 1980). The first and most complete set of these
352 specimens is deposited in the National Collection of Vascular Plants (DAO), Agriculture and
353 Agri-Food Canada, Ottawa, and duplicates are housed in ACAD, ALTA, LEA, MT, QFA, UBC
354 and possibly elsewhere. These collections were published by Cody (1954b). This is by far the
355 most comprehensive collection of material from the area, but it did not represent a complete
356 survey of the flora of the region, given the lack of specimens of some widespread, common taxa.
357 For example, no species of *Poa* and only three species of *Carex*, the most species-rich genus of
358 plants in the Arctic, were collected. Findlay also made collections at the mouth of the
359 Nipartoktuak River (67°49'N, 114°44'), just east of the current study area.

360 A few collections have been made in the study region in the 21st century. Jonathan D.
361 Davis (2006) made some plants collections in the area (CAN, GH, MACF, OAC) as part of an
362 ethnobotanical study of the Kiluhikturmiut Inuinnait of Kugluktuk (Davis & Banack, 2012).
363 They found that eight species from six families, and one plant-derived substance, are part of the
364 traditional diet; six types of plants from three families are used as traditional raw materials; and

eleven species are used as medicine. Our team in 2008 (L.J. Gillespie, J.M. Saarela, L.M. Consaul & R.D. Bull) made five collections (CAN) outside the Kugluktuk Airport while waiting for a flight to Cambridge Bay. Bruce Bennett made 17 collections (ALA, BABY, CAN, UBC) around the Kugluktuk Airport during a brief stop-over there on 21 July 2013.

Materials and Methods

This study focuses on the lower Coppermine River valley and vicinity, defined here as extending from the Bigtree River (66°56'23.8"N, 116°21'3.2”W) some 112 kilometres southwest of Kugluktuk and north along the river to Kugluktuk at the Arctic coast (Fig. 3). The study area also includes islands in the mouth of the Coppermine River and a region extending some 20 kilometres northwest of Kugluktuk to Richardson Bay at the confluence of the Rae and Richardson rivers at Coronation Gulf. The size of the study area is approximately 1200 km^2. Fieldwork was conducted under the following licences or permissions: Nunavut Department of Environment Wildlife Research Permit 2014-034; Nunavut Territorial Parks Use Permit 2014-01; an Inuit Owned Land Exemption Certificate from the Kitikmeot Inuit Association Department of Land, Environment and Resources to access Inuit Owned Land in the Kitikmeot Region of Nunavut; and Approval for the Use of Waters or Deposit of Waste Without a Licence (Approval number 8WLC-FCA1415) from the Nunavut Water Board.

In July 2014 we explored and collected plants along the lower Coppermine River and vicinity. We established three base camps, one each at Fockler Creek (campsite coordinates: 67°25'49"N, 115°37'54"W), Kugluk (Bloody Falls) Territorial Park (67°44'34"N, 115°22'22"W) and Kugluktuk (67°49'29"N, 115° 4'57"W) (Figs. 3, 6). We spent 10 days at Fockler Creek (1–10 July 2014) exploring an area of approximately 10 km^2, 11 days at Kugluk (Bloody Falls)

Territorial Park (11–22 July 2014), and nine days in Kugluktuk (29–30 June 2014 and 22–29 July 2014), an area of ca. 3 km^2 excluding sites west of town in the vicinity of Heart Lake. The Fockler Creek camp was south of the limit of the Arctic ecozone, while the other two camps were in the Arctic ecozone (Fig. 3) (CAVM Team, 2003). Fockler Creek is a small river that runs into the Coppermine River just south of Sandstone Rapids on the east side of the river (Figs. 6A, 7). Our collection sites in the vicinity of Fockler Creek are described in reference to their distances from Sandstone Rapids (67°27'00"N, 115°38'15"W) along the Coppermine River. Other named geographical features in the Fockler Creek area are Sleigh Creek and Tundra Lake. Sleigh Creek is a small river that parallels Fockler Creek to the north and flows northwest from the Tundra Lake, a narrow lake.

Our aim was to document all of the vascular plant species in the vicinity of each of our three camps with at least one voucher collection; for many species we made multiple collections per area. We visited and explored as many habitats as possible, by foot, in the vicinities of each camp, and made collections as we encountered taxa. We also explored several more remote areas by helicopter over two days (7–8 July 2014), staging from the Fockler Creek camp (Fig. 3). By helicopter we visited five forest-tundra sites (all south of the Arctic ecozone) along the Coppermine River south of the Fockler Creek area. These included the forest-tundra near adjacent to the mouth of Bigtree River (66°56'5"N, 116°20'10") on the west side of the Coppermine River (Fig. 8); the mouth of the Kendall River (67°7'0"N, 116°7'0" W), a large river that drains the Dismal Lakes to the west into the Coppermine River; the mouth of Melville Creek (67° 15' 40"N, 115°31'20"W), a river draining lakes on the east side of the Coppermine River (Fig. 9); the Coppermine Mountains (67° 18'0"N, 116°0'0"W), which rise 400–600 metres on the north and west and sides of the Coppermine River (Fig. 10); and a large esker (67°22'40"N,

115°42'38.5"W) on the east side of the Coppermine River (see Fig. 13 in St. Onge 1980 for esker details), approximately 0.6 kilometres south-southeast of Muskox Rapids. Helicopter sites along the Coppermine River within the Arctic ecozone included a site on the north side of the Coppermine River (67°31'18.2"N, 115°36'20.1"W), approximately halfway between Escape Rapids and Muskox Rapid (this site was just above the southern Arctic limit) (Fig. 5B); a site just above (south of) Escape Rapids (67°37'0"N, 115°28'0"W) on the west side of the Coppermine River; and an unnamed island in the mouth of the Coppermine River approximately 3.3 kilometres east of Kugluktuk (67°49'29"N, 115°1'3.2"W) (Fig. 11C). Our two other helicopter stops were at a coastal site (Richardson Bay) near the confluence of the Rae and Richardson rivers at Coronation Gulf (67°54'11.2"N, 115°32'27.4"W) (Fig. 12) and the peninsula along the northwest side of Expeditor Cove (67°52'44"N, 115°16'58"). Because search time at helicopter sites was limited we were unable to exhaustively inventory each of these sites. Rather, we focused on making collections of species that were rare at the site or in the study area, but also made collections of common or interesting species as time permitted. At Kugluktuk, we explored numerous areas within the community and adjacent natural areas (Fig. 11). We also explored the Heart Lake area, located approximately 7.5 kilometres southwest of the mouth of Coppermine River at Kugluktuk. We travelled to this area by ATV and explored the area while walking back to Kugluktuk.

All of our collections were dried in the field in standard plant presses. For each collection we preserved a small sample of leaf tissue in silica-gel for future molecular analyses. In most cases, we tagged the plant from which we obtained the sample. These tissue samples are housed at the Canadian Museum of Nature. The first set of our 2014 collections is deposited in the National Herbarium of Canada, Canadian Museum of Nature (CAN). Duplicates are deposited in

the University of Alaska Museum of the North (ALA); the University of Alberta Vascular Plant Herbarium (ALTA); University of British Columbia Herbarium in the Beaty Biodiversity Museum (UBC); Botanical Museum in Oslo (O); Missouri Botanical Garden (MO); the Marie-Victorin Herbarium at the Université de Montreal (MT); United States National Herbarium in the National Museum of Natural Sciences, Smithsonian Institution (US); and the University of Manitoba Herbarium (WIN). Locations of duplicate materials are indicated in the specimen citations.

We have attempted to account for all of the vascular plant collections that have been made in the region. All species reported for the study area are documented by one or more voucher specimens and are summarized in an annotated checklist, including specimen data. To find specimens collected previously in the study area, we searched the collections at CAN and the National Collection of Vascular Plants at Agriculture and Agri-Food Canada, Ottawa (DAO), and we queried the Canadensys database (data.canadensys.net/explorer/en/search), which publishes biodiversity information from numerous Canadian herbaria. Through Canadensys we located relevant specimens housed in ALTA, MT, UBC, the E.C. Smith Herbarium at Acadia University (ACAD), the University of Lethbridge Herbarium (LEA) and Herbier Louis-Marie at Université Laval (QFA). We examined images of the specimens at ACAD and LEA, which were accessed through Canadensys. We have seen nearly all of the specimens mentioned in the text and cited under specimens examined, except those at MT and QFA, which are duplicates of Findlay collections. We saw only the specimens collected by B. Bennett housed at CAN; the others were determined by him as indicated in the specimen citations. Images of many of John Richardson's collections are available on the Kew website, but we did not critically examine these. Because of their lack of precise collection information, in most cases it is not possible to

457 know whether or not the collections he cited from the “Barren lands” were made in the study
458 area, or even which specimens were from the “Barren lands”. The coordinates for Kugluktuk
459 listed on the labels of Findlay’s collections and in Cody (1954b) are 67°49’N, 115°5’W, a
460 location in the middle of the mouth of the Coppermine River. In the specimen citations we report
461 coordinates that correspond to central Kugluktuk for these collections, and estimate a one
462 kilometer accuracy range. The labels for most specimens collected by others record the territory
463 as Northwest Territories, the jurisdiction of which Nunavut was part of until 1999. “Not recorded
464 previously for Nunavut” or similar phrases in the text means not recorded for the portion of the
465 former Northwest Territories that is now part of Nunavut.

466 Taxa in the annotated checklist are first organized by major clade: lycophytes,
467 monilophytes, gymnosperms and angiosperms (monocots, eudicots), and families, genera and
468 species are listed alphabetically under their respective higher-level taxon. We indicate in
469 parentheses the number of genera and the number of species in each family in the region. For
470 example, [1/2] indicates one genus and two species in the family. Numbers in parentheses after
471 the number of species refer to the total number of taxa in the family recorded for the study area
472 including additional infraspecific taxa. Family-level classifications follow Christenhusz et al.
473 (2011a) for lycophytes, Smith et al. (2006) for monilophytes and Angiosperm Phylogeny Group
474 III (2009) for angiosperms.

475 At the genus, species and infraspecific levels the nomenclature we use does not rely on a
476 single source, but considers all of the available taxonomic information. We have extensively
477 consulted relevant taxonomic and phylogenetic literature, as well as earlier (Porsild & Cody,
478 1980) and current floras, including available volumes of the *Flora of North America* series. An
479 important source of information has been the *Annotated Checklist of the Panarctic Flora (PAF):*

480 *Vascular Plants* (Elven et al., 2011), which evaluates the taxonomy and nomenclature of the
481 global Arctic flora. In instances where treatments of species and/or species complexes differ
482 among publications—and there are many—we provide a brief discussion of the taxonomic
483 issue(s) and indicate which treatment we follow. When accepted names differ among one or
484 more of Elven et al. (2011), Porsild & Cody (1980), the *Flora of North America* treatment and
485 other recent taxonomic work, we briefly discuss the names for the taxon applied in each
486 treatment. No taxonomic comments are given for species whose taxonomy is stable and
487 uncontroversial.

488 Common name(s) in English are derived mostly from the *Flora of North America* series
489 and Brouillet et al. (2010+). Global distribution summaries are those given in Elven et al. (2011),
490 and for each taxon we include a brief statement summarizing the taxon's known distribution in
491 the Canadian Arctic, referencing primary and secondary literature sources. The primary literature
492 sources are mostly those that document sites on mainland Nunavut additional to the ones mapped
493 in Porsild & Cody (1980), and should be helpful to other workers who need to synthesize this
494 information. For a subset of taxa we include photographs taken in the field in the study area to
495 facilitate identification. For photographs with a corresponding voucher specimen, we provide
496 collection numbers in the figure captions to allow cross-referencing of the photos and associated
497 collection data. For photographs that do not have a corresponding voucher specimen, we include
498 the locations and dates of the photographs in the figure captions.

499 New or existing collections are recorded as Noteworthy Records when they meet one or
500 more of the following criteria: (1) they represent major or minor range extensions for a taxon,
501 extending its known (i.e., published) distribution; (2) they are first record(s) for Nunavut; (3)
502 they are first record(s) for mainland Nunavut; (4) they are first record(s) for the study area. The

503 territory of Nunavut was established in 1999, after the majority of the earlier collections in the
504 study area were made. Thus, collections from sites that were formerly part of Northwest
505 Territories are indicated as being located in Nunavut.

506 The electronic version of this article in Portable Document Format (PDF) will represent
507 a published work according to the International Code of Nomenclature for algae, fungi, and
508 plants (ICN), and hence the new names contained in the electronic version are effectively
509 published under that Code from the electronic edition alone. In addition, new names contained in
510 this work which have been issued with identifiers by IPNI will eventually be made available to
511 the Global Names Index. The IPNI LSIDs can be resolved and the associated information viewed
512 through any standard web browser by appending the LSID contained in this publication to the
513 prefix "http://ipni.org/". The online version of this work is archived and available from the
514 following digital repositories: PeerJ, PubMed Central, and CLOCKSS.

515 **Results**

516 We collected 1380 numbers (Saarela nos. 3044–4424) representing 1413 unique
517 collections (a subset of collections was found to be mixed collections of more than one species).
518 Of the 1413 collections, two are algae, 56 are bryophytes (*Saarela et al. 3201*, *3232*, *3285–3287*,
519 *3356*, *3399*, *3425*, *3590*, *3591*, *3663*, *3689*, *3698*, *3731*, *3749*, *3753*, *3791–3795*, *3814*, *3816*,
520 *3846*, *3870–3876*, *3932*, *3933*, *3949*, *3956*, *4022–4024*, *4045*, *4066*, *4080*, *4156*, *4157*, *4167*,
521 *4186*, *4200*, *4288*, *4289*, *4316*, *4367*, *4423*), nine are fungi (*Saarela et al. 3780*, *4083*, *4149*,
522 *4181–4184*, *4229*, *4297*), 107 are lichens and 1239 are vascular plants. Bryophyte and fungi
523 collections are not considered here. Algae and lichen collections are reported without
524 interpretation in Appendix 1. Lichens were identified by Colin E. Freebury (Canadian Museum
525 of Nature). We gathered sufficient material for one to twelve replicates (Fig. S1) of each vascular

plant collection, representing at least 2701 herbarium sheets (more if some of these are further subdivided). We examined some 240 unique collections that were previously collected in the study area, for a total of 1653 unique collections from the study area.

The vascular plant flora of the lower Coppermine River valley and vicinity includes 45 families, 134 genera, 300 species, 8 infraspecific taxa and 3 hybrids (311 taxa at species level or below) (Tables 1, 2). Ferns (monilophytes) are represented by six families, six genera and 14 species. Gymnosperms are represented by two families, two genera and two species. Monocots are represented by nine families, 31 genera, 100 species and 104 taxa. Eudicots are represented by 27 families, 93 genera, 182 species and 187 taxa. A complete listing of taxa in the study area is provided in Table 2 and in the annotated checklist. The number of collections for each of the taxa recorded in the study area ranges from 1 to 28 (mean 5.3 ± 3.9). In the study area 48 taxa are known by a single collection, 42 by two ~~collections,~~ 27 by three ~~collections,~~ 31 by four ~~collections,~~ and 163 by five or more collections (Table 2). The taxa in the study area known from the greatest number of collections are *Draba glabella* Pursh (25 collections) and *Salix glauca* var. *cordifolia* (Pursh) Dorn (28 collections). Taxa known from one to three collections in the study area may be considered rare or uncommon.

Twenty-two families (49%) are represented by one genus, 18 families (40%) by 2–5 ~~genera,~~ and five families (11%) ~~include~~ 8–17 genera (Table 1). The three families with the largest number of genera per family are Ericaceae (10 genera), Asteraceae (15 genera) and Poaceae (17 genera). Sixteen families include a single species, 17 ~~include~~ 2–8 species, seven ~~include~~ 11–14 species, and three ~~families include~~ more than 20 species (Table 1). The latter ~~include~~ Asteraceae (23 species), Poaceae (35 species) and Cyperaceae (46 species). Of the three hybrids recorded in the study area, two are in *Salix* (Salicaceae) and one in *Potentilla*

(Rosaceae). Of the eight subspecies or varieties recorded (i.e., in species with more than one infraspecific taxa recorded in the study area), one each are in *Arctagrostis* Griseb., *Calamagrostis* Adans., *Elymus* L. and *Festuca* L. (Poaceae), one in *Carex* L. (Cyperaceae), one in *Potentilla* L. (Rosaceae) and two in *Salix* L. (Salicaceae).

Based on our study of all previous and new collections from the study area, we have determined that 190 (61% of the taxa now known in the region) were previously recorded for the area, and 121 taxa (39%) are newly recorded for the study area (Table 2). The majority of the taxa new to the study area are documented by collections we made in 2014; specimens of eleven of these, however, were first collected in the study area prior to 2014, and were re-determined as part of this study as taxa that have not previously been recorded for the study area. These include *Calamagrostis stricta* subsp. *groenlandica*, *Castilleja caudata*, *Chrysosplenium rosendahlii*, *Erysimum coarctatum*, *Taraxacum holmenianum*, *Pedicularis arctoeuropaea*, *Potentilla arenosa* subsp. *arenosa*, *Potentilla tikhomirovii*, *Sabulina elegans* and *Salix arctica* × *Salix arctophila*. We also made new collections of these taxa. Thirteen taxa (12 species and one additional variety) are newly recorded for Nunavut (*Allium schoenoprasum* L., *Draba lonchocarpa* Rydb., *Eremogone capillaris* (Poir.) Fenzl subsp. *capillaris*, *Sabulina elegans* (Cham. & Schltdl.) Dillenb. & Kadereit, *Eleocharis quinqueflora* (Hartmann) O. Schwarz, *Epilobium* cf. *anagallidifolium* Lam., *Botrychium* "neolunaria", *B. tunux* Stensvold & Farrar, *Festuca altaica* Trin., *Polygonum aviculare* L., *Stuckenia pectinata* (L.) Börner, *Salix ovalifolia* var. *arctolitoralis* (Hultén) Argus and *S. ovalifolia* Trautv. var. *ovalifolia*) (Table 2). Seven species are newly recorded for mainland Nunavut (in addition to the 13 taxa new to Nunavut): *Carex gynocrates* Wormsk. ex Drejer, *C. livida* (Wahlenb.) Willd., *Cryptogramma stelleri* (S.G. Gmel.) Prantl., *Draba simmonsii* Elven & Al-Shehbaz, *Festuca viviparoidea* subsp. *viviparoidea* Krajina

ex Pavlick, *Juncus alpinoarticulatus* subsp. *americanus* (Farwell) Hämet-Ahti and *Salix pseudomyrsinites* Andersson (Table 2). Fifty-six range extensions are recorded (*Agrostis mertensii* Trin., *Allium schoenoprasum*, *Alnus alnobetula* (Ehrh.) K. Koch, *Anthoxanthum arcticum* Veldkamp, *Anthoxanthum hirtum* (Schrank) Y. Schouten & Veldkamp, *Arctostaphylos uva-ursi* (L.) Spreng., *Betula occidentalis* Hook., *Botrychium* "neolunaria", *B. tunux*, *Calamagrostis stricta* (Timm) Koeler subsp. *stricta*, *Carex adelostoma* V.I. Krecz., *C. capitata* L., *C. concinna*, *C. gynocrates*, *C. lachenallii* Schkuhr, *C. livida*, *C. norvegica* Retz., *C. podocarpa*, *Castilleja raupii* Pennell, *Cryptogramma stelleri*, *Draba lonchocarpa*, *D. simmonsii*, *Eleocharis quinqueflora*, *Epilobium* cf. *anagallidifolium*, *E. arcticum* Sam., *E. davuricum* Fisch. ex Horn., *Equisetum fluviatile* L., *E. palustre* L., *Equisetum scirpoides* Michx., *Eremogone capillaris* subsp. *capillaris*, *Festuca altaica*, *F. viviparoidea* subsp. *viviparoidea*, *Juncus alpinoarticulatus* subsp. *americanus*, *Juniperus communis* subsp. *depressa* (Pursh) Franco, *Linnaea borealis* subsp. *americana* (J. Forbes) Hultén, *Polygonum aviculare*, *Potamogeton gramineus* L., *Ranunculus confervoides* (Fr.) Fr., *Rhododendron groenlandicum* (Oeder) Kron & Judd, *Rubus arcticus* subsp. *acaulis* (Michx.) Focke, *Sabulina elegans*, *Sagina nodosa* subsp. *borealis* G.E. Grown, *Salix arbusculoides* Andersson, *S. ovalifolia* var. *arctolitoralis*, *S. ovalifolia* var. *ovalifolia*, *S. planifolia* Pursh, *S. pseudomyrsinites*, *Shepherdia canadensis* (L.) Nutt., *Stellaria borealis* Bigelow subsp. *borealis*, *S. crassifolia* Ehrh., *Stuckenia pectinata*, *Taraxacum holmenianum* Sahlin, *T. phymatocarpum* J. Vahl, *Utricularia intermedia* Hayne and *U. vulgaris* L.) (Table 2). A total of 287 taxa are recorded for the Arctic portion of the study area and 223 for the Subarctic portion. A total of 199 taxa are recorded from both ecozones, 88 taxa are recorded only in the Arctic portion of the study area and 24 taxa are recorded only in the Subarctic portion of the study area. We recorded 207 taxa in Kugluk

595 (Bloody Falls) Territorial Park (201 species, 5 subspecies, 1 hybrid), 215 taxa (208 species, 5
596 subspecies, 2 hybrids) in the vicinity of Kugluktuk, and 199 taxa (195 species, 3 subspecies, 1
597 hybrid) in the Fockler Creek area. Of the 311 taxa recorded in the entire study area, 29 were
598 recorded outside of these three sites.

599 **Discussion**

600 We have recorded 300 species and 311 taxa along the lower Coppermine River valley
601 and vicinity in western Nunavut, in an area extending from the forest-tundra to the Arctic coast.
602 Of these, 288 species are recorded from the Arctic portion of the study area. This level of species
603 diversity falls within the range expected for local floras for bioclimate subzone E (200–500) in
604 the global Arctic, of which the Arctic portion of the study area is part.

605 Knowledge of floristic diversity in an area depends on the level of search effort that has
606 been invested in the area in combination with the skill levels of the individuals studying the
607 flora. In general, known levels of floristic diversity in large areas increase each time botanists
608 ~~(the same ones or different ones)~~ explore them. Despite being generally species-poor compared
609 to other major global ecozones, the Arctic is no exception to this pattern, as demonstrated for
610 Arctic areas that have been studied repeatedly and comprehensively, such as Tuktut Nogait
611 National Park and vicinity on mainland Northwest Territories and adjacent Nunavut, where we
612 increased the known flora of the area by some 16% compared to an earlier inventory (Saarela et
613 al., 2013a). The current study also demonstrates this. We found that 190 species had been
614 recorded in the study area, based on our examination of all materials previously collected ~~in the~~
615 ~~study area~~ (219 unique collections). Our one month of intensive botanizing in 2014 increased the
616 known flora of the lower Coppermine River valley and vicinity by 36% to 300 taxa species, with
617 121 taxa newly recorded for the study area, including 13 taxa new to Nunavut and seven new to

mainland Nunavut. Some of the species newly recorded for the study area are common and widespread Arctic or low Arctic species that had not been documented in the area, but whose presence is not unexpected. Examples of these include *Eriophorum callitrix*, *E. triste*, *Equisetum scirpoides, Juncus arcticus* subsp. *alaskanus*, *Elymus alaskanus*, *Carex krausei*, *C. nardina* and *Poa alpina*. Other taxa newly recorded for the study area are ones known from only one or a few collections in Nunavut, such as *Betula occidentalis* and *Carex petricosa* subsp. *petricosa*. Of the species newly recorded for Nunavut, the majority are species with amphi-Beringian distributions, at least with respect to their Arctic distributions, that were known previously from sites in the adjacent Northwest Territories (*Draba lonchocarpa*, *Eremogone capillaris* subsp. *capillaris*, *Festuca altaica*, *Sabulina elegans*, *Salix ovalifolia* var. *arctolitoralis*, *Salix ovalifolia* var. *ovalifolia*); the records in the study area represent new eastern or northeastern limits for the taxa. A few of the taxa new to Nunavut have more widespread distributions in North America (*Allium schoenoprasum, Eleocharis quinqueflora, Polygonum aviculare, Stuckenia pectinata*), which now include western Nunavut. The *Botrychium* taxa new to the study area include a combination of recently-described but poorly-known taxa (*B. tunux*) and a widespread taxon whose circumscription is somewhat unclear (*B.* "neolunaria"). The seven species newly recorded for mainland Nunavut include species previously known in the territory from one or more eastern Arctic islands (*Carex gynocrates*, *Cryptogramma stelleri*, *Draba simmonsii*), a northern Arctic island (*Festuca viviparoidea* subsp. *viviparoidea*) or at least one island in James Bay (*Carex livida, Juncus alpinoarticulatus* subsp. *americanus*, *Salix pseudomyrsinites*). The 54 range extensions reported include the 20 species new to Nunavut and mainland Nunavut, and the remainder of these are records from areas beyond a taxon's published range. Range extensions in the study area with respect to the nearest known sites for each taxon include northern extensions

(e.g., *Carex podocarpa*, *Juniperus communis* subsp. *depressa*, *Linnaea borealis* subsp. *americana*, *Rhododendron groenlandicum*, *Shepherdia canadensis*, *Stellaria crassifolia*), northeastern extensions (e.g., *Agrostis mertensii*, *Carex concinna*, *C. lachenallii*, *Castilleja raupii*, *Cryptogramma stelleri*, *Equisetum fluviatile*, *Rubus arcticus* subsp. *acaulis*, *Utricularia vulgaris*), eastern extensions (e.g., *Festuca viviparoidea* subsp. *viviparoidea*) and southern extensions (e.g., *Anthoxanthum arcticum*, *Taraxacum holmenianum*).

Our discovery of such a large number of species new to the area can be attributed to two main factors. First, our team of three spent more time (one month) in the study area and explored many more sites and habitats, from the Subarctic to the Arctic coast, over a longer period of time compared to previous researchers, who mostly collected alone. With the exception of Findlay, who made what was previously the largest plant collection from the area, most previous collectors gathered relatively few collections in one or a few days, and most of those collections were from the Kugluktuk area, where the flora is not fully representative of the flora of the entire study area, as shown here. Porsild, for example, collected in Kugluktuk for only one day during a brief stopover. Second, the sole purpose of our research trip was to comprehensively study and document the vascular plant flora of the area. By contrast, most previous collectors were not trained botanists and gathered plant collections incidental to other activities in the area.

Seven of the 190 species previously collected in the study area document species that we did not find in the study area in 2014: *Coptidium pallasii* (Schlect.) Tzvelev (collected in Kugluktuk in 1951), *Festuca baffinensis* Polunin (collected at Rae River, but see the taxon treatment for problematic earlier collection details, and in Kugluktuk in 2013), *Lomatogonium rotatum* (L.) Fr. subsp. *rotatum* (collected at the mouth of the Rae River in 1955), *Potentilla arenosa* subsp. *chamissonis* (Hultén) Elven & D.F. Murray (collected in Kugluktuk in 1940),

664 *Salix arctophila* Cockerell (collected in Kugluktuk by different collectors in 1949, 1951 and
665 1962), *Transberingia bursifolia* (DC.) Al-Shehbaz & O'Kane (collected in Kugluktuk in 1951)
666 and *Woodsia ilvensis* (L.) R. Br. (collected in Kugluktuk in 1958). Except *Festuca baffinensis,*
667 none of these taxa has been collected in the area in over 50 years, and it is possible they no
668 longer occur there. Kugluktuk in the 1950s was much smaller than it is today, and these species
669 may have been collected in areas that have since been altered through development.
670 Alternatively, they may have simply been overlooked during our survey. However, this seems
671 unlikely for the emergent *Coptidium pallasii*; had it been present at sites we visited it is unlikely
672 we would have missed it, given its distinct and conspicuous habit. Focused searches should be
673 undertaken to determine the current statuses of these species in the study area, particularly
674 around Kugluktuk where most of them were collected before.
675 Levels of vascular plant species diversity in an area depend on numerous interacting
676 factors, including climate, geology, topography, local habitat variation, site exposure,
677 photoperiod, nutrient availability, moisture variability, soil variation, length of growing season
678 and the post-glacial history of the flora. Rannie (1986) demonstrated a strong relationship (r =
679 0.97) between floristic diversity and mean July temperature at numerous Canadian Arctic
680 localities with complete vascular plant inventories, and found a diversity gradient of 24–26
681 species per degree Celsius. It is possible to test this relationship with our empirical floristic
682 richness data for Kugluktuk, where long term climate data are available. Kugluktuk has a 30-year
683 (1985–2014) mean July temperature of 11.0°C, as calculated from data from Kugluktuk A
684 climate station [67°49'N, 115°08'38.000W"] (Environment Canada, 2015). Rannie's (1986)
685 equations (where N = number of species and T = mean July temperature) based on temperature
686 station data (N=24.2T – 29.1) and temperature station and other temperature data (N=25.8T –

687 41.8) predict 242 and 237 species for Kugluktuk, respectively. These estimates are 16.9% and
688 12.6% greater than the 207 species [not including hybrids or infraspecific taxa]we documented in
689 Kugluktuk, and both are outside the standard error of 12 species for the equations (Rannie,
690 1986). Unfortunately, Rannie (1986) did not define what constitutes a "locality" in her study and
691 it is therefore unclear how to define a "locality" geographically when applying the formulas.
692 This is important, as the number of species in an area generally increases as the size of an area
693 increases. We defined the Kugluktuk area fairly narrowly here to cover an area of some 3 km^2,
694 but if we broaden the limits of the Kugluktuk area to include the nearby areas (within 20
695 kilometres) we explored west and northeast of the hamlet, species richness for that locality
696 increases considerably. We recorded some 23 additional species from one or more of nearby
697 Heart Lake and other sites west of Kugluktuk (e.g., *Anthoxanthum arcticum*, *Carex williamsii*,
698 *Comarum palustre*, *Eleocharis acicularis*, *Erysimum pallasi*, *Lathyrus japonicus*, *Luzula*
699 *groenlandica*), the confluence of the Rae and Richardson rivers at Coronation Gulf (*Suaeda*
700 *calceoliformis*, *Carex glareosa* subsp. *glareosa*, *C. subspathacea*, *C. ursina*, *Festuca baffinensis*,
701 *Halerpestes cymbalaria*, *Lomatogonium rotatum* subsp. *rotatum*, *Puccinellia vaginata*, *Potentilla*
702 *anserina* subsp. *groenlandica, P. pulchella*, *Triglochin palustris*) and an island in the mouth of
703 the Coppermine River (*Hippuris lanceolata*, *Mertensia maritima* subsp. *tenella*, *Primula stricta*,
704 *Stuckenia filiformis*, *S. vaginata*). Including these, species diversity for the Kugluktuk area
705 increases to 230, a count that is only 5% and 3% lower than Rannie's (1986) formulas estimate,
706 respectively, for the area based on its mean July temperature, and well within the margin of error
707 (12 species) for the formulas.

708 Mean July temperature data are not available for the other two sites we inventoried
709 completely, Kugluk (Bloody Falls) Territorial Park in the Arctic ecozone and Fockler Creek in

the Subarctic ecozone, but we assume the mean July temperatures would be higher at these sites because they are further inland (14 kilometres and 40 kilometres, respectively) and further away from the cooling influence of the coast~~al region~~. Under that assumption, our observed species diversity at Fockler Creek (195 species) and Kugluk (Bloody Falls) Territorial Park (201 species) would be considerably lower than Rannie's (1986) formulas estimate. For example, with the equation based on temperature station data an 11.5°C mean July temperature would predict 249 species and a 12°C mean July temperature would predict 261 species. If we expanded the limits of these areas and/or spent more time exploring these areas, greater species diversity might be recorded in accordance with the formula predictions; or, the relationship may not apply in areas like these with higher mean July temperatures. The formula based on temperature station data was developed with data from 14 sites in the Canadian Arctic Archipelago and five in northern Quebec and Labrador, with the highest mean July temperature in the analysis being 9.3°C, at Deception Bay, Quebec. The second formula, based on temperature station and other temperature data, was developed with data from more sites in the Canadian Arctic Archipelago and northern Quebec and Labrador. In that analysis, however, only a single site on mainland Nunavut/Northwest Territories site (Bathurst Inlet) was included, and it was the only one with a mean temperature of 10°C or greater. Since both formulas overestimate floristic diversity for Kugluktuk and hypothetically for the other areas we surveyed in detail (with the degree of that overestimation varying depending on how the limits of the areas are defined), it is possible the relationship between mean July temperature and floristic diversity may not be as strong or accurate in areas, such as Kugluktuk, with higher average temperatures than those used to develop the formulas. Floristic data from additional sites in bioclimate subzone D are needed to test this; unfortunately such data do not exist. Elsewhere in the Arctic, the formula considerably

733 overestimated diversity at Burwash Bay on Baffin Island (Jacobs et al., 1997), and species
734 diversity and mean July temperature were not strongly correlated in a study of vascular plant
735 species richness along the Hood River in Nunavut, attributed to considerable variation in other
736 factors (Gould & Walker, 1997).

737 The distribution maps in Porsild and Cody (1980) show numerous boreal species
738 reaching or extending slightly beyond the treeline area across Northwest Territories and
739 Nunavut, and numerous species distributed widely across the boreal forest and low Arctic areas.
740 We thus expected species diversity to be higher in the Subarctic portion of the study area
741 compared to the Arctic portion. However, more species were documented in the Arctic portion of
742 the study area (287 species) than the Subarctic portion (223 species). This may be a function of
743 the amount of search effort expended, as we explored and spent more time at a greater number of
744 sites within the Arctic ecozone compared to the Subarctic ecozone (Fig. 3). Nevertheless, there
745 are considerable floristic differences between these ecozones considering presence and absence
746 of species: 199 taxa were recorded in both ecozones, 88 taxa were recorded only in the Arctic
747 portion of the study area and 24 taxa were recorded only in the Subarctic portion of the study
748 area. We found similar numbers of taxa in Kugluk (Bloody Falls) Territorial Park (207 taxa),
749 Kugluktuk (215), and Fockler Creek area (199), and each had a subset of unique species (Table
750 2).

751 Species that were found only in the Subarctic portion of the study area include boreal or
752 primarily boreal species (*Alnus alnobetula*, *Arctostaphylos uva-ursi*, *Botrychium* "neolunaria",
753 *Braya glabella* subsp. *glabella*, *Carex adelostoma*, *Carex capitata, C. livida*, *Deschampsia*
754 *sukatschewii* subsp. *borealis* (Trautv.) Tzvelev, *Eremogone capillaris* subsp. *capillaris*, *Petasites*
755 *frigidus* subsp. *sagittatus*, *Potentilla biflora* Willd. ex Schltdl., *Sabulina stricta* (Sw.) Rchb.,

Salix arbusculoides, *Stellaria borealis* subsp. *borealis*, *Utricularia intermedia*), species that span the boreal and low Arctic regions of North America (*Agrostis mertensii*, *Artemisia borealis* Pallas subsp. *borealis*, *Linum lewisii* Pursh subsp. *lewisii*, *Lycopodium annotinum* subsp. *alpestre* (Hartm.) Á. Löve & D. Löve) and primarily Arctic taxa (*Potentilla hyparctica* Malte subsp. *hyparctica*, *Cardamine bellidifolia* L., *Pedicularis flammea* L., *Sabulina rossii* (R. Br.) Dillenb. & Kadereit, *Draba simmonsii*, *Eutrema edwardsii* R. Br.). All but three of the boreal or primarily boreal species (*Carex adelostoma, C. livida*, *Utricularia intermedia*) have been recorded elsewhere in the Canadian Arctic ecozone, and all of the other taxa we recorded only from the Subarctic portion of the study area have been recorded elsewhere in Arctic areas. It is likely that many or possibly all of these taxa extend further north than currently documented in the study area.

We expected to find numerous, rare boreal species at or near the northern limits of their ranges at the Subarctic sites south of Fockler Creek, especially those (Kendall River, Bigtree River, Melville Creek) where white spruce forests were much more extensive than the forest stands at Fockler Creek, but we did not find this to be the case. Although we did not exhaustively survey the sites south of Fockler Creek and spent relatively short periods of time at each, we did search each site for unique or rare species. We found only six species at these southern sites that we did not also find at Fockler Creek or further north: *Agrostis mertensii* and *Alnus alnobetula* from the Bigtree River site, *Eremogone capillaris* subsp. *capillaris* from the Kendall River site, *Carex capitata* from the Melville Creek and Kendall River sites, *Arctostaphylos uva-ursi* from the Melville Creek site, and *Botrychium* "neolunaria" from the Coppermine Mountains site (an upland tundra habitat). Three of these (*Arctostaphylos uva-ursi*, *Botrychium* "neolunaria", *Eremogone capillaris* subsp. *capillaris*) have not been recorded within the Arctic ecozone in

Nunavut. The species we observed in the understories of the white spruce forests and open habitats at Subarctic sites were generally the same common low Arctic species present in the tundra communities in the Arctic ecozone (J.M. Saarela, pers. obs.). This pattern has been observed elsewhere in areas at or near treeline, such as on the Seward Peninsula of Alaska and in the forest-tundra flora around Nueltin Lake in southern Nunavut (Porsild, 1950b). Nevertheless, further exploration of the Subarctic white spruce forest and forest-tundra along the Coppermine River will undoubtedly result in discovery of additional locally rare species at or near their northern limits in Nunavut.

We have documented 207 vascular plant taxa in Kugluk (Bloody Falls) Territorial Park (Table 2). We also collected nine additional species in the Bloody Falls area outside the park boundary. Three of these were from just beyond the park boundary on the west side of the river (*Anthoxanthum arcticum*, *Eriophorum brachyantherum*, *Leymus mollis* subsp. *villosissimus*) and the remainder were on the east side of the river (*Botrychium tunux*, *B. minganense*, *Draba cinerea*, *Halerpestes cymbalaria*, *Oxytropis varians*, *Physaria arctica*, *Woodsia alpina*). As such, the park and immediate surrounding area are home to considerable amount of plant biodiversity along the lower Coppermine River, including some rare species that are known only from the Bloody Falls area within the study area. These include *Anthoxanthum arcticum*, *Calamagrostis stricta* subsp. *stricta*, *Cryptogramma stelleri*, *Deschampsia brevifolia* R. Br., *Elymus violaceus* (Hornem.) Feilberg, *Epilobium arcticum*, *Festuca viviparoidea* subsp. *viviparoidea, Myriophyllum sibiricum* Kom., *Phippsia algida* (Sol.) R. Br., *Puccinellia arctica* (Hook.) Fernald & Weath., *Ranunculus confervoides* (Fr.) Fr., *Salix glauca* L. var. *glauca* and *Stellaria crassifolia*. Two of these records are notable as southern range extensions (*Anthoxanthum arcticum* and *Epilobium arcticum*). Some 26 species were not collected at sites in

802 the study area further north than Kugluk (Bloody Falls) Territorial Park (we collected all of these
803 at more than one site in the study area, including *Artemisia hyperborea* Rydb, *Askellia pygmaea*,
804 *Botrychium minganense* Vict., *B. tunux*, *Braya humilis* (C.A. Mey.) B.L. Rob. subsp. *humilis*,
805 *Calamagrostis stricta* subsp. *groenlandica* (Schrank) Á. Löve, *Campanula uniflora* L., *Carex*
806 *concinna, C. norvegica*, *C. petricosa* subsp. *petricosa, Castilleja raupii, Elymus alaskanus*
807 (Scribn. & Merr.) Á. Löve subsp. *alaskanus, E. alaskanus* subsp. *hyperarcticus* (Polunin) Á.
808 Löve & D. Löve, *Equisetum palustre*, *E. scirpoides*, *Eriophorum callitrix* Cham., *E. triste* (Th.
809 Fr.) Hadač & Á. Löve, *Festuca altaica, Juniperus communis* subsp. *depressa*, *Linnaea borealis*
810 subsp. *americana*, *Picea glauca*, *Physaria arctica* (Wormsk. ex Hornem.) O'Kane & Al-
811 Shehbaz, *Shepherdia canadensis, Stuckenia vaginata* (Turcz.) Holub., *Rhododendron*
812 *groenlandicum*, *Rubus arcticus* subsp. *acaulis* and *Utricularia vulgaris*. A subset of these taxa
813 are at their known northern limits in Nunavut in Kugluk (Bloody Falls) Territorial Park and
814 vicinity: *Artemisia hyperborea, Botrychium tunux, Carex concinna, C. norvegica*, *C. petricosa*
815 subsp. *petricosa, Castilleja raupii, Cryptogramma stelleri, Festuca altaica, Juniperus communis*
816 subsp. *depressa*, *Linnaea borealis* subsp. *americana*, *Shepherdia canadensis*, *Rhododendron*
817 *groenlandicum*, *Rubus arcticus* subsp. *acaulis* and *Utricularia vulgaris*. We did not explore the
818 flora along the Coppermine River between the northern boundary of Kugluk (Bloody Falls)
819 Territorial Park and just south of Kugluktuk (approximately 67°48'54”N, 115°6'9.1"W) and it is
820 likely that at least some of these taxa occur in this area north of the park limit. Further field work
821 is required to determine their true limits in the area, as well as the environmental conditions
822 limiting their local distributions. The conspicuous shrub species *Juniperus communis* and
823 *Shepherdia canadensis*, which are both fairly common along the west banks of the Coppermine
824 River in the park north of Bloody Falls, would be particularly easy to survey along the banks of

825 the Coppermine River between the park and Kugluktuk. Even if some or all of these taxa are
826 eventually found to occur north of the park, the current data identify Kugluk (Bloody Falls)
827 Territorial Park as an important conservation area for many regionally rare vascular plant
828 species.

829 In the northern portion of the study area we found several species that were not found at
830 sites to the south. We collected 13 species in and around Kugluktuk that we did not encounter
831 elsewhere within the study area, including *Anthoxanthum hirtum*, *Arctagrostis latifolia* subsp.
832 *arundinacea*, *Arctous alpina* (L.) Nied., *Castilleja caudata* (Pennell) Rebrist. (Kugluktuk and
833 Heart Lake), *Comastoma tenellum* (Rottb.) Toyok., *Draba nivalis* Lilj*., Epilobium* cf.
834 *anagallidifolium*, *Micranthes porsildiana* (Calder & Savile) Elven & D.F. Murray, *Potamogeton*
835 *gramineus*, *Polygonum aviculare*, *Potentilla arenosa* subsp. *chamissonis*, *Transberingia*
836 *bursifolia* and *Woodsia alpina* (Bolton) S.F. Gray. Seven species in the study area are known
837 only from Richardson Bay at the mouth of the Richardson River, where we made collections in
838 an extensive salt marsh habitat. These halophytic taxa include *Carex ursina* Dewey, *Puccinellia*
839 *phryganodes* subsp. *neoarctica* (Á. Löve & D. Löve) Elven, *P. vaginata* (Lange) Fernald &
840 Welsh, *Suaeda calceoliformis* (Hook.) Moq., *Lomatogonium rotatum* subsp. *rotatum, Potentilla*
841 *anserina* subsp. *groenlandica* Tratt. and *Potentilla pulchella* R. Br. Other Arctic halophytes were
842 collected at both Richardson Bay and along or near the coast of an unnamed island in the mouth
843 of the Coppermine River, including *Carex glareosa* Wahlenb. subsp. *glareosa*, *C. subspathacea*
844 Wormsk., *Gentianopsis detonsa* (Rottb.) Ma subsp. *detonsa*. All of these taxa are likely to occur
845 elsewhere along the mainland coast of the study area and on other islands in the mouth of the
846 Coppermine River, where there is suitable habitat. None of them, however, would be expected to

847 occur further inland, except perhaps in areas of high salinity. For example, *Suaeda calceoliformis*
848 has been recorded at inland sites on southern Victoria Island (Gillespie et al., 2015).

849 The vascular plant flora of the lower Coppermine River valley and vicinity is comprised
850 almost entirely of native species. The only non-native taxon recorded in the study area is *Festuca*
851 *rubra* L. subsp. *rubra*. It was likely planted in Kugluktuk (we collected it in Kugluktuk in a yard
852 and on the ball diamond) and may have been introduced unintentionally from the community to
853 the fishing area at Bloody Falls, where we found it growing on the rocky ledges immediately
854 above the falls. Two species that are native in northern North America may be introduced in the
855 study area, but it is impossible to determine their statuses with any confidence. *Hordeum*
856 *jubatum* L., which is newly reported for the study area, is native to western North America and
857 often grows like a weed, and may have established itself in the study area in recent times. It is
858 known from other Arctic sites on mainland Nunavut and on Baffin Island (see species account).
859 Another weedy species, *Polygonum aviculare*, which is newly recorded for Kugluktuk, often
860 grows like a weed but may be native (see species account). Future surveyors should be on the
861 lookout for introduced species, particularly in Kugluktuk where disturbed habitats are abundant
862 and where introduced species may be most likely to first get established.

863 The study area represents an important floristic transition zone between the Subarctic and
864 Arctic floras in the western Canadian Arctic. More than 90 species are at the northern edge of
865 their known ranges in the study area. Some 57 taxa recorded in the study area are restricted to the
866 mainland and not recorded from adjacent Victoria Island or any other Canadian Arctic island.
867 These include *Allium schoenoprasum*, *Alnus alnobetula*, *Anthoxanthum hirtum, Arctagrostis*
868 *latifolia* subsp. *arundinacea*, *Arctostaphylos uva-ursi*, *Arnica frigida*, *Bromus pumpellianus,*
869 *Calamagrostis stricta* subsp. *stricta*, *Dasiphora fruticosa*, *Deschampsia cespitosa* subsp.

870 *cespitosa, Betula occidentalis*, *Botrychium minganense*, *B.* "neolunaria", *B. tunux*, *Carex*
871 *adelostoma*, *Carex capitata*, *Carex livida*, *Carex podocarpa*, *Castilleja caudata*, *Castilleja*
872 *raupii*, *Draba lonchocarpa*, *Draba pilosa*, *Eleocharis quinqueflora*, *Epilobium anagallidifolium*,
873 *Epilobium davuricum*, *Equisetum fluviatile*, *Eremogone capillaris* subsp. *capillaris*, *Erysimum*
874 *coarctatum, Eurybia sibirica*, *Festuca altaica*, *Gentianopsis detonsa* subsp. *detonsa, Juncus*
875 *alpinoarticulatus* subsp. *americanus*, *Juniperus communis* subsp. *depressa*, *Lathyrus japonicus*,
876 *Linnaea borealis* subsp. *americana*, *Luzula groenlandica*, *Micranthes porsildiana, Petasites*
877 *frigidus* subsp. *sagittatus*, *Parnassia palustris* subsp. *neogaea, Picea glauca, Pinguicula villosa*,
878 *Polygonum aviculare*, *Potamogeton gramineus, Rubus acaulis* subsp. *arcticus*, *Saussurea*
879 *angustifolia* subsp. *angustifolia*, *Rhododendron groenlandicum*, *Salix pseudomyrsinites*, *Salix*
880 *pulchra*, *Senecio lugens*, *Silene uralensis* subsp. *uralensis, Shepherdia canadensis*, *Sparganium*
881 *hyperboreum*, *Stellaria borealis* subsp. *borealis, Stuckenia pectinata*, *Triglochin maritima*,
882 *Utricularia intermedia* and *Utricularia vulgaris.* Another 28 species at the edges of their ranges
883 in the study area are restricted to the mainland in the western Arctic. None of these is recorded
884 from any of the western Arctic islands, but all are known from one or more eastern Arctic
885 islands, mostly at latitudes lower than in the study area. These include *Agrostis mertensii*
886 (southern Baffin Island), *Calamagrostis canadensis* subsp. *langsdorffii* (southern Baffin Island),
887 *Calamagrostis lapponica* (southern Baffin Island), *Carex gynocrates* (southern Baffin Island),
888 *Carex norvegica* (southern Baffin Island and Southampton Island), *Carex supina* subsp.
889 *spanicoarpa* (Baffin, Banks and Southampton islands), *Carex williamsii* (southern Baffin Island
890 and Southampton Island), *Chamerion angustifolium* subsp. *angustifolium* (southern Baffin
891 Island), *Comastoma tenellum* (Banks and Southampton islands), *Coptidium pallasii* (southern
892 Baffin Island), *Cryptogramma stelleri* (southern Baffin Island), *Eleocharis acicularis* (southern

Baffin Island), *Epilobium palustre* (Southampton Island), *Hordeum jubatum* (southern Baffin Island), *Kalmia procumbens* (southern Baffin Island), *Lycopodium annotinum* subsp. *alpestre* (southern Baffin Island), *Pedicularis flammea* (several eastern Arctic islands), *P. lapponica* (southern Baffin Island and Southampton Island), *Platanthera obtusata* subsp. *obtusata* (southern Baffin Island), *Poa alpina* (Baffin and Southampton islands), *Primula egaliksensis* (southern Baffin Island), *Sabulina stricta* (Baffin and Southampton islands), *Sagina nodosa* subsp. *borealis* (southern Baffin Island), *Trichophorum caespitosum* subsp. *caespitosum* (southern Baffin Island), *Triglochin palustris* (southern Baffin Island) and *Woodsia alpina* (southern Baffin Island and Nottingham Island). A third, smaller group of species at the edge of their ranges in the study area are not recorded from Victoria Island immediately adjacent to the study area but are recorded from other islands in the western and eastern Canadian Arctic Archipelago. These include *Achillea millefolium* subsp. *borealis* (Banks Island and southern Baffin Island), *Antennaria monocephala* subsp. *angustata* (numerous Arctic islands), *Carex supina* subsp. *spaniocarpa* (Banks, Baffin and Southampton islands), *Comastoma tenellum* (Banks and Southampton islands), *Draba fladnizensis* (Baffin, Banks, Cornwallis and Southampton islands), *Festuca viviparoidea* subsp. *viviparoidea* (Banks Island and northern Ellesmere Island) and *Pedicularis labradorica* (Banks Island and southern Baffin Island). The disjunct distributions of some or all of these taxa in the Canadian Arctic Archipelago may reflect origins from different source regions. Studies of postglacial dispersal based on spatial genetic structure in widespread Arctic taxa have identified varying source areas from which taxa colonized islands in different parts of their ranges, and in some cases eastern and western Canadian Arctic populations have unique origins (Alsos et al., 2015; Eidesen et al., 2007; Eidesen et al., 2013). None of the taxa in the above lists have been characterized in this manner.

916 Some species that occur along the lower Coppermine River and vicinity that are not
917 known from adjacent Victoria Island may yet be discovered there. Indeed, based on fieldwork on
918 southern and northwestern Victoria Island in 2008 and 2010 we documented nine species on the
919 island that were not previously known from it or elsewhere in the western Canadian Arctic
920 Archipelago but known from the adjacent mainland (including the study area for most taxa).
921 These newly recorded species were *Andromeda polifolia* L., *Arenaria humifusa* Wahl., *Carex*
922 *bicolor* Bellardi ex All., *Corallorhiza trifida* Chat., *Eriophorum brachyantherum* Trautv. & C.A.
923 Mey., *Luzula wahlenbergii* Rupr., *Pinguicula vulgaris* L., *Sabulina stricta* and *Salix arctophila*
924 (Gillespie et al., 2015).
925
926 **Comparison of floristic diversity in the study area with other local Arctic floras**
927 Comparison of floristic diversity in the lower Coppermine River valley and vicinity with
928 that in other Arctic and Subarctic regions (territorial floras, large floristic regions, local Arctic
929 and Subarctic floras) provides context for understanding the relative richness of the area (Table
930 3) although we recognize that the sizes, local environmental conditions and search effort to date
931 in the various areas that have been studied floristically are not necessarily equivalent and thus
932 not directly comparable. As well, taxonomic concepts at family, genus and species levels vary
933 among studies, and the historical biogeography (and therefore the floristic composition) of most
934 areas is different. The study area in western Nunavut includes some 70% of the family diversity,
935 59% of the genus diversity and less than half (ca. 48%) of the species diversity recorded for
936 Nunavut (excluding the species newly recorded for the territory here). The flora of Nunavut is
937 primarily Arctic but includes numerous boreal species, as demonstrated here for the study area.
938 Some of the boreal species in Nunavut are known only from islands in James Bay (Nunavut's

939 extreme southern limit) and/or the southeastern mainland. The flora of Northwest Territories, by
940 contrast, has a much more diverse flora compared to Nunavut. Although it includes some Arctic
941 habitat, most of Northwest Territories comprises boreal forest and forest-tundra, with a distinct
942 and diverse flora. Compared to the study area, Northwest Territories has twice the number of
943 families, nearly three times the number of genera and nearly four times the number of species.
944 All of the species recorded in the study area are considered part of the Panarctic flora, and the
945 study area includes some 50% of the family diversity, 32% of the genus diversity and 13.6% of
946 the species diversity recorded for the Panarctic flora.
947 The Canadian Arctic Archipelago (Nunavut and Northwest Territories) is the most easily
948 defined Arctic region in Canada, and is the best known Arctic region floristically. It is
949 phytogeographically diverse, as it includes both amphi-Beringian elements in the west and
950 amphi-Atlantic elements in the east, in addition to widespread circumpolar and primarily North
951 American taxa, yet there are more plant families recorded in the substantially smaller study area
952 (45 families) than in the Canadian Arctic Archipelago, where 42 families have been recorded
953 (Aiken et al., 2007; Gillespie et al., 2015). Five families are recorded in the study area that are
954 not recorded in the Canadian Arctic Archipelago (Amaryllidaceae, Eleagnaceae, Linnaeaceae,
955 Ophioglossaceae, Typhaceae); these are primarily boreal families but each reaches the Arctic
956 portion of the study area. Four families recorded in the Canadian Arctic Archipelago are not
957 recorded in the study area (Crassulaceae, Diapensiaceae, Polemoniaceae and Portulacaceae)
958 (Aiken et al., 2007; Gillespie et al., 2015). Each of these is recorded elsewhere from the
959 mainland Arctic in Canada outside the study area. Genus-level diversity is slightly greater in the
960 Canadian Arctic Archipelago, where 141 genera are recorded, compared to the study area, in
961 which 134 genera are recorded. Genera recorded in the study area that do not occur in the

Canadian Arctic Archipelago include the primarily temperate- to boreal-distributed *Allium* L., *Alnus* Mill., *Arctostaphylos* Adans., *Botrychium* Sw., *Bromus* L., *Comarum* L., *Dasiphora* Raf., *Gentianopsis* Ma, *Lathyrus* L., *Linnaea* L., *Picea* Mill., *Populus* L., *Saussurea* DC. and *Sparganium* L., while genera recorded in the Canadian Arctic Archipelago not recorded in the study area include *Bartsia* L., *Diapensia* L., *Diphasiastrum* Holub, *Euphrasia* L., *Montia* L., *Packera* Á. Löve & D. Löve, *Phlox* L., *Pleuropogon* R. Br., *Polemonium* L., *Rhodiola* L., *Solidago* L. and *Veronica* L. Some of these latter genera are represented in the Canadian Arctic Archipelago by amphi-Beringian taxa known from the western Arctic islands and the western mainland Arctic (*Packera hyperborealis* (Greenm.) Á. Löve D. Löve, *Phlox hoodii* Richardson, *Polemonium boreale* Adams), whereas others are amphi-Atlantic taxa known in Arctic Canada only in the eastern Canadian Arctic Archipelago and adjacent mainland (*Bartsia alpina* L., *Euphrasia disjuncta* Fernald & Wiegand, *E. wettsteinii* G. Gussarova, *Diphasiastrum alpinum* (L.) Holub, *Rhodiola rosea* L., *Veronica wormskjoldii* Roem. & Schult.) (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). *Pleuropogon sabinei* R. Br. is recorded from throughout the Canadian Arctic Archipelago, including adjacent Victoria Island, and along Hudson Bay on mainland Nunavut (Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980), and *Montia fontana* L. has a scattered boreal to low Arctic distribution (Aiken et al., 2007; Porsild & Cody, 1980). Of all these taxa, *Montia fontana* may be most likely to occur in the study area based on its known distribution in the Arctic. The greatest difference in diversity between the Canadian Arctic Archipelago and the study area is at the species level. There are 67 more species recorded for the Canadian Arctic Archipelago than the lower Coppermine River valley and vicinity, and there are 80 more species in the Canadian Arctic Archipelago than are recorded in

the Arctic portion of the study area, but there are considerable differences in species composition between them.

On Victoria Island immediately north of the study area, some 277 taxa have been recorded (Aiken et al., 2007; Gillespie et al., 2015) (further additions to the islands flora gathered by our team 2008 and 2010 are as yet unpublished and are not considered in these counts; L.J. Gillespie and J. M. Saarela, unpublished data). The large difference in species diversity between Victoria Island and the study area is consistent with the general pattern of a decrease in species diversity latitudinally from south to north, coinciding with the steep south to north temperature gradient that occurs in the Arctic over short distances (Callaghan et al., 2004). This is exemplified by differing species diversity and temperature ranges in the Arctic vegetation subzones. Victoria Island represents the southern limit of Arctic vegetation subzone D in the western Arctic—one subzone north of subzone E, which includes the Arctic portion of the study area—with a mean July temperature of 8–9°C (vs. 9–12°C in subzone E) and an average of 125–250 species (vs. 200–500) in local floras (Walker et al., 2005).

Floristic comparisons with other areas at smaller geographical scales indicate that the lower Coppermine River valley and vicinity is floristically rich in Nunavut relative to other regional and local areas. Vascular plant diversity has been studied in relatively few local areas on the mainland Canadian Arctic in Nunavut, Northwest Territories and Yukon, compared to local areas in the Canadian Arctic Archipelago (reviewed in Aiken et al., 2007), Arctic Quebec (Blondeau, 1989a; Blondeau, 1989b; Blondeau, 1990; Blondeau & Cayouette, 2002; Blondeau & Louis-Marie, 1985; Deshaye, 1983; Dion et al., 1999) and subarctic Quebec (Deshaye et al., 1988; Payette et al., 1978; Payette & Lepage, 1977). The only local mainland Canadian Arctic area with greater known species diversity than the study area is Ivvavik National Park in

northern Yukon (10168 km^2), where 414 taxa have been documented (Bennett, 2008). The diverse flora there is in part due to the treeline extending very close to the Arctic coast and the unique amphi-Beringian and westerns elements of the flora.

The largest mainland Arctic area in Northwest Territories and Nunavut that has been studied floristically is Tuktut Nogait National Park and vicinity, where 265 species (268 taxa) in an area of some 33000 km^2 have been recorded (Saarela et al., 2013a). The Coppermine River area, which is smaller than Tuktut Nogait National Park and vicinity, has similar diversity at the family level (43 families in Tuktut Nogait National Park and vicinity vs. 45 in the study area) and greater diversity at the genus (134 vs. 119 genera) and species (300 vs. 265 species) levels. Several species are recorded from Tuktut Nogait National Park and vicinity that are not known from the study area, including *Anticlea elegans* Pursh (Rydb.) var. *elegans*, *Arctanthemum arcticum* subsp. *polare* (Hultén) Tzvelev, *Artemisia borealis* subsp. *richardsoniana* (Besser) Korobkov, *Castilleja hyperborea* Pennel, *Cerastium regelii* Ostenf. subsp.*regelii*, *Chrysosplenium tetrandrum* Th. Fr., *Draba borealis* DC., *D. oligosperma* Hook., *D. subcapitata* Simmons, *Eriophorum russeolum* subsp. *albidum* Väre, *Erigeron compositus* Pursh, *Gentiana prostrata* Haenke, *Mertensia drummondii* (Lehm.) G. Don, *Micranthes tenuis* (Wahlenb.) Small, *Packera hyperborealis* (Greenm.) Á. Löve & D. Löve, *Papaver cornwallisense* D. Löve, *Parrya arctica* R. Br., *Petasites frigidus* (L.) Fr. subsp. *frigidus*, *Plantago eriopoda* Torr., *P. maritima* subsp. *borealis* (Lange) A. Blytt & O.C. Dahl, *Phlox hoodii*, *Poa ammophila* A.E. Porsild, *P. hartzii* Gand. subsp. *hartzii*, *Puccinellia angustata* (R. Br.) E.L. Rand & Redfield, *P. banksiensis* Consaul, *P. andersonii* Swallen, *P. tenella* subsp. *langeana* (Berlin) Tzvelev, *P. vahliana* (Liebm.) Scribn. & Merr., *Polemonium boreale*, *Potentilla hyparctica* subsp. *elatior* (Abrom.) Elven & D.F. Murray, *P. subgorodkovii* Jurtzev, *P. subvahliana* Jurtzev, *Ranunculus subrigidus*

W.B. Drew, *Salix glauca* var. *stipulate* Flod., *S. hastate* L., *S. phlebophylla* Andersson, *S. polaris* Wahlenb., *Saxifraga cespitosa* L., *Selaginella selaginoides* (L.) P.Beauv. ex Mart. & Schrank., *Silene ostenfeldii* (A.E.Porsild) J.K. Morton and *Solidago multiradiata* Aiton. Our study of Tuktut Nogait National Park and vicinity and the current study both include protected areas, a national park in the earlier study and a territorial park in the current one. The number of species recorded in each of these protected areas is similar, despite the protected areas being much different in size. A total of 215 species are known from Tuktut Nogait National Park (18181 km^2) whereas 208 species are known from the substantially smaller Kugluk (Bloody Falls) Territorial Park (10.5 km^2). Given its very high species diversity relative to its size and compared to vascular plant diversity in the nearest Arctic national park, Kugluk (Bloody Falls) Territorial Park is clearly important from a plant and habitat conservation perspective in both the Canadian Arctic and Nunavut.

Elsewhere on the Canadian Arctic mainland, there have been three floristic studies along western Hudson Bay, Nunavut. Each of these areas is fully within the Arctic ecozone and much less diverse than the study area on western mainland Nunavut. The most northern of these was conducted in the Wager Bay region, an area of approximately 19500 km^2 (not including the bay), where the recorded flora is considerably less diverse (113 species) than the flora of the study area (301 species) (Cody et al., 1989). That report is based only on collections made during a survey carried out in 1984, and Cody et al. (1989) considered their species list "to be a reasonably complete list". Most of the collections sites recorded in that study are now part of Ukkusiksalik National Park of Canada. This is another example of a much larger national park with much lower vascular plant species diversity than the smaller and more diverse Kugluk/Bloody Falls Territorial Park. Further reconnaissance of the Wager Bay area, including Ukkusiksalik National

Park, is likely to add considerably to the area's species list. In Chesterfield Inlet, south of Wager Bay, some 160–180 taxa have been recorded (Polunin, 1940; Savile & Calder, 1952). About 100 km^2 south of Chesterfield Inlet Korol (1992) recorded 162 species (165 taxa) in an area of ca. 180 km^2 around Rankin Inlet, based on collections he made in 1988. Species recorded in one or more of these areas not known from the study area include *Arabis arenicola* (Richards) Gel., *Astragalus eucosmus* Robins., *Braya purpurascens* (R. Br.) Bunge, *Calamagrostis deschampsioides* Trin., *Cochlearia officinalis* L., *Diapensia lapponica* L., *Draba lactea* Adams, *Luzula wahlenbergii* Rupr., *Micranthes tenuis*, *Myriophyllum exalbescens* Fern., *Oxytropis bellii* (Britt.) Palibine, *O. hudsonica* (Greene) Fern., *Phyllodoce caerulea* (L.) Bab., *Pleuropogon sabineii*, *Poa flexuosa* Sm., *Puccinellia tenella* subsp. *langeana*, *Salix fullertonensis* Schneid., *S. fuscescens* Anderss., *S. herbacea* L. and *Saxifraga rivularis* L. Some of these are amphi-Atlantic taxa that would not be expected to be found in western Nunavut.

There have been two floristic studies in central mainland Nunavut. In the Bathurst Inlet region, some 240 vascular plant species have been recorded (Cody, 1954a; Cody et al., 1984; Porsild & Cody, 1980), indicating a richer flora compared to the study sites along Hudson Bay but a comparatively poorer flora than the study area. Several amphi-Beringian species recorded in the study area reach their western limit in the Bathurst Inlet, as described below in the annotated checklist. Species recorded from the Bathurst Inlet area not known from the study area include *Anemone multifida* Poir., *Calamagrostis deschampsiodes*, *Carex garberi* Fern., *C. tenuiflora* Wahlenb., *Eriophorum russeolum* subsp. *albidum*, *Luzula parviflora* (Ehrh.) Desv., *Myrica gale* L., *Oxycoccus microcarpus* Turcz., *Ranunculus sulphureus* Sol., *Salix brachycarpa* Nutt., *S. fullertonensis*, *S. fuscescens* and *Viola pallens* (Banks) Brainerd. In a study of the Hood River, an Arctic river on mainland Nunavut that drains into Bathurst Inlet, 69 to 109 vascular

plant species were recorded in a 17240 km^2 area along the river, with 210 species recorded in the entire study area (Gould & Walker, 1997). Details of specific sites where species have been recorded along the Hood River are not given in Gould & Walker (1997) and have not been published elsewhere, nor is it clear from their paper whether or not all of the species they recorded are vouchered with specimens (housed in the University of Colorado Herbarium, COLO and ALA). The Hood River is less rich floristically than the lower Coppermine River, with nearly 100 fewer species recorded from it. However, the relationship between species richness and the local environment, and the structure and diversity of the vegetation, are much better characterized for the Hood River than the Coppermine River (Gould & Walker, 1997; Gould & Walker, 1999). The biodiversity data in the current study would serve as an excellent baseline for a more detailed characterization of the vegetation along the Coppermine River, taking an ecological approach similar to that used along the Hood River. Vascular plants have also been studied in the Yathkyed Lake basin and along the Kazan River in interior Nunavut. Alfred E. Porsild collected some 500 numbers in these areas in 1930 (Porsild, 1950b). The collections were mapped in Porsild & Cody (1980) but were never published in detail, so floristic comparisons with this part of mainland Nunavut are difficult.

There has been only one previous floristic study of an area within the forest-tundra in Nunavut. Porsild (1950b) reported on a collection of some 300 numbers of vascular plants made by Francis Harper (a zoologist) in 1947 around northwestern Nueltin Lake in southeastern Nunavut. Eighty to ninety percent of the land is tundra in that area, with stands of black spruce and tamarack in the muskegs and on upland slopes (Porsild, 1950b). The collections represented 134 species, including numerous forest species not recorded elsewhere on mainland Nunavut, including the study area, such as *Agrostis scabra* Willd., *Betula papyrifera* Marsh, *Carex*

canescens L., *C. disperma* Dew., *C. leptalea* Wahlenb., *C. limosa* L., *Diphasiastrum complanatum* (L.) Holub, *Equisetum sylvaticum* L., *Erigeron acris* var. *kamtschaticus* (DC.) Herder, *E. elatus* (Hook.) Greene, *Geocaulon lividum* (Richardson) Fern., *Gymnocarpium robertianum* (Hoffm.) Newman, *Larix laricina* (Du Roi) Koch, *Picea mariana* (Mill.) B.S.P., *Potamogeton friesii* Rupr., *P. alpinus* Balbis, *P. praelongus* Wulf., *Mitella nuda* L., *Ribes triste* Pall., *Rubus strigosus* Michx., *Pyrola minor* L., *Menyanthes trifoliata* L., *Galium labradoricum* Wieg. and *Viburnum edule* (Michx.) Raf. Based on knowledge of the Nueltin Lake area flora and surrounding areas, Porsild (1950b) estimated there to be at least 300 species in the forested portion of what is now southern Nunavut, adjacent to the southern limit of the Arctic. Floristic diversity in that little-explored area remains poorly understood.

The relatively high species diversity in the study area can be attributed to (1) the large number of boreal species recorded in the area, many of which extend into the Arctic ecozone along the Coppermine River valley associated with the northern extent of the forest-tundra; (2) varying topography in the area, providing numerous microhabitats for species; (3) varying geology, including a mix of calcareous and acidic substrates, which each support different species; (4) and considerable search effort in the area over time. Callaghan et al. (2004) noted about 40% of the global Arctic vascular plant flora is represented by boreal species that barely penetrate the Arctic, occurring close to the treeline and/or along large rivers connecting the Subarctic and the Arctic. This is indeed the general distribution pattern of the boreal element of the lower Coppermine River flora. Callaghan et al. (2004) suggested that the boreal species that already extend into the Arctic are likely to be the ones that colonize further with continued warming. The northern range extensions we have documented for boreal taxa along the Coppermine River are likely long-established species that simply have not previously been

recorded, rather than recent colonizations. Accordingly, the floristic data presented here should serve as a useful baseline for understanding potential future change in the distributions of these species in the study area, and for documenting the distributions of species that may eventually colonize the study area. Organisms at the edge of their range are of considerable interest to ecologists and evolutionary biologists (Hardle & Hutchings, 2010), and genetic characterization of the such populations may improve understanding of their adaptations to their local environments (e.g., Olson et al., 2013), which in turn may improve models predicting how species may respond to climate change (Wullschleger et al., 2015). Known sites of many of the species at their northern limits in the study area, particularly in and around Kugluktuk and Kugluk (Bloody Falls) Territorial Park, are readily accessible and these would therefore be ideal places for further genetic sampling to address such questions.

ANNOTATED CHECKLIST OF VASCULAR PLANTS

Lycophytes

Lycopodiaceae [2/2]

Huperzia arctica (Grossh. ex Tolm.) Sipliv—Arctic fir clubmoss | Circumpolar?

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluktuk, near Heart Lake and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Bennett, 2015; Cody et al., 1989; Dignard, 2013d; Korol, 1992; Saarela et al., 2013a). Our recognition of *H. arctica* in the

Canadian Arctic as a species distinct from the boreal *H. selago* follows Elven et al. (2011). The taxonomic history of the complex is also reviewed by Jukonienė et al. (2012). Wagner & Beitel (1993a) did not map the taxon, recognized as *H. selago* (L.) Bernh. ex. Schrank and Mart., as occurring in the Canadian Arctic, despite numerous records from the mainland and Arctic islands of Nunavut, most of which were known prior to their publication (Aiken et al., 2007, as H. selago; Cody & Britton, 1989, as H. selago subp. selago; Porsild & Cody, 1980, as Lycopodium selago L.; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], Coronation Gulf, at mouth of Coppermine River, [67.822146°N, 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3281* (CAN-200060); Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3089* (CAN); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull* 3348 (CAN); Kugluk (Bloody Falls) Territorial Park, slope above Bloody Falls (W side) where Coppermine River narrows to Bloody Falls, 67°44'23"N, 115°22'35.9"W ± 25 m, 33 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3849* (CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4340* (CAN).

Lycopodium annotinum subsp. ***alpestre*** (Hartm.) Á. Löve & D. Löve—Stiff clubmoss | Circumpolar-alpine | Noteworthy Record

Our collection of this species is the first one for the study area, where a single large patch was found in growing in a Subarctic snowbed community below a southeast-facing ridge near Tundra

Lake in the vicinity of Fockler Creek, growing with *Trichophorum caespitosum*, *Salix* spp. and *Anemone richardsonii*. Our collection closes a distribution gap between Great Bear Lake and Bathurst Inlet. The species has not been recorded from the Arctic portion of the study area. Elsewhere on mainland Nunavut this species has been recorded from the Bathurst Inlet area from at least three collections (Porsild & Cody, 1980) including *Kelsall & McEwen 274* (CAN-202945) and *Kelsall & McEwan 7* (CAN-202944), from the Hood River (Gould & Walker, 1997), and there are several collections from just north of the treeline along the Nunavut/Northwest Territories border: 64°25'N, 108°54'W, 1938, *Carroll s.n.* (CAN-211367); Contwoyto Lake, 65°42'N, 110°50'W, 1938, *Carroll s.n.* (CAN-211368)—neither mapped in Porsild & Cody (1980); Thelon River ca. 28 miles SW of Beverly Lake, *Kuyt 22* (CAN-561541); and southeastern Nunavut, including *Edlund 523* (CAN-502409), *Boles et al. RB00-22* (CAN-592207), *Boles et al. RB00-14* (CAN-592205) and other sites (Gussow, 1933; Porsild, 1950b) mapped in Porsild & Cody (1980). A collection bearing only "Arctic North America. Dr. Richardson, CAN-4746" [no date] may be from the study area. In the Canadian Arctic Archipelago this taxon is known only from southern Baffin Island (Aiken et al., 2007) and it is present in adjacent northern Quebec and Labrador (Dignard, 2013d). Its known northern limit in the Central Arctic/Subarctic is in the study area. We follow Elven et al. (2011) in recognizing the northern alpine-boreal to southern Arctic plants as subsp. *alpestre*. Porsild & Cody (1980) treated the taxon as *L. annotinum* s.l., while Wagner & Beitel (1993b) did not recognize any infraspecific taxa and attributed previously recognized taxa as environmentally induced forms.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'29.5"N, 115°33'50.4"W ± 50 m, 266 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3430* (CAN, UBC).

Monilophytes

Cystopteridaceae [1/1]

Recognition of Cystopteridaceae (Payer) Shmakov as a family separate from Woodsiaceae, in which *Cystopteris* was recently treated (Smith et al., 2006), follows Christenhusz et al. (2011b) and Rothfels et al. (2012).

Cystopteris fragilis (L.) Bernh., Fig. S2A—Fragile fern, Brittle fern | Cosmopolitan

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Kendall River, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 2003; Cody et al., 1989; Dignard, 2013a; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], on ledge overlooking Coppermine River near settlement, [67.826667°N, 115.09333°W ± 1.5 km], 11 July 1958, *R.D. Wood s.n.* (CAN-265613); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3577* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3887* (CAN, US); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4075* (CAN); SE edge of

Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4356* (ALA, CAN).

Dryopteridaceae [1/1]

Dryopteris fragrans (L.) Schott, Fig. S2B,C—Fragrant wood fern, Fragrant shield fern | European (NE)–Asian–amphi-Beringian–North American (N)

Previously reported from Kugluktuk (Cody, 1954b; Cody & Britton, 1989; Porsild & Cody, 1980). We made collections of this species at Kugluktuk, Tundra Lake in the vicinity of Fockler Creek, Bigtree River and Kugluk (Bloody Falls) Territorial Park. In the Canadian Arctic this species has been recorded from Banks, Baffin, Ellesmere, Southampton and Victoria islands and numerous mainland sites (Aiken et al., 2007; Bennett, 2015; Cody & Reading, 2005; Cody et al., 1989; Dignard, 2013b; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: **Coppermine [**Kugluktuk], [67.833333°N, 115.1°W], 05 July 1958, *R.D. Wood s.n.* (CAN-265611); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 1 August 1951, *W.I. Findlay 227* (DAO-171347 barcode 01-01000617086, MT00194660); Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3091* (CAN, MO, O); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'29.5"N, 115°33'50.4"W ± 50 m, 266 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3429* (CAN, MT, UBC); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'34.8"N, 115°33'27.8"W ± 20 m, 265 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3434* (CAN); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3603* (CAN, US); S-

facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3629* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3934* (ALTA, CAN).

Equisetaceae [1/5]

Equisetum arvense subsp. ***alpestre*** (Wahlenb.) Schönswetter & Elven, Fig. 13A—Alpine field horsetail | Circumpolar-alpine

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. Taxonomy follows Elven et al. (2011), who recognize northern plants as subsp. *alpestre* and more southerly distributed ones as subsp. *arvense*. However, according to the maps in Aiken et al. (2007) the two subspecies are sympatric in the Canadian Arctic Archipelago. Their distributions have not been mapped for the rest of North America. Mainland collections from Tuktut Nogait National Park and vicinity are subsp. *alpestre* (Saarela et al., 2013a). *Equisetum arvense* s.l. is widespread across the Arctic mainland (Bennett, 2015; Cody et al., 2003; Dignard, 2013c; Korol, 1992; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 260* (DAO-171039 barcode 01-01000617100, QFA0229749); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 161* (UBC-V151902); Kugluktuk, 67.825517°N, 115.09015°W, 24 July 2006, *J. Davis*

640 (CAN-597647); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3203* (CAN); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3272* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4057* (CAN, UBC).

Equisetum fluviatile L., Fig. 13B,C—Water horsetail | Circumboreal | Noteworthy Record

Our collections of this species are the first ones from western Nunavut and represent a range extension from the nearest sites along the eastern arm of Great Bear Lake (Cody & Britton, 1989; Porsild & Cody, 1980). Elsewhere in Arctic Nunavut this species is known from two mainland collections: Thelon River ca. 28 mi SW of Beverly Lake, 64°36'N, 100°30'W, 11 July 1960, *E. Kuyt 62*, CAN-561540, mapped in Porsild & Cody (1980); and east of South Bay of Griffin Lake, *Reading s.n.*, DAO [east side of Queen Maud Bird Sanctuary] (Cody, 1996a); and the Belcher Islands (Sanikiluaq, *Consaul et al. 3875*, CAN-599928) (Dignard, 2013c). There are non-Arctic Nunavut records from adjacent to the Manitoba border (Nueltin Lake, *Harper 2378*, CAN-3849) (Hauke, 1993; Porsild & Cody, 1980) [not mapped in Cody & Britton (1989)] and Akimiski Island (Blaney & Kotanen, 2001). All of the Nunavut collections are along the northern edge of this primarily boreal species' range. It also reaches the Arctic in the Anderson River Delta, Northwest Territories (Grizzly Bear Creek, 69°42'N, 129°W, 24 August 1959, *T.D. Barry 457*, CAN-287853), on the north slope of Alaska (specimens at ALA; Porsild and Cody 1980) and in northern Labrador (Dignard, 2013c).

This distinctive horsetail species is rare in the study area. We encountered two small populations. One was found along the edge of a small sheltered pond in Kugluk (Bloody Falls) Territorial Park with *Utricularia vulgaris*, and the other along the edge of a small body of water with *Carex aquatilis* subsp. *stans* at the edge of a sand bar in the floodplain of the Coppermine River just south of Kugluktuk. Both of these sites are within the Arctic ecozone, and are the northernmost sites for the taxon in Nunavut.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3878* (CAN, UBC); flats below large overhanging cliffs above Coppermine River, just S of Kugluktuk, 67°48'56.7"N, 115°6'22.6"W ± 10 m, 2 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4409* (ALA, CAN).

Equisetum palustre L., Fig. 13D—Marsh horsetail | Circumboreal | Noteworthy Record

This species was not recorded for Nunavut by Porsild & Cody (1980), Cody & Britton (1989) or Hauke (1993) but more recently has been reported from southeastern mainland Nunavut (Reading s.n. in 1981 and 1982, DAO!, Cody et al., 2003), west of the Coppermine River outside the study area (*Reading 8*, *9, 47,* DAO), Bathurst Inlet (*Reading 204*, DAO) and just above the treeline west of Arviat (*Reading 121*, DAO) (Cody & Reading, 2005). We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park, which are the first ones for the study area and represent a minor northeastern range extension with respect to Reading's collections from just west of the study area. The nearest records to the Coppermine River ones are from the Great Bear Lake area (Porsild, 1943; Porsild & Cody, 1980). It is common in the study area,

where it grows in mesic to wet areas. *Equisetum palustre* forms extensive, bright green stands in mesic tundra along the north side of the Portage Trail in Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species was found to be common in the Tuktut Nogait National Park and vicinity in eastern Northwest Territories (Saarela et al., 2013a), and is also recorded from northern Labrador (Dignard, 2013c).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3244* (CAN); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3253* (CAN, UBC); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N, 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3741* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3904* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'13.2"N, 115°22'6.3"W ± 3 m, 21 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4143* (CAN, O).

Equisetum scirpoides Michx.—Dwarf scouring rush | Circumboreal–polar | Noteworthy Record

Our collections, from Fockler Creek, Kendall River and Kugluk (Bloody Falls) Territorial Park, are the first ones for the study area and extend the range of the species north in this portion of its range. It has not been recorded north of the territorial park in the study area. It was recently

recorded from the Big Bend Area of the Coppermine River to the south of the study area (Reading 28, 39-3 - DAO; Cody et al., 2003). The nearest mainland collection to the east is from the Bathurst Inlet region (Cody and Britton 1989). To the west it reaches the Arctic on mainland Northwest Territories, Yukon and Alaska (Cody et al., 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Elsewhere on mainland Nunavut there are at least five records of this species (Cody & Britton, 1989; Cody et al., 1984; Cody et al., 1989; Porsild & Cody, 1980), while the range map in Hauke (1993) covers nearly all of mainland Nunavut. This species is probably more common across mainland Nunavut than existing collections suggest, and likely is not often collected given its diminutive status. In the Canadian Arctic Archipelago it has been recorded from southern Baffin Island, Banks, Coats, King William, Southampton and Victoria islands (Aiken et al., 2007; L.J. Gillespie and J.M. Saarela, unpubl. data), and is also recorded in Arctic Quebec (Dignard, 2013c).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3226* (CAN); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3320* (CAN, UBC); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3350* (ALA, CAN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3582* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that

runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4033* (CAN).

Equisetum variegatum Schleich. subsp. ***variegatum*—**Variegated scouring rush, Variegated horsetail | Circumpolar-alpine

This species has been previously recorded from the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen. It was recently recorded from the Big Bend Area of the Coppermine River to the south of the study area (Reading 29, DAO, Cody et al., 2003). We made collections in the vicinity of Fockler Creek, Bigtree River and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Dignard, 2013c; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3151* (CAN, UBC); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3256* (CAN); small unnamed tributary of Sleigh Creek, just upstream from its confluence with Sleigh Creek, 67°26'43.9"N, 115°36'57"W ± 5 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3464* (ALA, CAN); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3602* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3976* (ALTA, CAN).

Ophioglossaceae [1/3]

Botrychium Sw.

The wide-ranging taxon *Botrychium lunaria* has recently been segregated into multiple taxa based on genetic and morphological data. In the complex, two new species have been described (*B. tunux* M. Stensvold & D. Farrar; *B. yaaxudakeit* M. Stensvold & D. Farrar) and three new taxa are recognized but not yet formally described (*B. lunaria* var. "melzeri", *B*. "neolunaria" and *B*. "nordicum") (Stensvold & Farrar, 2008; Stensvold et al., 2002). Dauphin et al. (2014) sampled multiple accessions of the wide-ranging *B. lunaria* complex for three plastid regions, and demonstrated that these data support the recognition of the above-named taxa. They found *B. minganense* to be a subclade that is part of a broader lineage referred to as the Simplex-Campestre clade, with 14 species, and the Simplex-Campestre clade and the Lunaria clade, comprising the *B. lunaria* complex, are sister taxa (Dauphin et al., 2014). They suggested that the *psbA-trnH* intergenic spacer region is the most useful of the plastid regions they studied to serve as a DNA barcode for the *B. lunaria* complex.

Because we had difficulties identifying our *Botrychium* collections based on morphology alone, we collected DNA barcode data for our samples to aid in identification. We amplified and sequenced *psbA-trnH* and *rbcL* for three individuals from our two new collections, here divided into four separate numbers on the basis of morphological variation (3755a, 3755b, 4179a, 4179b), and for the two collections (*Gillespie et al. 9209*, *9281*) from adjacent Northwest Territories that we previously identified as *B. lunaria* (Saarela et al., 2013a). GenBank accession numbers for our new sequences are KT906414–KT906423. We sequenced *psbA-trnH* in order to compare sequences of our collections to those for the *B. lunaria* complex and *B. minganense* generated by Dauphin et al. (2014) (GenBank accession numbers of the sequences are prefixed

by "KF") and one other available sequence (AB575330: Ebihara et al., 2010). Dauphin et al. (2014) did not obtain *psbA-trnH* for the eight other species in their Simplex-Campestre clade. We sequenced *rbcL*, one of the two core barcode loci for vascular plants, in order to compare our samples with existing *rbcL* sequences for *Botrychium lunaria* (here referred to as *B. lunaria* s.l., recognizing that the recent taxonomic changes were not taken into account in the earlier works), *B. minganense* and related taxa (AB574664: Ebihara et al., 2010; L40968-L40972, L40981: Hauk, 1995; DQ849133, DQ849172, DQ849169, DQ849146: Hauk et al., 2012; JN965301-JN965304: Kuzmina et al., 2012; KC482120-KC482: Saarela et al., 2013b; AB626656: Shinohara et al., 2013). For each region we designated *B. boreale* J. Millde an an outgroup taxon, following recent phylogenies (Dauphin et al., 2014; Hauk et al., 2012). DNA was extracted from silica-gel dried leaf material using a silica-based column method (Alexander et al. 2007) similar to commercially available DNA extraction kits. The plastid spacer *psbA-trnH* was amplified using primers psbAF (Sang et al., 1997) and trnH2 (Tate & Simpson, 2003). The *rbcLa* region was amplified using primers rbcLa-F (primer P1630 in Levin et al., 2003) and rbcLa-R (primer SI_Rev in Kress et al., 2009). Amplification of both regions was performed in a 15 µL volume with a final concentration of 1x HF Phusion buffer, 1.5 mmol/L $MgCl_2$, 0.2 mmol/L dNTP, 0.5 µmol/L of each primer, 0.3 units of Phusion polymerase, and 1.5 µL of extracted DNA. The following cycling conditions were used: 30s at 98 °C, followed by 34 cycles of 98 °C for 10 s, 60 °C (*psbA-trnH*) or 55 °C (*rbcL*) for 30 s, and 72 °C for 30 s, followed by a final extension step at 72 °C for 5 min. Amplification products were purified using the enzymes Exonuclease I and shrimp alkaline phosphatase. Big Dye version 3.1 (Life Technologies Corporation, Carlsbad, Calif.) was used for sequencing reactions using 0.4 µL of Big Dye in a 10 µL reaction. Sequencing reaction products were purified via ethanol – EDTA – sodium acetate precipitation.

Nucleotide sequences were generated using automated cycle-sequencing on an Applied Biosystems 3130xl automated sequencer. Using Geneious 8.0.4 we aligned our new sequences with the sequences obtained from GenBank and, for each alignment, we constructed neighbour joining trees under a Jukes-Cantor substitution model. Results are described in the species accounts below.

Botrychium minganense Vict., Fig. 14—Mingan moonwort | Circumboreal | Noteworthy Record

Botrychium minganense is a widespread allotetraploid taxon; it has been variously recognized as a distinct species (Cody & Britton, 1989; Victorin, 1927; Wagner & Wagner, 1993) or treated as *B. lunaria* var. *minganense* (Vict.) Dole (Porsild, 1951; Porsild, 1966; Porsild, 1975; Porsild & Cody, 1980). Species recognition is supported by morphological and genetic data (Dauphin et al., 2014; Stensvold, 2007; Wagner Jr & Lord, 1956). Distinguishing morphological characters are summarized in the key given below. In the neighbour-joining analyses, the genetic data place one of our collections (4179a) in a cluster with *B. minganense* and related taxa, although our sequences are not identical to others identified as *B. minganenese*. The *psbA-trnH* sequence is part of a cluster with the *B. minganense* accessions, which are all Alaskan plants (Dauphin et al., 2014) (Fig. 15). Our *psbA-trnH* sequence differs from the others of *B. minganense* by four one-bp substitutions. Further sampling is needed to determine the geographic distribution of the Coppermine River *psbA-trnH* haplotype. The *rbcL* sequence of this sample is part of a cluster comprising *B. gallicomontanum* Farrar & Johnson-Groh, *B. minganense*, *B. pallidum* W.H. Wagner, *B. mormo* W.H. Wagner, *B. paradoxum*, and *B. watertonense*. Our sequence is identical to those of *B. pallidum* (scattered distribution in central North America), *B. mormo* (endemic to Michigan, Minnesota and Wisconsin) and *B. gallicomontanum* (endemic to Minnesota) (Wagner & Wagner, 1993), which other studies have found to be closely related to *B. minganense*

(Dauphin et al., 2014; Hauk et al., 2012). It differs from the four published sequences of *B. minganense* and those of *B. paradoxum* and *B. watertonense* by two one-bp indels and one substitution. These six published sequences were obtained in 1995 or before using early sequencing technology (autoradiography) (Hauk, 1995); sequences for these taxa should be obtained using contemporary methods to ensure the variation in the earlier sequences is not artefactual. The plants of collection 4179a correspond morphologically to *B. minganense* and, given their placement in the genetic trees, we place them under this species. Our collection is the first record of the species for the study area. The plants grew in moist (seasonally wet) sand with *B. tunux* (*Saarela et al. 4179b*), *Castilleja caudata*, *Juncus arcticus* subsp. *alaskanus*, *Parnassia kotzebuei*, *Pinguicula vulgaris*, *Lupinus arcticus* and *Salix alaxensis* var. *alaxensis*.

Cody et al. (2003) reported three *Botrychium lunaria* collections gathered in 1999 from the Big Bend area of the Coppermine River, south of the study area (*Reading 21*, DAO-784829 barcode 01-01000677959; *Reading 37-1,* DAO-7848333 barcode 01-01000677496; *Reading s.n.*, DAO-731189 barcode 01-01000677960). These specimens were redetermined to *B. minganense* by L. Gillespie in 2012 (Saarela et al., 2013a) (we agree with her determinations), and constitute the first confirmed records of the species for mainland Nunavut. No genetic data from these collections have been obtained. An unpublished collection from north of Dismal Lakes and west of the Coppermine River (*Reading 64*, DAO) is a mixed collection, comprising plants of *B. minganense* and *B. tunux*. The presence of *B. minganense* in the Coppermine River valley and vicinity is well beyond the range of the species given in Wagner & Wagner (1993), which in the North included southern Yukon and a small portion of southwestern Northwest Territories. Bennett et al. (2010 [2011]) reported the species to be widespread in Yukon. Elsewhere in Nunavut the species is recorded from Akimiski Island (Blaney & Kotanen, 2001). No

Botrychium taxa are recorded for the Canadian Arctic Archipelago (Aiken et al., 2007), and there is single Arctic record from northern Quebec (Dignard, 2013e).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: shallow gully in sand hills above Bloody Falls, SE side of Coppermine River on SW-facing slopes, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4179a* (CAN).

***Botrychium* "neolunaria"** Stensvold & Farrar ined.—Moonwort | Noteworthy Record

Some North American plants previously treated as *B. lunaria* are now recognized as a separate species on the basis of genetic and morphological data (Stensvold, 2007). This undescribed taxon was referred to as *B.* "neolunaria" ined. by Stensvold (2007). Although the species name is not validly published, it is in use in the literature (Dauphin et al., 2014; Nawrocki et al., 2013). Diagnostic characters are listed by Farrar (2011), who noted that the taxon cannot be reliably distinguished morphologically from *B. lunaria* var. *lunaria*, but that their ranges overlap in North America only in high mountain habitats in Alaska and Yukon, and in eastern Canada. Dauphin et al. (2014) noted them to be "distinguishable only by subtle traits" but did not list the traits, nor did they include sequence individuals of *B. lunaria* s.s. from Canada. It is unclear if *B.* "neolunaria" and *B. lunaria* s.s are genetically distinct in Canada, and their distributions are not known with precision. Nevertheless, *B.* "neolunaria" and *B. lunaria* var. *lunaria* from multiple non-Canadian jurisdictions were shown to be distinct genetically in the plastid phylogenetic study by Dauphin et al. (2014); they also identified multiple geographically-grouped clusters of individuals of *B. lunaria* var. *lunaria*. A *psbA-trnH* sequence of one of our collections (*Saarela et al. 3755b*) is identical to those of plants identified as *B.* "neolunaria" from Alaska and Washington in Dauphin et al. (2014) (Fig. 15). Four of our *rbcL* sequences are part of the Lunaria cluster, but there is

insufficient variation in *rbcL* for the region to be useful in species identification within this lineage. Two of our new *rbcL* sequences (*Gillespie 9209*, *9281*) are identical to all published *rbcL* sequences of *B. lunaria* s.l., and one of our samples (*Saarela 4179b*) differs from these sequences by one substitution (Fig. 15). We identify these three samples as *B. tunux* (see below). The sample (*Saarela 3755b*) that clusters with B. "neolunaria" in the *psbA-trnH* tree is similarly identical to all but one of the other accessions of the *B. lunaria* complex. The samples of *B. lunaria* s.l. in the tree likely correspond to *B.* "neolunaria", *B. tunux*, and possibly *B. lunaria* s.s., but clarification of this awaits careful study of the voucher specimens.

Re-examination of collection 3755b with the molecular placements in mind confirms its identity as a member of the *B. lunaria* complex, and given its placement in the *psbA-trnH* tree we identify the collection as B. "neolunaria". This is first confirmed record of *B.* "neolunaria" for Nunavut. This single plant was growing among a population of *B. tunux* (*3755a*, see below), of which numerous individuals were gathered. We did not consider there to be two taxa growing together when sampling the site, and although we collected only one individual of *B.* "neolunaria", it is possible there were more present. Morphological characters that differentiate these species are given in the key below, with the caveat that the characters for B. "neolunaria" may also correspond to *B. lunaria* s.s. in Canada. These moonworts grew on a densely vegetated sik-sik den (a disturbed habitat), with *Arnica angustifolia*, *Carex podocarpa*, *Dasiphora fruticosa*, *Elymus alaskanus*, *Oxyria digyna*, *Poa alpina*, *Salix reticulata*, *Stellaria longipes*, *Symphyotrichum pygmaeum* and *Trisetum spicatum*. A collection from the Big Bend area of the Coppermine River (*Reading 1*, DAO-784461 barcode 01-01000677497), south of the study area, is also re-determined to *B.* "neolunaria". According to the revised taxonomy of *B. lunaria* s.l., many other collections of the complex from North America are likely referable to *B.* "neolunaria". No *Botrychium* taxa are

recorded for the Canadian Arctic Archipelago (Aiken et al., 2007). Several Arctic collections of *B. lunaria* are reported for northern Quebec and Labrador (Dignard, 2013e). Two collections of *B. lunaria* have been recorded from the forest tundra in southeastern mainland Nunavut (Cody, 1996a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3755b* (CAN).

Botrychium tunux Stensvold & Farrar, Fig. 16—Tunux moonwort | Noteworthy Record

This species was segregated from *B. lunaria* s.l. on the basis of genetic and morphological evidence, and was described from the Yakatut area of Alaska (Stensvold et al., 2002), at the time the only known area for the species. It has since been recorded from Yukon (Stensvold & Farrar, 2008), British Columbia (Anonymous, 2015b), Montana (Mincemoyer, 2013), Idaho, Colorado (Snow, 2009), New Mexico (Legler, 2010), Nevada and California (Rundel, 2011) (Farrar, 2011). In a phylogenetic study based on plastid sequences, Dauphin et al. (2014) found that individuals of *B. tunux* formed a distinct subclade within a broader Lunaria clade. The three individuals they sampled were from Yukon, Colorado and Alaska. In the *psbA-trnH* tree, our collections from Northwest Territories (*Gillespie et al. 9281*, *9209*) and one of our Coppermine collections (*Saarela et al. 4179b*) grouped with these three *B. tunux* accessions (Fig. 16). There is insufficient variation in *rbcL* for the region to be useful in species identification within the Lunaria lineage, as summarized under B. "neolunaria". Morphological characteristics distinguishing *B. tunux* from *B. minganense* and *B.* "neolunaria" are given in the key below, with the caveat that the characters for B. "neolunaria" may also correspond to *B. lunaria* s.s. in

Canada. Re-examination of our Coppermine and Northwest Territory plants with the *psba-trnH* molecular placements in mind confirmed their identification as *B. tunux*. The diagnostic characters for *B. tunux* are evident in the image of the collection *Gillespie et al. 9281* in Saarela et al. (2013a: 34).

In the study area we gathered the species at two sites. Atop the Coppermine Mountains the species grew with *B.* "neolunaria" (see comments under that species), and on a slope on the east side of Bloody Falls it grew with *B. minganese* (see comments under that species). Based on a photo taken by J.K. Hebden in 1980, Cody (1996a) reported *B. lunaria* from Bloody Falls, along the Portage Trail [then on the east side of the river] at Bloody Falls (DAO). Based on the image, we identify the species as *B. tunux*. The old Portage Trail is close to the site of our collection of *B. tunux*, and it is possible the 1980 photo was taken in the same general area as our 2014 collection was made. An unpublished collection record from north of Dismal Lakes and west of the Coppermine River (*Reading 64*, DAO), outside the study area, is a mixed collection, comprising plants of *B. minganense* and *B. tunux*. These earlier collections and our new ones represent the first reports of *B. tunux* for Northwest Territories and Nunavut, substantially extending the range of the species from the nearest known localities in southwestern Yukon. Clarification of the full northern distribution of *B. tunux* awaits revision of herbarium material determined as *B. lunaria*. No *Botrychium* taxa are recorded for the Canadian Arctic Archipelago (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, Coppermine River, along Portage Trail, 67°44'N, 115°23'W, 2 August 1980, *H.J. Hebden s.n.* [photo] (DAO-664033 barcode 01-01000677961); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*,

Sokoloff & Bull 3755a (CAN); shallow gully in sand hills above Bloody Falls, SE side of Coppermine River on SW-facing slopes, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4179b* (CAN).

Key to *Botrychium* species in the Coppermine River Valley, adapted from Stensvold et al. (2002) and Farrar (2011):

1. Basal pinnae narrowly fan-shaped, usually spanning an arc less than 120°; pinnae overlapping…***B. minganense***

1’ Basal pinnae broadly fan-shaped, usually spanning an arc of 150-180°; pinnae overlapping…2

2. Pinnae asymmetrical with the basal ones larger; sporophore stalk at spore release shorter than or equal to the length of the trophophore; plants 6–12 cm tall….***B. tunux***

2‘ Pinnae symmetrical, sporophore stalk at spore release longer than trophophore; plants 8–25 cm tall…***B.* “neolunaria”**

Pteridaceae [1/1]

Cryptogramma stelleri (S.G. Gmel.) Prantl., Fig. 17A—Steller’s rockbrake | European (NE)–Asian (N/C)–amphi-Beringian–Cordilleran & North American (NE) | Noteworthy Record

Our collection from Kugluk (Bloody Falls) Territorial Park is the first record for the study area and mainland Nunavut, and the second record for Nunavut. This species was first reported for Nunavut by Gillespie et al. (2015), based on a collection from Kimmirut on southern Baffin Island. We found one small patch of the rare species growing in a crack on a south-facing cliff just west of the start of Bloody Falls rapids. This represents a northeastern range extension of

some 530 km from the nearest known locality from the Richardson Mountains west of Great Bear Lake (Cody & Britton, 1989; Cody & Porsild, 1968; Porsild & Cody, 1980). Further details on the scattered distribution of this species are given in Gillespie et al. (2015).

SPECIMEN EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4076* (CAN).

Woodsiaceae [1/3]

Woodsia alpina (Bolton) S.F. Gray—Alpine woodsia, alpine cliff brake | Circumpolar–alpine

This species was previously collected in Kugluktuk, on "dry ledges". The collecting site was probably North Hill, as this is the only area near the community characterized by distinctive dry ledges. We also made a collection there, where we found the species growing in cracks on northwest-facing rocky ledges. The earlier collection from Kugluktuk was mapped in Porsild & Cody (1980) but not in Cody & Britton (1989). Our second collection, from Bloody Falls (but outside Kugluk (Bloody Falls) Territorial Park), is a single plant that is mostly glabrous. This character state is more typical of the closely-related species *W. glabella*, but the collection is placed here on the basis of having a few lanceolate scales along the mid-point of the rachis of one of the fronds. *Woodsia glabella* sometimes has a few scales proximally on the rachis, but not at mid-point. In the Canadian Arctic Archipelago this species is recorded from southern Baffin Island, Coats, Ellesmere, Nottingham and Southampton islands (Aiken et al., 2007), and it has a scattered distribution across the mainland Arctic (Cody, 1996a; Cody et al., 2003; Dignard, 2013g; Korol, 1992; Porsild & Cody, 1980). The dot map in Porsild & Cody (1980) appears to

be the basis for the shaded range map in Alverson (1993), which covers most of mainland Nunavut.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17158* (CAN-127419); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3067* (CAN, UBC); S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4204* (CAN).

Woodsia glabella R. Br., Fig. 17B—Smooth cliff fern, Smooth cliff brake | Circumpolar–alpine

This species was previously recorded from Kugluktuk (Porsild & Cody, 1980), although this earlier record was not mapped in Cody & Britton (1989). This is a common species of rocky slopes and cliffs along the Coppermine River valley. We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody et al., 2003; Dignard, 2013g; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17159* (CAN-127423); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3319* (CAN); esker on E side of Coppermine River, 0.6 km SSE of Muskox Rapids, 67°22'40"N, 115°42'38.5"W ± 50 m, 172 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3664* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N,

115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3773* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3891* (CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4082* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4158* (CAN, UBC).

Woodsia ilvensis (L.) R. Br.—Rusty woodsia | Circumboreal-polar

This species was mapped for the study area in Porsild and Cody (1980) but not in Cody & Britton (1989). There is a single collection from Kugluktuk, but a precise location for the collection is not recorded on the specimen label. We did not collect this species in 2014. Elsewhere in the Canadian Arctic this species is recorded from southern Baffin Island and Nottingham Island, a few other sites on mainland Nunavut, and northern Quebec and Labrador (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 2003; Cody et al., 1984; Dignard, 2013g; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Coppermine [Kugluktuk], [67.826667°N, 115.09333°W ± 1.5 km], 05 July 1958, *R.D. Wood s.n.* (CAN-265609).

Gymnosperms

Cupressaceae [1/1]

Juniperus communis subsp. ***depressa*** (Pursh) Franco, Fig. 18A, B—Common juniper | North American (N) | Noteworthy Record

Our collections of this taxon, from Fockler Creek, Melville Creek, Big Creek, Coppermine Mountains and Kugluk (Bloody Falls) Territorial Park, are the first ones for the study area. It was previously reported from the Big Bend area of the Coppermine River south of the study area (Reading 32, DAO; Cody et al., 2003) and from a site ca. 15 km east of the confluence of the Kendall and Coppermine rivers (*Reading 83*, DAO; Cody and Reading 2005), just outside the study area. Our collections represent a minor northern range extension with respect to Reading's collections. This prostrate shrub species is common along the banks of the Coppermine River, where it is often found with white spruce, and in Kugluk (Bloody Falls) Territorial Park, where we recorded it growing along the bottom and lower wet edges of a creek valley. It may occur further north along the Coppermine River, but was not found in the vicinity of Kugluktuk. It has been recorded from north of the treeline at a few sites in Northwest Territories: Tuktut Nogait National Park and vicinity (Saarela et al., 2013a) and the southeastern portion of the Thelon Game Sanctuary (several collections at CAN). All of these Arctic collections are outside the range limit for the taxon given in recent distribution maps (Adams, 1993; Adams, 2008; Farjon & Filer, 2013). It is also known from southeastern mainland Nunavut (Porsild, 1950b; Porsild & Cody, 1980). It is not recorded from the Canadian Arctic Archipelago. Subspecies *depressa* is the common, widespread North American subspecies (Elven et al. 2011). Arctic populations of *J. communis* from southern Greenland were shown to have colonized that island via long-distance

dispersal from Europe, while populations of the species from across northern Canada were genetically similar (Alsos et al., 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3141* (CAN, QFA, US, WIN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3526* (CAN, MO, MT); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3568* (CAN, UBC); S-facing slopes above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 50 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3642* (ALA, CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3782* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, gentle stream in shallow valley running into Coppermine River just W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 20 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4015* (CAN, O).

Pinaceae [1/1]

Picea glauca (Moench) Voss, Fig. 18C, D—White spruce | North American (N)

The northern spruce groves along the lower Coppermine River have been of interest since first seen by western explorers. They were noted in various accounts of the earliest expeditions in the area by such explorers as Hearne (1795), Franklin (1823) and Richardson (1851). The first

collection of white spruce from the study area was taken from Sandstone Rapids (Macoun & Holm, 1921), as *Picea canadensis* (Mill.) B.S.P., in February 1915 as part of the Canadian Arctic Expedition 1913-1918. There is a handwritten note on a copy of the report in the reprint library at CAN that the collection number is 720. We were unable to find any relevant specimens at CAN. Spruce development at Escape Rapids and Sandstone Rapid is described by Johansen (1919). He also commented on spruce trees along the Napaaktoktok River, about 10 km east of the study area, based on information presented to him by R.M. Anderson: spruce trees "in the small, more unprotected Naparkoktuak [Napaaktoktok] River (its name is Eskimo [sic] for spruce), is very stunted (below six feet) and scattered, only a little grove of trees being found here and there; but the trees reach to within a dozen miles of the Arctic coast" (Johansen, 1919: 304) (also see Anderson, 1917). Further details on spruce in the area are given by (Holm, 1922: 85B). Stefansson (1912) noted "the most northerly sprigs of growing spruce are a mile and a half north of Bloody Fall, or less than six miles from the sea in an airline". We are not aware of any other reports of spruce growing this far north along the Coppermine River. Spruce stands at Escape Rapids and further south are described by Johansen (1924: page 49c); also see Johansen (1919). We made collections at Fockler Creek, Melville Creek, Escape Rapids and Kugluk (Bloody Falls) Territorial Park, where we found one spruce tree growing in a dense willow thicket on the west side of the Coppermine River near the northern park boundary. In the spruce forest at Fockler Creek, many trees had been cut several feet from their base, in winter. Few authoritative distribution maps of white spruce record the species along the lower Coppermine River (Farrar, 1995; Ritchie, 1987). Elsewhere on mainland Arctic Nunavut the species is recorded from just north of the Manitoba border along Hudson Bay (Porsild & Cody, 1980). In northern Quebec white spruce barely extends into the Arctic ecozone along the Hudson Bay

coast near Umiujaq and there are two records for northern Labrador (Caccianiga & Payette, 2006; Dignard, 2013f). It is not recorded from the Canadian Arctic Archipelago (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, S-facing slope on N side of small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 5 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3458* (ALA, CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3520* (CAN); S-facing slopes above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 50 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3639* (CAN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3730* (CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, just above Bloody Falls, 67°44'22.6"N, 115°22'52"W ± 20 m, 40 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4105* (CAN).

Monocots

Amaryllidaceae [1/1]

Allium schoenoprasum L. "northern race", Fig. 19—Wild chives | European (N)–Asian (N)–amphi-Beringian–North American (N) | Noteworthy Record

Wild chives is a wide ranging, morphologically variable circumpolar taxon, and the only one of the approximately 800 known onion species that definitely reaches the Arctic (one other species,

A. strictum Schrad., reaches the borderline Arctic in Siberia) (Elven et al., 2011). Our collections represent a considerable range extension. The nearest records to the southwest are from southwestern Great Bear Lake, and to the south from just north of Great Slave Lake (Porsild & Cody, 1980). McNeal & Jacobsen (2002) recorded the species for Nunavut, but the source of this report is unclear to us. There are no collections mapped in Porsild and Cody (1980) or reported, to our knowledge, in the literature, nor is it recorded for Nunavut in Brouillet et al. (2010+). Pending confirmation of the report in McNeal & Jacobsen (2002) we consider our collections to be the first confirmed records for Nunavut. This is the only species of the family Amaryllidaceae for the territory. Elsewhere in the Canadian Arctic it is known from Yukon on Herschel Island (*Kennedy s.n.*, Environmental Yukon Herbarium, photo DAO) and the adjacent mainland along the Firth River (Cody et al. 2004) and in Ivvavik National Park (Sheep Creek drainage, 69.135°N, 140.15°W, 270 m, *Bennett et al. 08-175*, CAN-590221), and Northwest Territories (Anderson River Delta, 69°42'N, 129°W, *Barry 156*, CAN-287908). To the southwest, the nearest collections are from Great Bear River area (Mount Charles, 65°04'N, 124°37'W, 16 June 1928, *Porsild & Porsild 3309*, CAN-13382; junction with Big Stick River, 64°57'N, 123°48'W, 15–16 June 1928, *Porsild & Porsild 3253*, CAN-13381).

We made three collections. The largest population encountered was in Kugluk (Bloody Falls) Territorial Park, growing on the upper ledges of the cliffs above the start of Bloody Falls rapids with *Anthoxanthum monticola*, *Arnica angustifolia*, *Calamagrostis purpurascens*, *Dryopteris fragrans*, *Poa glauca* and *Saxifraga tricuspidata*. This population is just steps away from the adjacent Portage Trail and it is surprising that this conspicuous species has not previously been collected at the site. Another collection was gathered in a very different Arctic habitat: grassy sandy flats on an extensive sandy floodplain of the Coppermine River near

Kugluktuk, growing with *Astragalus alpinus*, *Bromus pumpellianus*, *Castilleja caudata*, *Eurybia sibirica*, *Parnassia palustris*, *Salix niphoclada*, *Salix alaxensis* and *Symphyotrichum pygmaeum*. The third collection was made in a Subarctic spruce forest community.

The taxonomy of the species is controversial. Several authors in North America have referred native plants (wild chives) of the species to *A. schoenoprasum* subsp. *sibiricum* (L.) Hartm. (Cody, 2000; Hultén, 1968; Kwiatkowski, 1999; Porsild & Cody, 1980; Reznicek et al., 2011), and sometimes distinguishing them from introduced plants (garden chives) treated as subsp. *schoenoprasum* (e.g., Reznicek et al., 2011). However, the name "*sibiricum*" and its application are problematic. As noted by Friesen (1996) and Elven et al. (2011), Linnaeus (1771) described *A. sibiricum* as a white-flowered species different from the taxon that Hartmann (1843) and subsequent workers have referred to as subsp. *sibiricum*, with pink to purple flowers. They concluded it is incorrect to apply the name in the misapplied sense of Hartmann. Elven et al. (2011) recognized the distinctiveness of Arctic-Subarctic plants of *A. schoenoprasum* s.l. (as "northern race") on the basis of morphological and ecological characters, stated that these northern plants require a valid name if recognized, and did not consider *A. sibiricum* and other combinations as synonyms of *A. schoenoprasum*.

Other authors in North America and elsewhere do not recognize infraspecific taxa in *A. schoenoprasum* and include *A. sibiricum* and its homotypic synonyms in its synonymy (Choi & Cota-Sánchez, 2010; Czerepanov, 2007; Haines et al., 2011; McNeal & Jacobsen, 2002). Friesen (1996), in his global revision of *Allium* sect. *Schoenoprasum* Dumort., treated *A. sibiricum* as a synonym of *A. schoenoprasum* subsp. *schoenoprasum*, one of three subspecies he recognized and the only one recognized in North America. Friesen (1996) noted four informal morphotypes in this taxon, one of which ("Type C") has usually been referred to as *A. sibiricum*. It is not clear

if Friesen's Type C corresponds to the "northern race" of Elven et al. (2011). If so, it is possible one of the valid names listed under his Type C may apply to the Arctic-Subarctic race. Whatever the correct name, our plants correspond to Elven et al.'s (2011) northern race in their leaf blades (within the 2–6 mm wide range and extending up the stem, at least in *Saarela et al. 3935*) but tepal length (7–10 mm) falls within the range reported for *A. schoenoprasum* s.s., not the northern race (ca. 15 mm); capsules are not available on our material to evaluate variation in that character as noted by Elven et al. (2011).

The Linnaean Plant Name Typification Project website indicates "type not designated" for *A. sibiricum* and lists Herb. Linn. No. 419.38, a white-flowered individual, as possible original material. Choi & Cota-Sánchez (2010) noted LINN 419.38a to be the lectotype of *A. sibiricum*; however, they did not indicate who designated this lectotype, nor does their statement meet the requirements of Article 7.10 for designating a lectotype (i.e. "designated here" not specified).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3560* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3935* (ALA, CAN, UBC); grassy sandy flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4416* (CAN).

Cyperaceae [4/47]

Carex adelostoma V.I. Krecz.—Circumpolar sedge | Circumboreal-polar? | Noteworthy Record

Our two collections of this rhizomatous sedge are the first for the study area and represent a northern range extension for the species, and are apparently the first collections of the species from Nunavut in 84 years. Near Fockler Creek, the species was locally very common in a large sedge wetland growing with *Carex microglochin* and *Eriophorum angustifolium*. At a site just north of the southern limit of the Arctic ecozone, the species was common in a wet area with *Betula glandulosa*, *Saussurea angustifolia* and *Salix* spp. Elsewhere in Nunavut it is known only from Yathkyed Lake on the Kazan River, where Porsild collected it in 1930 (Porsild, 1943; Porsild & Cody, 1980). In Northwest Territories this species is known from several collections from northern and eastern Great Bear Lake (Porsild 1943). In Alaska it is known from four to five localities in the Tanana- Kuskokwim Lowlands, Copper River Basin and Wrangell Mountains (Cook & Roland, 2002) where it is also considered a rare plant (Nawrocki et al. 2013). Porsild and Cody (1980) recognized this fen taxon as *C. morrisseyi* Porsild (Porsild, 1943), a name treated as a synonym of *C. adelostoma* by Murray (2002b) and as a tentative synonym by Elven et al. (2011). This sedge was considered a rare taxon in Northwest Territories (Cody 1979), Quebec (Bouchard et al. 1983) and Canada (Argus and Pryer 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats N of Fockler Creek, between Fockler Creek and Sleigh Creek, ca. 0.6 km SE of Sandstone Rapids, Coppermine River, 67°26'26"N, 115°37'40.7"W ± 3 m, 125 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3486* (ALTA, CAN, MO, MT, O); wet area on flats above W bank of Coppermine River, ca. 7.9 km

NNE of Sandstone Rapids, 67°31'18.3"N, 115°36'48.9"W ± 5 m, 117 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3654* (ALA, CAN, NY, UBC).

Carex aquatilis subsp. ***stans*** (Drejer) Hultén, Fig. 20A, B—Aquatic sedge | Circumpolar-alpine

This species was previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980), as *C. aquatilis* Wahlenb. We made collections at Fockler Creek, Melville Creek, Kendall River, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The taxonomy of the *C. aquatilis* complex in the Arctic is reviewed in Saarela et al. (2013a); subsp. *stans* is the Arctic race of the species. It is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 74* (MT00183522); sedge meadow at S end of small lake, on flats NW of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'1.8"N, 115°37'30.5"W ± 20 m, 170 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3236* (CAN, K, QFA, US, WIN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3496* (CAN, UBC); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), small ponds on flats adjacent to Coppermine River, 67°6'44.7"N, 116°8'6.1"W ± 100 m, 213 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3585* (ALTA, CAN, O); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3900* (CAN, MO, MT); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation

Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4368* (ALA, CAN).

Carex atrofusca Schkuhr—Dark brown sedge | Circumpolar–alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. It is widespread throughout the Canadian Arctic (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67.826667°N, 115.09333°W ± 1.5 km], 26 July 1949, *A.E. Porsild 17161* (CAN-127536); Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 02 July 1958, *R.D. Wood s.n.* (CAN-265601); sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3223* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3495* (CAN); Kugluk (Bloody Falls) Territorial Park, small rocky meadow along small stream that runs into Coppermine River just below Bloody Falls, about 1 km W of Bloody Falls, 67°44'40.1"N, 115°23'37.5"W ± 15 m, 48 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4027* (ALA, CAN, WIN); NW-facing moist to wet sedge meadow, drainage running into Coppermine River above Bloody Falls on SE side, 67°44'26.2"N, 115°22'11.8"W ± 15 m, 47 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4192* (ALTA, CAN, MO, O).

Carex bicolor Bellardi ex All., Fig. 20B, D —Bicoloured sedge | Circumpolar–alpine | Noteworthy Record

This densely cespitose sedge species is newly recorded for the study area. We made collections in the vicinity of Fockler Creek, Heart Lake, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. These collections close a gap between the nearest sites at Bathurst Inlet, Hood River, northeastern Great Bear Lake and Tuktut Nogait National Park and vicinity (Bennett, 2015; Gould & Walker, 1997; Porsild, 1943; Porsild & Cody, 1980; Saarela et al., 2013a). Elsewhere in the Canadian Arctic it is recorded from southern Baffin Island, Coats, Nottingham and Victoria islands, a few other sites on mainland Nunavut, and Tuktut Nogait National Park and vicinity (Aiken et al., 2007; Cody et al., 1989; Gillespie et al., 2015; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3263* (CAN, MO, MT); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3277* (CAN, UBC, US); small unnamed lake N of Fockler Creek, between Fockler and Sleigh Creek, ca. 1.4 SSE of Sandstone Rapids, Coppermine River, 67°26'13.4"N, 115°37'48"W ± 5 m, 165 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3487* (ALA, CAN, UBC, US, WIN); E end of small, unnamed lake on W bank of Coppermine River, ca. 8.3 km NNE of Sandstone Rapids, 67°31'30.8"N, 115°36'16.1"W ± 50 m, 126 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3661* (ALA, CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*,

Sokoloff & Bull 3726 (CAN, K, NY, QFA, UBC, WIN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N, 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3742* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3857* (CAN, QFA, WIN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3978* (CAN, K, NY); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4273* (CAN, O); grassy sandy flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4417* (ALTA, CAN, MO, MT, O).

Carex bigelowii Torr. ex Schwein. subsp. ***bigelowii***—Bigelow's sedge | North American–amphi-Atlantic

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980), as *Carex bigelowii* s.s. Our two collections of this taxon from Kugluk (Bloody Falls) Territorial Park are from the same population, but were collected as different numbers because of morphological differences observed in the field. *Carex bigelowii* typically has staminate terminal spikelets, as in no. *4096*, but no. *4097* has gynecandrous terminal spikelets. Subspecies *bigelowii* differs from the more common subsp. *lugens* by having spotted purple-black perigynium apices (vs. uniformly purple black on apical half). It reaches its western limit in the study area and is recorded in the Canadian Arctic from numerous mainland sites as well as Baffin, Devon, Ellesmere, Southampton and

Victoria islands (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; L.J. Gillespie and J.M. Saarela, unpublished data). The problematic taxonomy of the *C. bigelowii* complex is reviewed in Saarela et al. (2013a). Taxonomy here follows Standley et al. (2002).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 53* (DAO-175578); Kugluk (Bloody Falls) Territorial Park, along wet, muddy and deeply pitted ATV trail ca. 1 km W of Bloody Falls, 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4096* (ALA, ALTA, CAN, O); Kugluk (Bloody Falls) Territorial Park, along wet, muddy and deeply pitted ATV trail ca. 1 km W of Bloody Falls, 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4097* (CAN, UBC).

Carex bigelowii subsp. ***lugens*** (Holm) T.V. Egorova—Spruce muskeg sedge | Eurasian–amphi-Beringian

This taxon was previously recorded from Kugluktuk, as *C. lugens* Holm (Porsild & Cody, 1980). Taxonomy here follows Standley et al. (2002). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Subspecies *lugens* is much more common than subsp. *bigelowii* in the study area. Elsewhere in the Canadian Arctic this amphi-Beringian species is recorded from Banks and Victoria islands and some other mainland sites, reaching its eastern limit in central mainland Nunavut (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). The study area is near the western limit for the subspecies.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], mouth of Coppermine River, [67.819444°N, 115.06389°W ± 2000 m], 02 August 1962, *J.A. Larsen s.n.* (CAN-286314); flats on W side of Fockler Creek, above spruce forest in creek

valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3113* (ALA, ALTA, CAN, MO, MT, O); S of Fockler Creek, above small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 100 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3453* (CAN, QFA, US, WIN); Kugluk (Bloody Falls) Territorial Park, along Portage Trail at top of ridge on W bank of Coppermine River, near start of Bloody Falls rapids, 67°44'22.5"N, 115°22'40.6"W ± 10 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3928* (CAN, MT, UBC); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3948* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4062* (CAN, K, NY, UBC); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'13.2"N, 115°22'6.3"W ± 3 m, 21 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4146* (CAN, MO); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4275* (CAN).

Carex borealipolaris S.R. Zhang—Siberian kobresia | Asian (N/C)–amphi-Beringian

Previously recorded from Kugluktuk (Porsild & Cody, 1980), as *Kobresia hyperborea* Porsild, a synonym. This taxon was previously recognized as *Kobresia sibirica* (Turcz. ex Ledeb.) Boeckeler. Species of the genus *Kobresia* Willd., along with other segregate sedge genera in the tribe Cariceae, have been transferred to *Carex* to make it a monophyletic genus (Global *Carex* Group, 2015). We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody

Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic this amphi-Beringian species has been recorded from Baffin (one record) and Victoria islands, a few other mainland Nunavut sites and mainland Northwest Territories (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49'36"N, 115°5'36"W ± 1.5 km], 10 August 1962, *J.A. Larsen s.n.* (CAN-286320); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3118* (ALA, ALTA, CAN); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3368* (CAN, NY, QFA, WIN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m, 422 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3746* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4056* (CAN, MO, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4235* (CAN, UBC, US).

Carex capillaris subsp. ***fuscidula*** (V.I. Krecz. ex T.V. Egorova) Á. Löve & D. Löve—Hair sedge | Circumpolar-alpine

This taxon was previously recorded from the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen. We made collections at Kugluktuk, Fockler Creek, Kugluk

(Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Ellesmere and Victoria islands, and a few sites on mainland Nunavut and Northwest Territories (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). The taxonomy of the *C. capillaris* aggregate is reviewed in Saarela et al. (2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3081* (CAN); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3111* (CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3162* (CAN, MO, MT, O, US); sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3227* (CAN, UBC); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3259* (ALA, CAN); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3278* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3944* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4061* (CAN, MO, MT,

US); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4237* (CAN, K, NY, QFA, WIN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4370* (ALTA, CAN, O).

Carex capitata L., Fig. 21—Capitate sedge | Circumboreal-polar | Noteworthy Record

Our Subarctic collections, from Melville Creek and Kendall River, are the first ones for the study area and represent a northwestern range extension with respect to the nearest known locations along the eastern arm of Great Bear Lake (Porsild & Cody, 1980). Elsewhere in Nunavut this primarily boreal species is known from the Hood River (Gould & Walker, 1997), [treated as *C. arctogena* by Villaverde Hidalgo (2012)], the southeastern mainland (Porsild & Cody, 1980), southern Baffin Island (Aiken et al., 2007, as C. arctogena Harry Sm.) and Akimiski Island (Blaney & Kotanen, 2001). At the Melville Creek site the species was locally common in a mesic meadow around a small pond with *Rubus arcticus* subsp. *acaulis*, *Salix glauca* and *Betula glandulosa*; at the Kendall River site it grew in mesic tundra with *Betula glandulosa*, *Dasiphora fruticosa*, *Eriophorum angustifolium* and *Salix* spp.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3515* (ALA, CAN, UBC, WIN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3574* (ALTA, CAN, MO, MT, O).

2005 ***Carex chordorrhiza*** Ehrh. ex L.f.—Creeping sedge | Circumboreal-polar

2006 Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections of this
2007 distinctive strongly rhizomatous sedge in the vicinity of Fockler Creek, Kendall River and near
2008 Heart Lake growing in wetlands around small ponds. Elsewhere in the Canadian Arctic this
2009 species is recorded from southern Baffin Island, Victoria Island and mainland sites (Aiken et al.,
2010 2007; Bennett, 2015; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a).

2011 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
2012 vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17162* (CAN-
2013 127542); ridge top N of Fockler Creek and S of Tundra Lake, ca. 3.8 km SE of Sandstone
2014 Rapids, Coppermine River, 67°25'18.8"N, 115°35'3.6"W ± 3 m, 258 m, 05 July 2014, *Saarela*,
2015 *Sokoloff & Bull 3420* (CAN, UBC); confluence of Coppermine and Kendall rivers (NW side of
2016 Coppermine River, S side of Kendall River), small ponds on flats adjacent to Coppermine River,
2017 67°6'44.7"N, 116°8'6.1"W ± 100 m, 213 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3586* (ALA,
2018 CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine
2019 River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4279*
2020 (ALTA, CAN, O).

2021 ***Carex concinna*** R. Br., Fig. 22—Low northern sedge, beauty sedge | North America (N) |
2022 Noteworthy Record

2023 Our collections are the first for the study area and represent a northeastern range extension from
2024 the nearest sites along eastern Great Bear Lake (Porsild & Cody, 1980). This primarily boreal
2025 species was recently recorded from the Arctic ecozone in the Brock River area of adjacent
2026 Northwest Territories and is also known from sites west of there (Saarela et al., 2013a). The

2027 species is fairly common along the banks of the Coppermine River and was seen and collected at
2028 Fockler Creek, Big Creek, Kendall River, Escape Rapids and Kugluk (Bloody Falls) Territorial
2029 Park. It grows in disturbed areas on slopes, ridge, along trails and in the understory of white
2030 spruce forest. Elsewhere in Nunavut it is known only from the Nueltin Lake area on the
2031 mainland (Cody, 1978; Porsild, 1950b; Porsild & Cody, 1980) and Akimiski Island (Riley,
2032 1981). The taxon was described based on material collected by J. Richardson between Point
2033 Lake and the Arctic coast (i.e., along the Coppermine River, and thus possibly including material
2034 in the study area) and adjacent wooded country from latitude 54 to 64 (Richardson, 1823).

2035 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: slopes on E side of
2036 Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids,
2037 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3398*
2038 (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of
2039 Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m,
2040 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3569* (CAN, K, MT, QFA, US, WIN);
2041 confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall
2042 River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull*
2043 *3583* (CAN, UBC); S-facing slopes above Coppermine River and below spruce forest, ca. 7.8 km
2044 NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 08 July 2014,
2045 *Saarela*, *Sokoloff & Bull 3649* (CAN, MO, O, US); SE-facing slopes above Escape Rapids, W
2046 side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela,*
2047 *Sokoloff & Bull 3734* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley
2048 immediately SW of Bloody Falls, along rough marked section of Portage Trail, upper pond just
2049 W of Bloody Falls, 67°44'39.5"N, 115°22'28.9"W ± 10 m, 15 m, 13 July 2014, *Saarela*, *Sokoloff*

2050 *& Bull 3896* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, top of sandy ridge, ca. 0.75
2051 km W of Bloody Falls., 67°44'45.7"N, 115°23'4.6"W ± 25 m, 56 m, 15 July 2014, *Saarela*,
2052 *Sokoloff & Bull 4041* (CAN).

2053 ***Carex fuliginosa*** subsp. ***misandra*** (R. Br.) Nyman—Short leaf sedge | Circumpolar-alpine

2054 Previously recorded from the study area, as *C. misandra* R. Br. (Porsild & Cody, 1980), but we
2055 were unable to locate a voucher specimen. We made collections at Fockler Creek, Kugluk
2056 (Bloody Falls) Territorial Park and Kugluktuk. Taxonomy here follows Elven et al. (2011) and is
2057 reviewed in Saarela et al. (2013a). This species is widespread throughout the Canadian Arctic
2058 (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

2059 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in
2060 valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone
2061 Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull*
2062 *3355* (ALA, ALTA, CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, upper ledges of
2063 rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of
2064 Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff &*
2065 *Bull 3947* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1
2066 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July
2067 2014, *Saarela*, *Sokoloff & Bull 4376* (CAN).

2068 ***Carex glacialis*** Mack.—Glacier sedge | Circumpolar–alpine

2069 Previously recorded from Kugluktuk (Porsild & Cody, 1980). We collected it there on North
2070 Hill, and made collections around Fockler Creek and in Kugluk (Bloody Falls) Territorial Park.

Elsewhere in the Canadian Arctic this species is recorded from Baffin, Coats, Ellesmere, Nottingham and Victoria islands and numerous mainland sites (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17163* (CAN-12748); Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3088* (CAN, UBC); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3165* (CAN); third ridge N of Fockler Creek overlooking small lake, ca. 1.7 km SSE of Sandstone Rapids, Coppermine River, 67°26'7.3"N, 115°37'28"W ± 3 m, 171 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3222* (ALA, ALTA, CAN, O); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3998* (CAN, MO, MT, US).

Carex glareosa Wahlenb. subsp. ***glareosa*** —Gravel sedge | Circumpolar | Noteworthy Record

Our two collections of this species, which grows on tidal flats and in brackish marshes, are the first for the study area. We encountered this coastal species at Richardson Bay and on an island at the mouth of the Coppermine River. Elsewhere in Nunavut the species is known from the Bathurst Inlet area, the western shore of Hudson Bay and Baffin, Coats, Devon and Ellesmere islands (Aiken et al., 2007; Cody et al., 1984; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980). In Northwest Territories it is known from the Mackenzie Delta area, Ulukhaktok (Victoria Island) and the Brock Lagoon (Porsild & Cody, 1980; Saarela et al., 2013a). Porsild & Cody

(1980) treated the taxon as *C. glareosa* var. *amphigena* Fernald, which is considered a synonym of subsp. *glareosa* by Toivonen (2002). The other infraspecific taxon recognized, subsp. *pribylovensis* (Macoun) G. Halliday & Chater, is known only from the Pribilof and Aleutian islands, Alaska (Toivonen, 2002).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3687* (CAN, MO, MT, QFA, US, WIN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3727* (ALA, ALTA, CAN, O, UBC).

Carex gynocrates Wormsk. ex Drejer, Fig. 23A, B—Northern bog sedge | Asian (NE)–amphi-Beringian–North American (N) | Noteworthy Record

Our collections of this calciphile are the first for the study area and mainland Nunavut, and represent a northeastern range extension with respect to the closest known sites from the eastern shore of Great Bear Lake (Porsild and Cody 1980). Elsewhere in Nunavut this primarily boreal species is known from Baffin Island (Aiken et al., 2007; Porsild & Cody, 1980). In Kugluk (Bloody Falls) Territorial Park, we encountered the species in a large wet silty/sandy meadow with *Eriophorum triste*, *Carex fuliginosa* subsp. *misandra*, *C. membranacea*, *C. microglochin*, *C. simpliciuscula*, *Eriophorum callitrix*, *E. triste* and *Saxifraga aizoides*. Near Fockler Creek it grew in a wet sedge meadow with *C. membranacea* and *Trichophorum cespitosum*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine

River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3276* (ALA, CAN, MT, UBC); Kugluk (Bloody Falls) Territorial Park, wet meadow between Coppermine River and large sand hills on W side of river, 0.5 km W of Bloody Falls, 67°44'44.8"N, 115°22'48.3"W ± 15 m, 33 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4048* (CAN).

Carex holostoma Drejer—Arctic marsh sedge | Circumpolar?

Previously recorded along the Coppermine River (Porsild & Cody, 1980). We collected it at Fockler Creek, in Kugluk (Bloody Falls) Territorial Park, at Heart Lake and around the Kugluktuk sewage retention pond. At the latter, well-fertilized site, the plants were extremely vigorous and the vegetation very lush. Populations in the study area are at the eastern limit of the western half of this species' range in Canada. There is a large gap in the Central Arctic (Porsild & Cody, 1980), which is partly closed based on record(s) of this species of from the Hood River, where it was newly recorded by Gould & Walker (1997). Elsewhere in the Canadian Arctic it is recorded from southern Baffin Island, Victoria and Southampton islands, as well as a few sites on the mainland (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, 10 August 1962, *J.A. Larsen s.n.* (CAN-287133); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3115* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3943* (ALA, CAN); ca. 0.5 km SW of Heart Lake, SW of

Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4309* (ALTA, CAN, O); creek just N of sewage retention pond (used as sewage outlet), 5.1 km SW of Coppermine River, 67°48'59.1"N, 115°12'5.8"W ± 25 m, 34 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4334* (CAN, MO, MT).

Carex krausei Boeckeler, Fig. 23C—Krause's sedge | Circumpolar–alpine | Noteworthy Record

Our collections are the first ones for the study area, and close a gap between sites at Bathurst Inlet (Porsild and Cody 1980, as *C. capillaris* subsp. *robustior* (Drej. ex Lange) Böcher) (Bennett, 2015), Hood River (Gould & Walker, 1997) and Tuktut Nogait National Park and vicinity (Saarela et al., 2013a). We made collections at Fockler Creek, Melville Creek, Kugluk (Bloody Falls) Territorial Park, and in Kugluktuk. Elsewhere in the Canadian Arctic it is recorded from southern Baffin Island and Banks, Coats, Ellesmere and Southampton islands (Aiken et al., 2007). Taxonomy here follows Elven et al. (2011). The taxonomy of the *C. capillaris* aggregate (including *C. krausei*) is reviewed in Saarela et al. (2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3352* (CAN); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3369* (CAN, MO, MT, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3494* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of

Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3856* (CAN, NY, QFA, WIN); Kugluk (Bloody Falls) Territorial Park, small rocky meadow along small stream that runs into Coppermine River just below Bloody Falls, about 1 km W of Bloody Falls, 67°44'40.1"N, 115°23'37.5"W ± 15 m, 48 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4029* (ALTA, CAN, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4272* (ALA, CAN).

Carex lachenallii Schkuhr, Fig. 23D—Short leaf sedge | Circumpolar-alpine | Noteworthy Record

Our collections are the first ones from the study area, and represent a northeastern range extension in the central Canadian Arctic. We made collections around Fockler Creek (snowbed habitat), in the Coppermine Mountains (on a siksik den) and in Kugluktuk (snowbed community on east-facing slope at base of cliff, mossy ground). The nearest collection is from northern Great Bear Lake (Porsild and Cody 1980). Elsewhere in Nunavut it is recorded from Hood River (Gould & Walker, 1997), the eastern mainland, southern Baffin Island, and Coats, Southampton and Victoria islands (Aiken et al., 2007; Porsild & Cody, 1980). Coppermine River populations are at the northwestern limit of the western half of this species' range in Canada, as there is a large gap in the Central Arctic similar to the distribution of *C. holostoma* (Porsild and Cody 1980). It is not known if this gap is real, or an artefact of sampling. Plants recognized as *C. lachenallii* in Saarela et al. (2013a) are in fact *C. marina* Dewey, as noted on the last page of that publication; *C. lachenallii* is not known from that area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3295* (ALA, CAN, UBC); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3758* (CAN); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4348* (ALA, ALTA, CAN, O).

Carex livida (Wahlenb.) Willd.—Livid sedge | European (N) - Asian (NW) & Asian Pacific & North American | Noteworthy Record

Our single Subarctic collection is the first record of this species for continental Nunavut. The colonial, rhizomatous plants were growing in a large, wet, calcareous meadow with *Carex microglochin* and *Eriophorum angustifolium* in the vicinity of Fockler Creek. Rothrock & Reznicek (2002) reported this species as having a "very scattered" distribution. Elsewhere in Nunavut the taxon is recorded from Akimiski (Riley 1981; Blaney and Kotanen 2001) and Stromness islands (*Cayouette & Darbyshire J86-237*, DAO-681352) in James Bay. In northern Quebec and Labrador, *C. livida* is recorded as "not extending into the Arctic zone" (Cayouette 2007). In Northwest Territories the species is known from the Mackenzie Delta Region where one collection is within the Arctic ecozone (Eskimo Lake Basin, 69°N, 132°30'W, 18 August 1927, *Porsild & Porsild 2965*, CAN-21930, ALTA-29871; Porsild 1943), the west end of Great Slave Lake (Porsild & Cody, 1980), Heart Lake (Cody & Talbot, 1978), Aubry Lake (*Riewe & Marsh 343*, CAN-433228), a site along the Mackenzie River southwest of Great Bear Lake (*DeCarlo & Kershaw s.n.*, CAN-588721), the Ebbutt Hills (*Reid 1344*, ALTA-78494), Scotty

Creek (Garon-Labrecque et al., 2015 [2016]) and Nahanni National Park (Bennett, 2013). *Carex livida* was treated as a rare plant in Yukon (Douglas et al. 1981) but not in Northwest Territories (McJannet et al. 1995), although Douglas et al. (1981) earlier noted it to be rare there. It was recorded as "Sensitive" by the Working Group on General Status of NWT Species (2011). A collection from northern Yukon (Firth River, 68.88646°N, 140.44214°W, 395 m, 19 July 2008, *Bennett*, *Demers*, *Touzi & Reimer 08-375*, CAN-590238) is from a non-Arctic area. Porsild & Cody (1980) recognized the taxon as *C. livida* var. *grayana* (Dew.) Fernald, a name that Elven et al. (2011) considered to be a synonym of *C. livida* (no infraspecific taxa recognized) and that Rothrock & Reznicek (2002) did not treat.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats N of Fockler Creek, between Fockler Creek and Sleigh Creek, ca. 0.6 km SE of Sandstone Rapids, Coppermine River, 67°26'26"N, 115°37'40.7"W ± 3 m, 125 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3485* (ALA, CAN, O, UBC).

Carex marina Dewey, Fig. S3A—Sea sedge | Circumpolar-alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made numerous collections in the vicinity of Fockler Creek, in Kugluk (Bloody Falls) Territorial Park, and near the Kugluktuk sewage retention pond. In the Canadian Arctic the species is recorded from Baffin, Banks, Ellesmere, Nottingham, Southampton and Victoria islands as well as sites on the mainland (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). Elven et al. (2011) provisionally accepted two races, subsp. *marina* and subsp. *pseudolagopina* (T.J. Sørensen) Böcher, with only the former present in North America, whereas Toivonen (2002) did not recognize subspecies. We follow the latter authority. Porsild & Cody (1980) recognized the

taxon as *Carex amblyorhyncha* V. I. Krecz., a name now treated as a synonym of *C. marina* (Elven et al., 2011; Toivonen, 2002).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 10 August 1962, *J.A. Larsen s.n.* (CAN-286311); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3261* (CAN, UBC); tundra below Tundra Lake and Fockler Creek, ca. 4.1 km SE of Sandstone Rapids, Coppermine River, 67°25'20.7"N, 115°34'17.2"W ± 25 m, 271 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3428* (ALA, ALTA, CAN); small unnamed tributary of Sleigh Creek, just upstream from its confluence with Sleigh Creek, 67°26'43.9"N, 115°36'57"W ± 5 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3463* (CAN, MO, MT, O); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3859* (CAN); Kugluk (Bloody Falls) Territorial Park, flats 1 km W of Bloody Falls, W side of Coppermine River, 67°44'32.6"N, 115°23'23.1"W ± 10 m, 70 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4095* (ALA, ALTA, CAN, K, MO, MT, NY, UBC); Kugluk (Bloody Falls) Territorial Park, rocky sand beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4121* (CAN); creek just N of sewage retention pond (used as sewage outlet), 5.1 km SW of Coppermine River, 67°48'59.1"N, 115°12'5.8"W ± 25 m, 34 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4332* (CAN, K, MO, O, QFA, US, WIN).

Carex maritima Gunnerus, Fig. S3B, C—Maritime sedge | Circumpolar-alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections of this strongly rhizomatous sedge at Richardson Bay, in Kugluk (Bloody Falls) Territorial Park, and at Heart Lake. In the Canadian Arctic the species is recorded from Baffin, Banks, Coats, Devon, Ellesmere, Southampton and Victoria islands as well as sites on the mainland (Aiken et al., 2007; Cody et al., 2003; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 02 August 1962, *J.A. Larsen s.n.* (CAN-287134); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3686* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky sand beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4117* (ALA, ALTA, CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4295* (CAN, MO, O).

Carex membranacea Hook., Fig. S4—Fragile sedge | Amphi-Beringian–North America (N)

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections of this common sedge at Fockler Creek and in Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 02 August 1962, *J.A. Larsen s.n.* (CAN-287134); old

riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3161* (ALTA, CAN, O); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3265* (CAN, MO, MT); gravel bar in Fockler Creek just above its confluence with Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'21.4"N, 115°38'54"W ± 5 m, 141 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3363* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, small rocky meadow along small stream that runs into Coppermine River just below Bloody Falls, about 1 km W of Bloody Falls, 67°44'40.1"N, 115°23'37.5"W ± 15 m, 48 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4028* (ALA, CAN).

Carex microglochin Wahlenb.—Bristle sedge | American Beringian–North American–amphi-Atlantic–European (N/C) & Asian (C), bipolar | Noteworthy Record

Our collections are the first ones from the study area, and close a gap between Bathurst Inlet, the eastern shore of Great Bear Lake, and Tuktut Nogait National Park and vicinity (Porsild, 1943; Porsild & Cody, 1980; Saarela et al., 2013a). We made collections in the vicinity of Fockler Creek, at Big Creek, Kugluk (Bloody Falls) Territorial Park, and Kugluktuk. The species was uncommon to locally common in wet areas, including sedge meadows, river beds, disturbed clay flats and silty/sandy meadows, growing with such species as *Carex aquatilis* subsp. *stans, C. fuliginosa* subsp. *misandra*, *C. membranacea*, *Carex simpliciuscula* subsp. *subholarctica*, *Eriophorum callitrix*, *Eriophorum triste*, *Pinguicula vulgaris*, *Saxifraga* aizoides, *Tofieldia pusilla* and *Trichophorum caespitosum*. Elsewhere in the Canadian Arctic this species is recorded from southern Baffin Island, Banks and Victoria islands, and a few other mainland sites

(Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy of this bipolar species is reviewed in Saarela et al. (2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3267* (CAN, UBC); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3561* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, upper pond just W of Bloody Falls, 67°44'39.5"N, 115°22'28.9"W ± 10 m, 15 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3895* (CAN); Kugluk (Bloody Falls) Territorial Park, wet meadow between Coppermine River and large sand hills on W side of river, 0.5 km W of Bloody Falls, 67°44'44.8"N, 115°22'48.3"W ± 15 m, 33 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4047* (CAN, MO, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4267* (CAN, MT, WIN).

Carex myosuroides Vill.—Mouse-tail bog sedge | Circumpolar-alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections in the vicinities of Fockler Creek, Big Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. In the Canadian Arctic the species is recorded from Baffin, Banks, Devon, Ellesmere, Melville, Somerset, Southampton and Victoria islands as well as a few other sites on the mainland (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). This taxon was previously recognized

as *Kobresia myosuroides* (Vill.) Fiori. Species of the genus *Kobresia*, along with other segregate sedge genera in the tribe Cariceae, have been transferred to *Carex* to make it a monophyletic genus (Global *Carex* Group, 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], Coronation Gulf, at mouth of Coppermine River, back of the village, [67.822146°N, 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3284* (CAN-199943); SW-facing slope above (N side) of Fockler Creek, ca. 3.2 km SEK of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25 m, 193 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3416* (ALA, CAN, UBC); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3554* (CAN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3991* (ALTA, CAN, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4372* (CAN, MO, MT).

Carex nardina Fr.—Nard sedge | Amphi-Beringian–North American–amphi-Atlantic (W) | Noteworthy Record

Our collections are the first ones for the study area. We made collections in Kugluktuk, at Fockler Creek and in Kugluk (Bloody Falls) Territorial Park. The nearest collections are from Great Bear Lake, Tuktut Nogait Park and vicinity including adjacent Nunavut, and Bathurst Inlet and vicinity (Cody & Reading, 2005; Cody et al., 1984; Gould & Walker, 1997; Porsild & Cody,

1980; Saarela et al., 2013a). Elsewhere in the Canadian Arctic the species is recorded from Baffin, Banks, Devon, Ellesmere, Mansel, Mellville, Nottingham, Southampton and Victoria islands as well as sites on the mainland (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a). Varying infraspecific taxonomic treatments for this species have been proposed, as reviewed in Saarela et al. (2013a). A recent molecular and morphological study of the *C. nardina* complex concluded the taxon is best recognized as a single variable species (Sawtell, 2012), as treated by Murray (2002a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3087* (ALA, ALTA, CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3163* (CAN, UBC); SW-facing slope above (N side) of Fockler Creek, ca. 3.2 km SE of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25 m, 193 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3413* (CAN, NY, QFA, US, WIN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3997* (CAN, MO, MT, O).

Carex norvegica Retz.—Norway sedge | North American (NE)–amphi-Atlantic–Eurasian | Noteworthy Record

Our collections of this species are the first for the study area and for western Nunavut. We made one collection in the vicinity of Fockler Creek in the Subarctic portion of the study area, where the species was uncommon on hummocks in mesic tundra, growing with *Betula glandulosa*,

Carex scirpoidea subsp. *scirpoidea*, *C. vaginata* and *Vaccinium uliginosum*. A second collection was made further north in Kugluk (Bloody Falls) Territorial Park in low shrub tundra, where the species was locally common, growing with *B. glandulosa*, *C. bigelowii*, *Eriophorum vaginatum*, *Rhododendron lapponicum*, *Rumex arcticus* and *Salix* spp.

The more northerly distributed *Carex norvegica* and the circumboreal *C. media* R. Br. are morphologically similar and closely-related taxa (Gebauer et al., 2015). They are sometimes considered synonyms (with *C. media* usually treated as an infraspecific taxon) but are recognized as species in recent North American literature (Porsild and Cody 1980; Murray 2002; Elven et al. 2011). *Carex media* was only recently reported for Nunavut, from the southeastern mainland (Cody & Reading, 2005). We initially had difficulties distinguishing *C. norvegica* and *C. media*, due to problems in published keys. In Porsild and Cody (1980), *C. media* and *C. norvegica* key out in the *Eucarices tristigmatae* key under the first lead, "terminal spike staminate"—this is an error as both species have terminal spikes gynecandrous, as noted correctly in the descriptions in that treatment. The first clauses of the key in Murray (2002b) distinguishing *C. norvegica* and *C. media* (lead 13) are erroneously switched with respect to the taxon descriptions in the same publication, which are correct, and some useful distinguishing characters listed in the descriptions were not included in the key (e.g., perigynia length). A revised key is presented below. Our collection 4054 has perigynia 2.2–2.4 mm long, obovate and mostly dark brown (a few are greenish becoming dark brown) and faintly-nerved proximally. Pistillate scales are slightly shorter than the perigynia with distinctly hyaline margins to near their bases. The plants were growing in dense clumps, with culms up to 30 cm (current year culms shorter). No. 3220 are younger plants with green perigynia but otherwise similar to 4054. These characters place our collections under *C. norvegica.*

There are conflicting reports in the literature regarding the distribution of this species. *Carex norvegica* was reported by Murray (2002b) as an Amphi-Atlantic taxon that reaches its eastern limit along western Hudson Bay where there are several records (Cody et al., 1989; Porsild & Cody, 1980), whereas Elven et al. (2011) reported a broader distribution, as given above (also see maps in Kalela, 1944). In northwestern Canada the species is recorded from a single Yukon collection (Ogilvie Mts.: river flats along Dempster Rd., mile 57–58, elev. 2500–4200 ft., in meadows between old channels, 23 July 1966, *R.T. Porsild 294*, CAN-303347, det. A.E. Porsild s.d., A.A. Reznicek 2006;) this collection was determined by T. Spribille, in 1997, as *Carex norvegica* cf. subsp. *conicorostrata*. This Yukon specimen was mapped for the species in Porsild & Cody (1980) and Cody (2000), whereas Murray (2002b) did not record Yukon as part of its distribution. Elven et al. (2011) recognized three infraspecific taxa in *C. norvegica*, following Kalela (1944): subsp. *norvegica* from Europe and Greenland, subsp. *inserrulata* Kalela from Canada and Greenland and subsp. *conicorostrata* Kalela from Russia and possibly Alaska. Murray (2002b) did not recognize infraspecific taxa but noted further study of variation is needed; we follow this treatment. The reproductive characters in the Yukon collection match our specimens, and the Yukon plant is similarly densely cespitose (but much larger with culms up to 36 cm tall). Whether the Coppermine River plants are more closely related to the western than the eastern populations is an open question. Despite this new record, there remains a large and conspicuous gap between the populations in the study area and western Hudson Bay in the North American distribution of the species. Elsewhere in the Canadian Arctic the species is recorded from southern Baffin Island, and Southampton Island, and adjacent northern Quebec and Labrador (Aiken et al., 2007).

Key to distinguish *C. media* and *C. norvegica*, modified from Murray (2002b):

1. Perigynia green becoming dark brown or purple-black, veinless, elliptic or obovate, 2–2.5 mm long; pistillate scales dark brown or black, margins hyaline, equalling or shorter than perigynia; beak 0.2–0.3 mm…*C. norvegica*

1’ Perigynia pale green becoming golden brown, often veined proximally, ovate, 2.5–3.5 mm long; pistillate scales dark brown to black to margins or distally hyaline, ovate or lanceolate, shorter than (often ½ length); beak 0.3-0.4 mm…*C. media*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: just above second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'3.3"N, 115°37'25.6"W ± 5 m, 169 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3220* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4054* (ALA, ALTA, CAN, MO, O).

Carex petricosa Dewey subsp. ***petricosa***, Fig. 24—Rock-dwelling sedge | Amphi-Beringian–Cordilleran & North America (NE) | Noteworthy Record

Our collections are the first records for the study area. The map in Ball & Zoladz (1994) records the taxon’s eastern limit as extending to just east of the Northwest Territories/Nunavut border, based on a single record (Cox Lake, 60 miles W of Coppermine [Kugluktuk], 67.8833, -116.6333, Aug 1986, *S. Fleck s.n.*, DAO-543874!, det. Ball and Zoladz 1994), the only record they knew from Nunavut. It was subsequently recorded from the upper Hood River (as *C. petricosa*(Gould & Walker, 1997); this area represents the taxon’s eastern limit. Despite these

previous Nunavut records, the taxon was not recorded for Nunavut in Ball & Mastrogiuseppe (2002). Bennett (2015) recently reported *C. petricosa* from Ovayok (Mount Pelly) Territorial Park, near Cambridge Bay, Nunavut, where it was photographed but not collected in 2013, and from two sites in 2014, 30 Mile River and near Ferguson Lake and Ekalluk River on Victoria Island. At least one sheet of one these reports (*Bennett & Sullivan 13-028*8, CAN-603847) is a misidentified collection: the specimen is *C. fuliginosa* subsp. *misandra*, and the others require confirmation. The nearest collections to the southwest are from the Great Bear Lake area (Porsild, 1943; Porsild & Cody, 1980), and the taxon occurs further northward on northwestern Victoria Island (Aiken et al., 2007). It also reaches Arctic Canada in northern Yukon (Cody, 2000). The other infraspecific taxon, var. *misandroides* (Fernald) B. Boivin, treated as *C. misandroides* Fernald in Porsild & Cody (1980), occurs in eastern Canada (Ball & Zoladz, 1994). We prefer to recognize these taxa as subspecies, and make the needed combination for the eastern taxon here:

Carex petricosa subsp. *misandroides* (Fernald) Saarela, **comb. et stat. nov.** Basionym: *Carex misandroide*s Fernald, Rhodora 17: 158. 1915.

We collected the species at six sites in the study area spanning the Subarctic and Arctic regions, but we did not find it further north than Kugluk (Bloody Falls) Territorial Park. In the study area it grows in disturbed places on slopes, ridges, sand hills, and mud boils on tundra flats. It is usually locally common where it occurs. Associated species include *Arnica angustifolia*, *Artemisia borealis* subsp. *borealis*, *Betula glandulosa*, *Bistorta vivipara*, *Calamagrostis purpurascens*, *Carex scirpoidea* subsp. *scirpoidea*, *Dasiphora fruticosa*, *Dryas integrifolia*, *Elymus alaskanus*, *Festuca rubra* subsp. *arctica*, *Hedysarum americanum*, *Hedysarum boreale* subsp. *mackenziei*, *Oxytropis hyperborea*, *Salix niphoclada*, *S. reticulata*, and *Salix* spp.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3318* (CAN, K, NY, QFA, UBC); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3553* (ALTA, CAN, O); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N, 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3736* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, top of sandy ridge, ca. 0.75 km W of Bloody Falls, 67°44'45.7"N, 115°23'4.6"W ± 25 m, 56 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4042* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'13.2"N, 115°22'6.3"W ± 3 m, 21 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4147* (CAN, MO, MT); Kugluk (Bloody Falls) Territorial Park, deep gully in sand hills, NW of Bloody Falls, 67°45'12.9"N, 115°22'54.1"W ± 3 m, 28 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4173* (CAN, US, WIN).

Carex podocarpa R. Br., Fig. 25—Graceful mountain sedge | Asian (NE)–amphi-Beringian–Cordilleran | Noteworthy Record

This primarily boreal, tussock-forming taxon was previously recorded from Bloody Falls (Porsild & Cody, 1980). We found it to be common in the study area, usually growing in meadow, low shrub tundra or snowbed communities. It occurs throughout the study area, as far north as Kugluktuk—a minor range extension from the earlier Bloody Falls record—representing its northern limit in Nunavut. We made numerous collections in the vicinities of Fockler Creek, Melville Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This taxon may be confused in the field with *C. atrofusca*, but the latter is readily distinguished

by its serrulate beak and upper perigynium margins (Murray, 1970). It is recorded as far east as Bathurst Inlet, where the taxon is known from a single collection (*Kelsall & McEwen 271*, CAN-202995; mapped in Porsild and Cody 1980), and it is also recorded from the Hood River (Gould & Walker, 1997). There are no collections between these areas and the study area. Elsewhere in Canada it reaches the Low Arctic west of the Mackenzie River Delta (Porsild, 1943) and in northern Yukon (Cody, 2000). *Carex podocarpa* was described by Brown in Richardson (1823) based on material collected between Point Lake and the Arctic coast (i.e., along the Coppermine River), possibly from within the study area (type BM000611688, GH00027375, K001079019).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3164* (ALTA, CAN, MO, O); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3184* (CAN, MT, US, WIN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3291* (CAN, MO, O); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3304* (CAN, UBC); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'29.5"N, 115°33'50.4"W ± 50 m, 266 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3431* (CAN, MT, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3512* (ALA, CAN); S-facing slopes above Coppermine River and

below spruce forest, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3647* (CAN, QFA, WIN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3761* (CAN); Kugluk (Bloody Falls) Territorial Park, NE-facing slope of large hill just S of Bloody Falls, W side of Coppermine River, 67°44'6.6"N, 115°23'13.4"W ± 50 m, 40 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3987* (CAN, K, NY); gradual slopes above small meadow that drain into a deep gully in sand hills NW of Bloody Falls, 67°45'40.2"N, 115°23'0.1"W ± 3 m, 75 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4175* (ALTA, CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4268* (CAN); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4359* (ALA, CAN, UBC).

Carex rariflora (Wahlenb.) Sm., Fig. S5A—Loose-flowered alpine sedge | Circumpolar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections near Fockler Creek, in Kugluk (Bloody Falls) Territorial Park and in Kugluktuk. The infraspecific taxonomy of this species is reviewed in Saarela et al. (2013a). In the Canadian Arctic this species is recorded from Baffin, Coats, Southampton and Victoria islands and other mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 2 July 1951, *W.I. Findlay 68* (DAO-175414 barcode 01-

01000677834); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3257* (ALA, CAN, UBC); Kugluk (Bloody Falls) Territorial Park, flats 1 km W of Bloody Falls, W side of Coppermine River, 67°44'31.5"N, 115°23'21.4"W ± 5 m, 68 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4094* (ALTA, CAN, MO, MT, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4269* (CAN, NY, QFA, US, WIN).

Carex rupestris All.—Rock sedge | Circumpolar-alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections of this common sedge from the vicinities of Fockler Creek and Big Creek and in Kugluk (Bloody Falls) Territorial Park and Kugluktuk. In the Canadian Arctic this species is recorded from Baffin, Banks, Ellesmere, Melville, Somerset, Southampton and Victoria islands and other mainland sites (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 23 July 1956, *A.E. Porsild 171*64 (CAN-127575); Kugluktuk, airport, 67.816667°N, 115.143889°W, 02 July 2008, *L.J. Gillespie*, *J.M. Saarela*, *L.M. Consaul & R.D. Bull 7458* (CAN-592565); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3082* (CAN, MO, MT, O); second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3213* (CAN, NY, QFA, US, WIN); forest and slopes at confluence of Big Creek and

Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3564* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3939* (ALA, ALTA, CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4375* (ALA, ALTA, CAN, K, MO, O, UBC).

Carex saxatilis L., Fig. S5B, C—Russet sedge | Circumboreal-polar

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections of this wetland sedge around Fockler Creek, Bigtree River, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. In the Canadian Arctic this species is recorded from Baffin, Banks, Coats, Ellesmere, Southampton and Victoria islands and other mainland sites (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomic treatments of *C. saxatilis* have varied (Elven et al., 2011; Ford & Ball, 1992). Porsild & Cody (1980) recognized plants in the study area as *C. saxatilis* var. *rhomalea* Fernald, and also recognized the separate species *C. physocarpa* Presl, which was treated as a synonym of *C. saxatilis* by Ford & Ball (1992) and Reznicek & Ford (2002). We follow the latter treatments here and recognize a polymorphic C. *saxatilis* in North America, whereas Elven et al. (2011) recognize North American plants as subsp. *laxa* (Trautv.) Kalela.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 02 August 1962, *J.A. Larsen s.n.* (CAN-286317); S of

Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3262* (ALTA, CAN, MO, O); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3607* (CAN, MT, US, WIN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3911* (CAN, K, NY, QFA, WIN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4362* (ALA, CAN, UBC).

Carex scirpoidea Michx. subsp. ***scirpoidea***, Fig. S6A—Scirpus sedge | Amphi-Beringian–North America (N)–amphi-Atlantic (W)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We collected this cespitose sedge at Fockler Creek, Melville Creek, Escape Rapids and Kugluk (Bloody Falls) Territorial Park. In the Canadian Arctic this species is recorded from Baffin, Banks, Coats, Devon, Ellesmere, King William, Southampton and Victoria islands and other mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows recent treatments, which are in agreement with the recognition of infraspecific taxa (Dunlop, 2002; Dunlop & Crow, 1999; Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 23 June 1951, *W.I. Findlay 31* (DAO-175100 barcode 01-01000677472); Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 02 July 1958,

2582 *R.D. Wood s.n.* (CAN-485074); flats on W side of Fockler Creek, above spruce forest in creek
2583 valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m,
2584 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3128* (CAN, UBC); confluence of Coppermine
2585 River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350
2586 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3504* (CAN, MO, MT, O, QFA, US,
2587 WIN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N,
2588 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3740* (CAN); Kugluk
2589 (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River,
2590 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3974* (ALA,
2591 ALTA, CAN).

2592 ***Carex simpliciuscula*** subsp. ***subholarctica*** **(T.V.Egorova) Saarela, comb. nov.** Basionym:
2593 *Kobresia simpliciuscula* (Wahlenb.) Mack. subsp. *subholarctica* T.V.Egorova, Novosti. Sist.
2594 Vyssh. Rast., 20:83. 1983—Simple bog sedge | Asian (NE)–amphi-Beringian–North American
2595 (N)–amphi-Atlantic (W)

2596 Previously recorded from the study area (Porsild & Cody, 1980) but we were unable to locate a
2597 voucher specimen. We made collections at Fockler Creek, Melville Creek, Big Creek,
2598 Coppermine Mountains and in Kugluk (Bloody Falls) Territorial Park. In the Canadian Arctic
2599 this species is recorded from Baffin, Banks, Devon, Ellesmere, Southampton and Victoria islands
2600 and other mainland sites (Aiken et al., 2007; Cody et al., 1989; Porsild & Cody, 1980; Saarela et
2601 al., 2013a). This taxon was previously recognized as *Kobresia simpliciuscula* subsp.
2602 *subholarctica* T.V. Egorova (Elven et al. 2011). Species of *Kobresia*, along with other segregate
2603 sedge genera in the tribe Cariceae, are now recognized in *Carex* (Global *Carex* Group, 2015).
2604 The correct name for *K. simpliciuscula* (Wahlenb.) Mack. in *Carex* is *C. simpliciuscula*

Wahlenb., and the combination for subsp. *subholarctica* is made here. The nominate subspecies is European and does not reach the Arctic (Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3224* (ALTA, CAN, O); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3507* (CAN, MO, MT); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3550* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3942* (CAN, US, WIN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'13.2"N, 115°22'6.3"W ± 3 m, 21 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4145* (ALA, CAN).

Carex subspathacea Wormsk., Fig. S6B, C—Hoppner's sedge | Circumpolar | Noteworthy Record

Newly recorded for the study area. Our collections of this coastal and halophytic rhizomatous sedge from Richardson Bay and an island in the mouth of the Coppermine River close a gap between Bernard Harbour to the northwest and Bathurst Inlet to the east (Macoun & Holm, 1921; Porsild & Cody, 1980). Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Devon, Ellesmere, King William, Southampton and Victoria islands and a few other

mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3670* (CAN, UBC); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3724* (ALA, CAN).

Carex supina subsp. ***spaniocarpa*** (Steud.) Hultén—Weak Arctic sedge | Circumboreal-polar

Previously recorded from the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen. We made collections of this rhizomatous sedge in the vicinity of Fockler Creek and at Heart Lake, growing in disturbed areas. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks and Southampton islands and a few other mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3218* (CAN); disturbed slopes on N side of Fockler Creek, ca. 2 km SSE of Sandstone Rapids, 67°25'55.6"N, 115°37'42.7"W ± 9 m, 159 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3744* (ALA, CAN); S of Fockler Creek, S-facing slope on N side of small tributary flowing into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 25 m, 156 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3238* (CAN, UBC); E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N,

115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3339* (CAN, QFA, US, WIN); SW-facing slope above (N side) of Fockler Creek, ca. 3.2 km SE of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25 m, 193 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3414* (ALTA, CAN, O); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4305* (CAN, MO, MT).

Carex ursina Dewey—Bear sedge | Circumpolar | Noteworthy Record

Newly recorded for the study area. Our collection from Richardson Bay closes a distributional gap for this densely tufted seashore species between Bathurst Inlet to the east and sites in the vicinity of Paulatuk to the west (Porsild & Cody, 1980; Saarela et al., 2013a). Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Coats, Devon, Ellesmere, King William, Melville, Prince Patrick, Somerset, Southampton and Victoria islands and a few other mainland sites (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3675* (ALA, CAN, UBC).

Carex vaginata Tausch, Fig. S7—Sheathed sedge | Circumboreal-polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Big Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic this species is recorded from southern Baffin Island, Banks, Southampton and Victoria islands, and a few other mainland sites (Aiken et al., 2007; Cody &

Reading, 2005; Cody et al., 1984; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 69* (DAO, not seen); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3070* (CAN); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3109* (ALA, ALTA, CAN, O); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3566* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3919* (CAN, MO, MT, UBC).

Carex williamsii Britton—Williams' sedge | Asian (N/C)–amphi-Beringian–North American (N) | Noteworthy Record

Our two collections are the first records of this uncommon species for the study area and fill in a large gap between Great Slave Lake, Bathurst Inlet, Hood River and the Tuktoyaktuk Peninsula and Eskimo Lakes area (Gould & Walker, 1997; Porsild, 1943; Porsild & Cody, 1980). The taxon was not recorded for Tuktut Nogait National Park and vicinity (Saarela et al., 2013a). We found the species at two sites west of Kugluktuk. At a site just south of Heart Lake, the species was locally common in wet, hummocky tundra with *Andromeda polifolia*, *Betula glandulosa*, *Carex membranacea* and *Rubus chamaemorus*. At the other site, it grew in an extremely lush

sedge meadow along a small creek enriched by runoff from the nearby sewage retention pond, with *Carex aquatilis* var. *minor*, *Descurainia sophioides*, *Eriophorum angustifolium*, *Tephroseris palustris* subsp. *congesta* and *Rubus chamaemorus*. The study area is the northernmost limit for the species in Nunavut. Elsewhere in the Canadian Arctic it is known from southern Baffin Island, Southampton Island, adjacent northern Quebec and Labrador, and a few other sites on mainland Nunavut (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4292* (ALA, ALTA, CAN); creek just N of sewage retention pond (used as sewage outlet), 5.1 km SW of Coppermine River, 67°48'59.1"N, 115°12'5.8"W ± 25 m, 34 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4333* (CAN, UBC).

Eleocharis acicularis (L.) Roem. & Schult.—Needle spikerush | Circumboreal-polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980) but we were unable to locate the voucher (*Findlay 255B*) for verification. We made collections of this rare species near the Kendall River, where it was locally common and submerged in shallow water, and at Heart Lake, where it formed dense patches on a wet sandy seasonally flooded beach, growing with *Juncus alpinoarticulatus* subsp. *americanus*, *J. arcticus* subsp. *alaskanus*, *J. triglumis* subsp. *albescens*, *Carex aquatilis* subsp. *minor* and *Salix alaxensis*. One of our collections (no. 3588) was sterile, while the other (no. 4299b) was gathered in flower. Elsewhere in the Canadian Arctic this species is recorded from southern Baffin Island, Bathurst Inlet and southeastern mainland Nunavut (Aiken et al., 2007; Cody et al., 1984; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), small ponds on flats adjacent to Coppermine River, 67°6'44.7"N, 116°8'6.1"W ± 100 m, 213 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3588* (CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4299b* (CAN).

Eleocharis quinqueflora (Hartmann) O. Schwarz, Fig. 26—Few-flowered spikerush | North American (NE) | Noteworthy Record

Our two collections are the first records for Nunavut, and represent a northeastern range extension from the nearest known sites around Great Bear Lake (Porsild, 1943; Porsild & Cody, 1980). Both collections were made in the Arctic portion of the study area. The species was locally common in wet, muddy ground in a wet meadow near Kugluktuk, growing with *Carex aquatilis* var. *minor*, *Carex membranacea*, *Eriophorum scheuchzeri* and *Pinguicula vulgaris* and on a rocky beach just west of Bloody Falls with *Artemisia tilesii*, *Bromus pumpellianus*, *Calamagrostis purpurascens*, *Carex saxatilis*, *Deschampsia cespitosa*, *Hedysarum americanum*, *Juncus arcticus* subsp. *alaskanus*, *J. leuchochlamys*, *Salix alaxensis* and *S. niphoclada*. Porsild & Cody (1980) treated the taxon as *E. pauciflora* var. *fernaldii* Svenson; Elven et al. (2011) treated it as *E. quinquiflora* subsp. *fernaldii* (Svenson) Hultén; whereas Smith et al. (2002) did not recognize infraspecific taxa, citing the need for further study. We follow the latter treatment. The key below, adapted from Smith et al. (2002) includes characters that may be used to separate this species from *E. acicularis* in the absence of mature achenes (used in the key in Porsild and Cody 1980). Two of our collections (*Saarela eta l. 3971*, *4270*) were in flower but did not have mature achenes.

Key distinguishing *E. acicularis* and *E. quinqueflora*, adapted from Smith et al. (2002):

1. Anthers 1.5–2.7(–3.5) mm; achenes 1.6–2.3 × 0.7–1.3 mm, tubercles rarely absent, 0.3–0.4 × 0.2–0.3 mm; floral scales 2.5-6 × 1.5–2.5 mm … *E. quinqueflora*

1’ Anthers 0.7–1.5 mm; achenes 0.7–1.1 × 0.35–0.6 mm, tubercles (0.05–)0.1–0.2 × 0.15–0.25 mm; floral scales 1.5–2.5(–3.5) × 1–1.5 mm … *E. acicularis*

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3971* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4270* (ALA, ALTA, CAN).

Eriophorum angustifolium Honck., Fig. S8A, B—Narrow-leaved cottongrass | Circumboreal-polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections in the vicinity of Fockler Creek and in Kugluk (Bloody Falls) Territorial Park. *Eriophorum angustifolium* and *E. triste* have been recognized as separate species (Elven et al., 2011; Porsild & Cody, 1980), as subspecies of *E. angustifolium* (Ball & Wujek, 2002) or as a single polymorphic taxon (Aiken et al., 2007). We agree with Elven et al. (2011) in recognizing these taxa as species; a key to distinguish them is given in Saarela et al. (2013a). *Eriophorum angustifolium* prefers wetter habitats than *E. triste*. Elsewhere in the Canadian Arctic this species has been recorded from Baffin, Banks, Coats, Ellesmere, Melville, Prince of Wales, Somerset,

Southampton and Victoria islands and sites across the mainland (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 1931, *A.M. Berry 2* (CAN-28008); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 August 1951, *W.I. Findlay 245* (ACAD-30942, ALTA-VP-4195, DAO-174448 barcode 01-01000677911, UBC-V40776); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 30 June 1951, *W.I. Findlay 54* (DAO-174471 barcode 01-01000677912); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 145* (UBC-V151908); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3301* (ALA, ALTA, CAN); Sleigh Creek, near its confluence with small, unnamed tributary, ca. 1 km SE of Sandstone Rapids, Coppermine River, 67°27'2"N, 115°37'28.7"W ± 10 m, 150 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3465* (CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°43'58"N, 115°24'33.3"W ± 25 m, 109 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4003* (CAN, UBC).

Eriophorum brachyantherum Trautv. & C.A. Mey.—Closed-sheath cottongrass | Circumboreal-polar

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections in the vicinity of Fockler Creek and at a site just beyond the southwestern boundary of Kugluk (Bloody Falls) Territorial Park. The range of this species was recently expanded to northwestern Victoria Island, the first records for the western Canadian Arctic Archipelago (Gillespie et al. 2015).

Elsewhere in the Canadian Arctic this species has been recorded from Baffin and Southampton islands and a few other mainland sites (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17165* (CAN-127517); sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3228* (CAN, MT, US); Sleigh Creek, near its confluence with small, unnamed tributary, ca. 1 km SE of Sandstone Rapids, Coppermine River, 67°27'2"N, 115°37'28.7"W ± 10 m, 150 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3469* (CAN, K, NY, UBC); flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°43'52.3"N, 115°24'36.4"W ± 3 m, 115 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4000* (CAN, QFA, WIN).

Eriophorum callitrix Cham.—Arctic cottongrass | Asian (N)–amphi-Beringian–North American (N) | Noteworthy Record

Our collections are the first records for the study area, and fill in a gap between Bathurst Inlet, Hood River, Great Slave Lake, Tuktut Nogait National Park and vicinity and sites on Victoria Island to the north (Gould & Walker, 1997; Porsild & Cody, 1980; Saarela et al., 2013a). We made collections at Fockler Creek and in Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species has been recorded from Baffin, Banks, Devon, Somerset, Southampton and Victoria islands, and other mainland sites (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3255* (CAN); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3354* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, wet meadow between Coppermine River and large sand hills on W side of river, 0.5 km W of Bloody Falls, 67°44'44.8"N, 115°22'48.3"W ± 15 m, 33 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4046* (CAN).

Eriophorum scheuchzeri subsp. ***arcticum*** M.S. Novos., Fig. S8C—Scheuchzer's cottongrass | Circumpolar

This species was previously recorded from Kugluktuk as *E. scheuchzeri* (Cody, 1954b; Porsild & Cody, 1980). We made collections of this rhizomatous cottongrass in the vicinity of Fockler Creek, Escape Rapids, in Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. Taxonomy follows Elven et al. (2011), who recognize two subspecies in *E. scheuchzeri* Hoppe (also see Cayouette, 2004). The taxonomic history of this complex is reviewed in Saarela et al. (2013a). Elsewhere in the Canadian Arctic this species has been recorded from Baffin, Banks, Coast, Devon, Ellesmere, Melville, Nottingham, Somerset, Southampton and Victoria islands (Aiken et al., 2007). Its mainland distribution is unclear but it has been recorded from Tuktut Nogait National Park and vicinity (Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 256* (ACAD-30940, ALTA-VP-4239,

DAO-174576 barcode 01-01000677914, MT00185938, UBC-V40774); Coppermine [Kugluktuk], 13 July 1958, *R.D. Wood s.n.* (CAN-265598); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 144* (UBC-V151909); Kugluktuk, 12 July 2006, 67 49.531 N, 115 05.415'W, *J.D. Davis 625* (CAN-597654); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3367* (CAN, UBC); confluence of Sleigh Creek and Coppermine River, 0.4 km N of Sandstone Rapids, 67°27'13.9"N, 115°38'7.7"W ± 25 m, 126 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3482* (ALA, CAN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N, 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3743* (CAN, US, WIN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3907* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°43'58"N, 115°24'33.3"W ± 25 m, 109 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4004* (CAN, O); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, just above Bloody Falls, 67°44'22.6"N, 115°22'52"W ± 20 m, 40m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4111* (CAN, MO); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4264* (CAN, UBC); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4299a* (CAN, K, NY, QFA).

2847 ***Eriophorum triste*** (Th. Fr.) Hadač & Á. Löve, Fig. 27A, B—Tall cottongrass | Amphi-Beringian
2848 (E)–North American (N)–amphi-Atlantic (W) | Noteworthy Record

2849 This species is newly recorded for the study area. Our collections, from Fockler Creek and
2850 Kugluk (Bloody Falls) Territorial Park, close a gap between Bernard Harbour to the northwest,
2851 eastern Great Bear Lake, and central Nunavut (Porsild & Cody, 1980). See comments under *E.*
2852 *angustifolium*. This species is widespread across the Canadian Arctic Archipelago and is known
2853 from a few other sites on the mainland (Aiken et al., 2007; Cody & Reading, 2005; Porsild &
2854 Cody, 1980; Saarela et al., 2013a).

2855 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in
2856 valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone
2857 Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull*
2858 *3353* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side
2859 of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ±
2860 250 m, 110 m, 14 July 2014, *Saarela, Sokoloff & Bull 3990* (ALTA, CAN); Kugluk (Bloody
2861 Falls) Territorial Park, flat terrace just above S-facing cliffs above start of Bloody Falls, W side
2862 of Coppermine River, W side of Portage Trail, 67°44'41.3"N, 115°22'53.5"W ± 3 m, 65 m, 16
2863 July 2014, *Saarela*, *Sokoloff & Bull 40*87 (CAN, MO, MT, O).

2864 ***Eriophorum vaginatum*** L. subsp. ***vaginatum***, Fig. 27C—Sheathed cottongrass | European–
2865 Asian–amphi-Beringian–North American (NW)

2866 Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We were unable to
2867 locate the voucher for one of the earlier records (*Findlay 30*) for verification. We made
2868 collections in the vicinity of Fockler Creek and in Kugluk (Bloody Falls) Territorial Park.

Elsewhere in the Canadian Arctic this species has been recorded from Banks, Melville and Victoria islands and other mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1984; Porsild & Cody, 1980; Saarela et al., 2013a). Although they did not recognize them as such, records for Baffin Island (at least the southern ones) in Aiken et al. (2007) likely correspond to subsp. *spissum* (Fernald) Hultén.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 June 1951, *W.I. Findlay 2* (ACAD-30938, ALTA-VP-4270, DAO-174632 barcode 01-01000677851, UBC-V40772); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 259* (ALTA-VP-4269, DAO-174631 barcode 01-01000677397); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3305* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4055* (ALA, ALTA, CAN).

Trichophorum caespitosum (L.) Hartm. subsp. ***caespitosum***—Tufted bulrush | Circumboreal polar

Previously recorded from the study area (Porsild & Cody, 1980), as *Scirpus caespitosus* subsp. *austriacus*; we were unable to locate a voucher specimen. Elsewhere in the Canadian Arctic this species is recorded from southern Baffin Island and some mainland sites (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). The other subspecies is Atlantic European and does not reach the Arctic (Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 67.816667°N, 115.143889°W, 02 July 2008, *L.J. Gillespie, J.M. Saarela, L.M. Consaul & R.D. Bull 7459* (CAN-592566); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3127* (ALA, CAN, UBC); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3941* (ALTA, CAN, O).

Juncaceae [2/8]

Juncus alpinoarticulatus subsp. ***americanus*** (Farwell) Hämet-Ahti, Fig. 28A, C—Alpine rush | Amphi-Beringian–North American (N) | Noteworthy Record

Our collections are the first records of the taxon for mainland Nunavut. Elsewhere in Nunavut the taxon is recorded from Akimiski Island (Blaney & Kotanen, 2001) and an island in Long Island Sound along the east coast of Hudson Bay (*Hustich s.n.*, CAN-204979). The taxon was not recorded for Nunavut in several (mostly) earlier publications (Brooks & Clemants, 2002; Hämet-Ahti, 1986; Kirschner, 2002a; Porsild & Cody, 1980). We made three collections in Kugluk (Bloody Falls) Territorial Park, where the species grows on sandy, rocky beaches, mud flats and wet meadows, variously associated with *Artemisia tilesii*, *Chamerion latifolium*, *Equisetum arvense*, *Juncus arcticus*, *J. triglumis* subsp. *albescens*, and *J. leucochlamys*. We made a fourth collection further north along the south shore Heart Lake, where the species grows on a sandy, seasonally flooded beach with *Carex aquatilis* subsp. *stans*, *Eriophorum* spp., *Juncus arcticus* subsp. *alaskanus*, and *J. triglumis* subsp. *albescens*.

Juncus alpinoarticulatus is the correct name for plants that have been recognized as *J. alpinus* Vill., *nom. illeg.*, as in Porsild & Cody (1980) (Hämet-Ahti, 1980b). This northern temperate to boreal taxon is the common subspecies in North America, ranging from Greenland and northeastern North America to Colorado and Alaska, and to Kamchatka and Chukotka (Hämet-Ahti, 1986). The other North American taxon, *J. alpinoarticulatus* subsp. *fuscescens* (Fern.) Hämet-Ahti, has a restricted distribution from New York to Minnesota (Hämet-Ahti, 1986), and four other subspecies are recognized in Eurasia (Hämet-Ahti, 1980a). Brooks & Clemants (2002) do not recognize infraspecific taxa. We accept the taxonomy proposed by Hämet-Ahti (1986), at least for northern plants, as followed by Elven et al. (2011).

Subspecies *americanus* is a variable taxon with respect to plant size and the form and colour of the inflorescences; plants with dark flowers and short peduncles are more common in the western and northern parts of the North American range (Hämet-Ahti, 1986). Our collections are at the low end of this variation, ranging from 7–14 cm in height, with (1–)2–3(–4) heads, outside the low end of the range ("inflorescences of 5–25 heads") reported in Brooks & Clemants (2002), and partly inside the range of "(3–)10–20(–40)" reported by Hämet-Ahti (1986) and Kirschner (2002a). There are a few northern collections comprising plants with a similar short stature, few-heads and short peduncles, from Great Bear Lake (N shore of Smith Arm, Olmsted Bay, ca. 66°32'N, 122°35'W, *Porsild & Porsild 5075*, CAN-11365!, det. Hämet-Ahti 1986; head of Hornby Bay, NE end of McTavish Arm, 66°28'N, 118°05'W, *Shacklette 3170*, CAN-199937!, det. Hämet-Ahti 1986), Aubry Lake (67°20'N, 126°25'W, *Riewe & J. Marsh 425*, CAN-434768!, det. Hämet-Ahti 1986). These previous collections and our new ones are all from the northern limits of the taxon's range, and their reduced statures may simply reflect the harsh Subarctic to low Arctic environments in which they grow.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3858* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3969* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4118* (CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4294* (ALTA, CAN, O).

Juncus arcticus subsp. ***alaskanus*** Hultén, Fig. 28B—Arctic bog rush | Circumpolar-alpine | Noteworthy Record

Collections made in 1999 and 2013, and the ones reported here, are the first records of this taxon for the study area. We made collections at Fockler Creek, in Kugluk (Bloody Falls) Territorial Park and on an island at the mouth of the Coppermine River, and it has also been collected in Kugluktuk. The taxon was recently recorded at sites just outside the study area: the Big Bend area of the Coppermine River (Reading 35-1, DAO; Cody et al., 2003) and a site east of the confluence of the Coppermine and Kendall rivers (Reading 15B, DAO;Cody & Reading, 2005). Collectively these collections close a gap between Bernard Harbour, eastern Great Slave Lake, Bathurst Inlet and Hood River (Gould & Walker, 1997; Porsild & Cody, 1980). This western subspecies extends as far east as Bathurst Inlet and southeastern mainland Nunavut (Cody et al.,

2003; Kirschner, 2002b; Porsild & Cody, 1980). To the north it is recorded from Banks and Victoria islands (Aiken et al., 2007).

The name *Juncus balticus* subsp. *alaskanus* (Hultén) A.E. Porsild, *comb. illeg.*, as used by Porsild & Cody (1980), is a synonym of *J. arcticus* subsp. *alaskanus*, and the plants treated as boreal-distributed *J. balticus* var. *littoralis* Engelm. in Porsild & Cody (1980) are now recognized as *J. balticus* subsp. *ater* (Rydb.) Snogerup (a western race) and *J. balticus* subsp. *littoralis* (Engelm.) Snogerup (Kirschner, 2002b; Snogerup et al., 2002). Brooks & Clemants (2002) recognized three varieties of *J. arcticus* Willd. for North America: var. *arcticus*, var. *alaskanus* (Hultén) S.L. Welsh and var. *balticus* (Willd.) Trautv. Elven et al. (2011), following Kirschner (2002a) as we do here, recognized *J. balticus* as a predominantly non-Arctic taxon, and two subspecies of *J. arcticus* in North America: subsp. *arcticus* (Greenland and northeastern Canada) and subsp. *alaskanus* Hultén (northwestern Canada and Alaska).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23 June 1999, *C.L. Parker & I. Jonsdottir 9105* (ALA, as *Juncus arcticus*); Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0333* (BABY, det. *J. arcticus*, B.A. Bennett, July 2013); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3365* (CAN, QFA, US, WIN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3720* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3811* (CAN, MO); Kugluk (Bloody Falls)

Territorial Park, terrace above S-facing slopes above start of Bloody Falls, W side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 50 m, 68 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4091* (CAN, MT).

Juncus biglumis L. —Two-flowered bog rush | Circumpolar-alpine

Previously recorded from the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen. This is a rare species in the study area. We encountered the species at one site in Kugluk (Bloody Falls) Territorial Park, where it was scattered and uncommon in small mud boils in mesic low shrub tundra with *Betula glandulosa*, *Carex bigelowii*, *Eriophorum vaginatum* subsp. *vaginatum*, *Rhododendron lapponicum* and *Rumex arcticus*. In the Canadian Arctic it is widespread throughout the Canadian Arctic Archipelago and known from numerous mainland sites (Aiken et al., 2007; Cody et al., 1989; Hay & Payette, 2013; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4176* (CAN, UBC).

Juncus leucochlamys V.J. Zinger ex V.I. Krecz., Fig. S9—Chestnut rush | Asian (N/C)–amphi-Beringian–North America (N)–amphi-Atlantic (W)

Previously recorded from the study area, as *Juncus castaneus* Smith (Porsild & Cody, 1980), but we were unable to locate a voucher specimen. We made collections at Fockler Creek and in Kugluk (Bloody Falls) Territorial Park. In the Canadian Arctic it is recorded from Baffin, Devon, Ellesmere, Southampton and Victoria islands and numerous mainland sites (Aiken et al., 2007;

Cody & Reading, 2005; Cody et al., 1989; Hay & Payette, 2013; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy here follows Elven et al. (2010) and Elven et al. (2011), who recognize *J. leuchochlamys* and *J. castaneus* as distinct species, with only the former present in North America. This treatment contrasts with that of Kirschner (2002a), who recognized the taxa as infraspecific taxa (*J. castaneus* subsp. *castaneus* and subsp. *leucochlamys* (V.J. Zinger ex V.I. Krecz.) Hultén) as we did previously (Saarela et al., 2013a), and Brooks & Clemants (2002), who did not recognize infraspecific taxa in *J. castaneus* s.l.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3270* (CAN); gravel bar in Fockler Creek just above its confluence with Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'21.4"N, 115°38'54"W ± 5 m, 141 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3364* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3854* (ALTA, CAN).

Juncus triglumis subsp. ***albescens*** (Lange) Hultén—Northern white rush | Asian (N)–amphi-Beringian– North American (N)–amphi-Atlantic (W) | Circumpolar-alpine

Previously recorded from the study area, as *Juncus albescens* Lange (Porsild & Cody, 1980), but we were unable to locate a voucher specimen. We made collections in the vicinity of Fockler Creek and in Kugluk (Bloody Falls) Territorial Park. In the Canadian Arctic it is recorded from Baffin, Banks, Coats, Devon, Ellesmere, King William, Southampton and Victoria islands and

several mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Hay & Payette, 2013; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Elven et al. (2011) also recognized the taxon at species level, while Brooks & Clemants (2002) recognized the taxon as var. *albescens* Lange.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3229* (CAN); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3396* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3855* (ALA, CAN).

Luzula confusa Lindeb.—Northern wood rush | Circumpolar-alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Fockler Creek, the Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody et al., 1989; Hay & Payette, 2013; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], near old Eskimo [sic] site above Anglican Mission, [67°49’36”N, 115°5’36”W ± 1.5 km], 07 July 1958, *R.D. Wood s.n.* (CAN-265596); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ±

50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3120* (CAN, UBC); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3243* (ALTA, CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m, 422 m, 09 July 2014, *Saarela, Sokoloff & Bull 3748* (CAN, O); Kugluk (Bloody Falls) Territorial Park, NE-facing slope of large hill just S of Bloody Falls, W side of Coppermine River, 67°44'6.6"N, 115°23'13.4"W ± 50 m, 40 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3982* (CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4304* (CAN, MO, MT, US); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4373* (CAN).

Luzula groenlandica Böcher—Greenland woodrush | North American (N)

We made a single collection of this species. We found it growing west of Kugluktuk along a trail where it was locally common. It is similar to *L. multiflora* subsp. *frigida* (Buchenau) V.I. Krecz., which has a sympatric range (Brooks & Clemants, 2002; Porsild & Cody, 1980) across the mainland Canadian Arctic (Brooks & Clemants, 2002). Our collection may be the first confirmed record for the study area. The collection *Findlay 246* at DAO from Kugluktuk, published in Cody (1954b) as *L. nivalis*, was reported as *L. groenlandica* in Cody & Porsild (1968) and mapped as such in Porsild & Cody (1980). A duplicate of *Findlay 246* (ALTA-VP-4743) is determined as *L. multiflora* subsp. *frigida*. We were unable to locate the DAO sheet, and have not seen the ALTA sheet. If confirmed as *L. multiflora* subsp. *frigida* this would be the first record of the taxon for the study area. *Luzula groenlandica* is not recorded for the Canadian

Arctic Archipelago and is at the northern edge of its range in the study area. It has a scattered distribution across mainland Nunavut and there are several record from northern Quebec and Labrador (Hay & Payette, 2013; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: along ATV trail between Coronation Gulf and road from Kugluktuk to Heart Lake cemetery, 67°49'37.8"N, 115°10'31.8"W ± 500 m, 12 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4339* (CAN, UBC).

Luzula nivalis (Laest.) Spreng.—Arctic wood rush | Circumpolar-alpine

Previously recorded from the study area (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Hay & Payette, 2013; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], Coronation Gulf, at mouth of Coppermine River, [67.822146°N, 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3280* (CAN-199929); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 261* (DAO-176296 barcode 01-01000677830); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3246* (ALA, CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3518* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4059* (CAN, MO, MT, O).

3092 **Juncaginaceae [1/2]**

3093 ***Triglochin maritimum*** L.—Sea-side arrow-grass | Circumboreal–polar | Noteworthy Record

3094 Our collections are the first ones for the study area, where the species is at the northern edge of
3095 its range. We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and
3096 Kugluktuk. Porsild & Cody (1980) recorded the distribution of this taxon as barely extending
3097 north of the treeline and also mapped a site from the west side of Bathurst Inlet (*Kelsall &*
3098 *McEwen 107*, CAN-202950; *Kelsall & McEwan* 47, CAN-202949), an area where Bennett
3099 (2015) also recently recorded it. Gould & Walker (1997) recorded it along the lower Hood River.
3100 Haynes & Hellquist (2000a) included southeastern Nunavut in its range, where there are a few
3101 records (Cody, 1996a; Cody & Reading, 2005; Porsild, 1950b). The species was previously
3102 recorded from ca. 30 km west of the Coppermine River, just outside the study area (Reading 153,
3103 DAO; Cody & Reading, 2005). Further west, the species is known from several sites in Tuktut
3104 Nogait National Park and vicinity (Cody et al., 1992; Saarela et al., 2013a) and the Great Bear
3105 Lake area (Porsild, 1943; Porsild & Cody, 1980). This species is not recorded for the Canadian
3106 Arctic Archipelago and is recorded for a few southern Arctic sites in northern Quebec and
3107 Labrador (Hay, 2013).

3108 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: sedge meadow at S end of
3109 small lake, on flats NW of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine
3110 River, 67°26'1.8"N, 115°37'30.5"W ± 20 m, 170 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3231*
3111 (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody
3112 Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls,
3113 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3906* (CAN);

W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4271* (ALA, CAN).

Triglochin palustris L.—Marsh arrow-grass | Circumboreal–polar | Noteworthy Record

Our collections are the first records of the species for the study area and western Nunavut. We made collections in wet habitats (seeps, pond edges, upper edges of estuary) at Fockler Creek, Richardson Bay and Kugluk (Bloody Falls) Territorial Park. The nearest collections to the west are from the vicinity of Tuktut Nogait National Park, Northwest Territories (Saarela et al., 2013a). This species has a scattered distribution in Nunavut. In earlier works it was recorded for mainland Nunavut based on a record from Mistake Bay on the northwestern shore of Hudson Bay (Porsild, 1943; Porsild & Cody, 1980). This collection is not mapped in Haynes & Hellquist (2000a) even though the specimen was confirmed as this species by C. Hellquist prior to that publication. It has since been recorded form Bathurst Inlet (Scotter and Zoltai 31526, DAO; Bennett, 2015; Cody et al., 1984) and the lower Hood River (Gould & Walker, 1997). There are other unpublished collections at CAN from Bathurst Inlet (*Kelsall & McEwen 249*, CAN-202952; *Kelsall & McEwen 121*, CAN-202951) that are not mapped in Porsild & Cody (1980). Elsewhere in Nunavut this taxon was recently reported from Baffin Island, the first records for the Canadian Arctic Archipelago (Gillespie et al., 2015). It is also known from Akimiski Island (Blaney & Kotanen, 2001) and northern Quebec and Labrador (Hay, 2013).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull*

3258 (CAN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3672* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3861* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3975* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4129* (CAN).

Orchidaceae [2/2]

Corallorhiza trifida Châtel., Fig. S10—Northern coralroot, Early coralroot | Circumboreal–polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Melville Creek, Richardson Bay, Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The species was uncommon (only a few plants) wherever it was found. Elsewhere on mainland Nunavut it is recorded from numerous sites (Cody et al., 2003; Porsild & Cody, 1980). In the Canadian Arctic Archipelago it is known from southern Baffin Island and was recently recorded from Victoria Island north of the study area (Aiken et al., 2007; Gillespie et al., 2015). It is also recorded for Arctic areas of mainland Northwest Territories and northern Quebec and Labrador (Houle, 2013; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. Nunavut: Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 22 July 1951, *W.I. Findlay 165* (DAO-176782 barcode 01-

01000520765); Coppermine [Kugluktuk], Cemetery Island, 67°50'N, 115°7'W, 14 July 1951, *W.I. Findlay 119* (DAO-176765 barcode 01-01000520764); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3383* (CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3536* (CAN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3684* (CAN); Kugluk (Bloody Falls) Territorial Park, along Portage Trail at top of ridge on W bank of Coppermine River, near start of Bloody Falls rapids, 67°44'22.5"N, 115°22'40.6"W ± 10 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3931* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4159* (CAN); NW-facing moist to wet sedge meadow, drainage running into Coppermine River above Bloody Falls on SE side, 67°44'26.2"N, 115°22'11.8"W ± 15 m, 47 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4193* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4389* (CAN).

Platanthera obtusata (Banks ex Pursh) Lindl. subsp. ***obtusata***, Fig. S11—Northern rein orchid, Blunt leaved rein orchid | North American

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek, south of Escape Rapids, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Populations generally comprised scattered individuals growing

in low shrub tundra and wet sedge meadows. Porsild & Cody (1980) noted this species is pollinated by mosquitoes, and that mosquitoes are often seen with pollinia attached to their heads. Indeed, we observed mosquitoes with pollinia from this species on numerous occasions in Kugluk (Bloody Falls) Territorial Park. This is a boreal species that reaches the Low Arctic on the mainland (Bennett, 2015; Cody et al., 2003; Gould & Walker, 1997; Houle, 2013; Porsild & Cody, 1980; Saarela et al., 2013a) and southern Baffin Island, where it was recently recorded (Gillespie et al., 2015). It is not known from the rest of the Canadian Arctic Archipelago (Aiken et al., 2007) and is at the northern edge of its range in the study area. The taxon was recognized as *Habenaria obtusata* Banks ex Pursh in Porsild & Cody (1980) and *Lysiella obtusata* (Banks ex Pursh) Rydb. in Elven et al. (2011). Molecular phylogenetic work supports placement of the taxon in the genus *Platanthera* Rich. (Bateman et al., 2009). All North American plants are recognized as *P. obtusata* subsp. *obtusata*, while Eurasian plants are recognized as *P. obtusata* subsp. *oligantha* (Turcz.) Hultén (Sheviak, 2003) or as a species, *L. oligantha* (Turcz.) Nevski (=*P. oligantha* Turcz.) (Elven et al., 2011). Another species in the genus, the boreal *P. aquilonis* Sheviak —treated as *H. hyperborea* (L.) R. Br. in Porsild and Cody (1980), a taxon now restricted to Greenland (Sheviak, 2003) —was recently recorded from the Big Bend area of the Coppermine River, south of the study area (Reading 32-1, DAO; Cody et al., 2003). Although not stated in that publication, that record was the first one for mainland Nunavut. It is also recorded for Akimiski Island (Blaney & Kotanen, 2001).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 August 1951, *W.I. Findlay 251* (DAO-176720 barcode 01-01000677359); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 181* (DAO-176719 barcode 01-01000677809); Coppermine [Kugluktuk], 67°49’36”N,

115°5’36’’W, 02 August 1995, *T. Dolman 95* (LEA); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3400* (CAN); tundra below Tundra Lake and Fockler Creek, ca. 4.1 km SE of Sandstone Rapids, Coppermine River, 67°25'20.7"N, 115°34'17.2"W ± 25 m, 271 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3427* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3535* (ALA, CAN); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3620* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3866* (CAN, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4247* (CAN, MO).

Poaceae [17/39]

Agrostis mertensii Trin.—Northern bentgrass | Amphi-Pacific–North American (N)–amphi-Atlantic– European (N) | Noteworthy Record

Our single collection of this species from the Bigtree River, near the southern limit of the study area, represents a range extension to the northeast. The species was common in sandy soil along the river, growing with *Alnus alnobetula*, *Betula glandulosa*, *Bromus pumpellianus*, *Dasiphora fruticosa*, *Picea glauca* and *Salix alaxensis*. The nearest collections are from Great Slave Lake (Harvey, 2007; Porsild & Cody, 1980). Elsewhere in the Canadian Arctic it is recorded from the

Hood River (as *A. borealis* Harmt.) (Gould & Walker, 1997) and several sites on the southeastern mainland of Nunavut, southern Baffin Island and northern Quebec and Labrador (Porsild and Cody 1980) (Porsild, 1950b).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3601* (ALA, ALTA, CAN, MT, O, UBC, US).

Alopecurus borealis Trin., Fig. S12—Alpine foxtail | Circumpolar-alpine

Previously recorded from Kugluktuk and Escape Rapids (Cody, 1954b; Porsild & Cody, 1980). We made collections at Richardson Bay, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980). Taxonomy follows Elven et al. (2011), who recognized plants treated by some authors as the single polymorphic species *A. magellanicus* Lam. (Crins, 2007; Soreng, 2003a), as multiple species: *A. borealis*, *A. glaucus* Less., *A. rozhevitzianus* Ovcz. and *A. stejnegeri* Vasey. This taxon was treated as *A. alpinus* Sm. (published in 1803) in Porsild & Cody (1980); that name is illegitimate (non *A. alpinus* Vill. 1786) and the next available one is *A. borealis* (Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 25 August 1934, *A.H. Dutilly 160* (CAN-513320); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 8 July 1951, *W.I. Findlay 96* (ALTA-VP-1323, DAO-174384 barcode 01-01000677957, QFA0232183, UBC-V40766); Rae River, *s.d.*, *J. Richardson s.n.* (CAN-30525); Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 08 July 1958, *R.D. Wood s.n.* (CAN-265604); Escape Rapids, s.d., s.c. [Richardson?] (CAN-

229874); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3678* (CAN, MO, NY, QFA, US, WIN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3806* (ALA, CAN, US); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4216* (ALTA, CAN, O); grassy vacant lot in Kugluktuk, 67°49'30.5"N, 115°5'29.3"W ± 15 m, 21 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4346* (CAN, MT, UBC).

Anthoxanthum arcticum Veldkamp—Few-flowered arctic holy grass | Asian (N)–amphi-Beringian–North American (N) | Noteworthy Record

This species is newly recorded for the study area and our collection represents a southern range extension in the central part of the species' North American range, which primarily comprises the Canadian Arctic Archipelago (Aiken et al., 2007). On the mainland to the east it is known from the Hood River (Gould & Walker, 1997), the shores of Hudson Bay in Nunavut, Manitoba and Ontario, and to the west from Tuktut Nogait National Park and vicinity (Saarela et al., 2013a) and the Mackenzie Delta area (Allred & Barkworth, 2007; Korol, 1992; Porsild & Cody, 1980). Our collection was gathered in a mesic sedge meadow just beyond the southwestern boundary of Kugluk (Bloody Falls) Territorial Park, on a large upland plateau on the west side of the Coppermine River. The species was locally common growing with *Arctagrostis latifolia* subsp. *latifolia*, *Carex membranacea*, *Eriophorum triste* and *E. vaginatum*. Many recent authors (Allred & Barkworth, 2007; Soreng, 2003b)—but not all of them (Elven et al., 2011)—include

Hierochloe R.Br in *Anthoxanthum* L., a classification supported by molecular data (Pimentel et al., 2013). This species has traditionally been recognized as *Hierochloe pauciflora* R. Br.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°43'53.7"N, 115°24'31.4"W ± 3 m, 112 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4001* (CAN, UBC, US).

Anthoxanthum hirtum (Schrank) Y. Schouten & Veldkamp—Hairy sweetgrass | Circumboreal-polar | Noteworthy Record

This species is newly recorded for the study area and represents a range extension. We found the species at only one site. It was locally common on a south-facing slope above the Coppermine River, just outside Kugluktuk, growing with *Arnica angustifolia*, *Chamerion angustifolium*, *Poa glauca* subsp. *glauca* and *Potentilla* sp. The nearest record to the east is from the Hope Bay area northeast of Bathurst Inlet (Reading 317, DAO; Cody & Reading, 2005), a site well beyond the main range of the species and the only other record on mainland Nunavut (Allred & Barkworth, 2007). Elsewhere in Nunavut the species is recorded from Akimiski Island (Blaney & Kotanen, 2001) and other islands in Hudson Bay (Allred & Barkworth, 2007). It is not recorded for the Canadian Arctic Archipelago. The nearest collections to the southwest are from Great Slave Lake (Porsild & Cody, 1980) and to the west from the lower Brock River area. A collection our team made in 2009 in the vicinity of the Lower Brock River, Northwest Territories, was accidentally omitted from Saarela et al. (2013a), and is reported here. This taxon was treated as *Hierochloë odorata* (L.) Beauv. in Porsild & Cody (1980). In Elven et al. (2011) the plants fall under *Hierochloë odorata* subsp. *arctica* (J. Presl) Tzvelev (syn. *Anthoxanthum hirtum* subsp. *arcticum* (J. Presl) G.C. Tucker).

SPECIMENS EXAMINED: CANADA. **Northwest Territories**: vicinity of the Lower Brock River, west of Tuktut Nogait National Park, coastal area ca. 10 km N of Brock River delta, 69°36'16"N, 123°09'04"W, 0-10 m, *Gillespie*, *Consaul and Bull 9404* (CAN-594920). **Nunavut:** Kitikmeot Region: W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4260* (ALA, ALTA, CAN, UBC, US).

Anthoxanthum monticola subsp. ***alpinum*** (Sw. ex Willd.) Soreng—Alpine sweet grass | Circumpolar-alpine

Previously recorded from Kugluktuk as *Hierochloe alpina* (Sw.) Roem. & Schult. (Cody, 1954b; Porsild & Cody, 1980). We made collections of this species common to acidic substrates at Fockler Creek, Kendall River, Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. The taxon is widespread across the Canadian Arctic (Aiken et al., 2007; Bennett, 2015; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy here follows Allred & Barkworth (2007) and Elven et al. (2011), who recognize two subspecies. The other one, *A. monticola* (Bigelow) Veldkamp subsp. *monticola* has a more easterly distribution, occurring only as far west as the eastern side of Hudson Bay (Allred & Barkworth, 2007). Bennett (2015) recently reported subsp. *monticola* from sites on southern Victoria Island, representing a major range extension and the first records for the Canadian Arctic Archipelago.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 2 July 1951, *W.I. Findlay 70* (DAO-174258 barcode 01-01000677489); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 89* (DAO-174257 barcode 01-01000677485); Kugluktuk, airport, 67.816667°N, 115.143889°W,

02 July 2008, *L.J. Gillespie*, *J.M. Saarela*, *L.M. Consaul & R.D. Bull 7456* (CAN-592317); Coppermine [Kugluktuk], ridge above Eskimo [sic] camp west of DOT, [67°49'36"N, 115°5'36"W ± 1.5 km], 02 July 1958, *R.D. Wood s.n.* (CAN-265603); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3079* (CAN, O); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3112* (CAN, NY, QFA, US, WIN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3571* (CAN, MO); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3839* (ALA, ALTA, CAN, O, UBC, US); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4306* (ALA, ALTA, CAN, K, MO, MT, NY, O, QFA, UBC, US, WIN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4374* (CAN, MT, WIN).

Arctagrostis latifolia subsp. ***arundinacea*** (Trin.) Tzvelev —Reed polargrass | Asian (N)–amphi-Beringian | Noteworthy Record

This taxon is newly recorded for the study area. Our collections close a gap between the Brock Lagoon area, eastern Great Slave Lake, and a site near the coast just west of Bathurst Inlet, where the subspecies reaches its known eastern limit (Aiken & Lefkovitch, 1990; Saarela et al., 2013a). A record from southwestern Victoria Island is mapped in Aiken & Lefkovitch (1990) but

not in Aiken et al. (2007), who did not record subsp. *arundinacea* for the Canadian Arctic Archipelago. We collected this subspecies only from Kugluktuk; we did not collect subsp. *latifolia* there. Taxonomy here follows Aiken (2007). Elven et al. (2011) recognize *Arctagrostis latifolia* (R. Br.) Griseb and *Arctagrostis arundinacea* (Trin.) Beal at species level.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4252* (CAN, US); Kugluktuk, roadside and flats between buildings, 67°49'27.4"N, 115°5'26.2"W ± 25 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4393* (ALA, ALTA, CAN, O, UBC).

Arctagrostis latifolia (R. Br.) Griseb. subsp. ***latifolia*—**Polargrass, Arctic grass | Circumpolar-alpine

Previously recorded from the Rae River (Aiken & Lefkovitch, 1990; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park, Heart Lake and west of Kugluktuk. This subspecies is widespread throughout the Canadian Arctic (Aiken et al., 2007; Aiken & Lefkovitch, 1990; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). See comments regarding taxonomy under subsp. *arundinacea*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Rae River, [67°55'N, 115°30'W], *Richardson s.n.* (CAN-30955, mixed with *Calamagrostis stricta* subsp. *groenlandica*); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3168* (CAN, MO); ridge N of Fockler Creek, ca. 2.1 km SSE of Sandstone Rapids, Coppermine River, 67°25'54"N, 115°37'30"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3207*

(CAN, K, NY); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3323* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, along Portage Trail at top of ridge on W bank of Coppermine River, near start of Bloody Falls rapids, 67°44'22.5"N, 115°22'40.6"W ± 10 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3929* (CAN, WIN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4302* (ALA, CAN, UBC, US); manufactured gravel slopes around Kugluktuk's sewage retention pond, 5.16 km SW of Coppermine River, 67°48'52.38"N, 115°12'10.3"W ± 10 m, 35 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4331* (CAN, QFA).

Arctophila fulva (Trin.) Andersson, Fig. S13—Pendent grass | Circumpolar

Previously recorded from Bloody Falls (Cody, 1954b, as Colpodium fulvum (Trin.) Griseb.) but not mapped for the area in Porsild & Cody (1980) or Cayouette & Darbyshire (2007). We made collections of this aquatic grass at Kendall River, in the vicinity of Fockler Creek, Expeditor Cove, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic it is recorded from several Arctic islands (but not in the High Arctic) and scattered sites across the mainland (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls on Coppermine River, 67°44'N, 115°23'W, 27 July 1951, *W.I. Findlay 207* (ACAD-30930, DAO-172598 barcode 01-01000684828, QFA0232871, UBC-V40764); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), small ponds on flats adjacent to Coppermine River, 67°6'44.7"N, 116°8'6.1"W ± 100 m, 213 m, 07 July 2014, *Saarela*, *Sokoloff*

3381 *& Bull 3587* (ALA, CAN, UBC); E end of small, unnamed lake on W bank of Coppermine
3382 River, ca. 8.3 km NNE of Sandstone Rapids, 67°31'30.8"N, 115°36'16.1"W ± 50 m, 126 m, 08
3383 July 2014, *Saarela*, *Sokoloff & Bull 3659* (CAN, K, MT, NY, QFA, UBC, WIN); Coronation
3384 Gulf, NW peninsula of Expeditor Cove, ca. 9.6 km NW of Kugluktuk, 67°52'47.2"N,
3385 115°16'40.3"W ± 3 m, 17 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3699* (CAN, US); Kugluk
3386 (Bloody Falls) Territorial Park, confluence of small unnamed creek and W bay of Coppermine
3387 River, rocky beach just below Bloody Falls, 67°44'45.3"N, 115°22'19.6"W ± 4 m, 12 m, 13 July
3388 2014, *Saarela*, *Sokoloff & Bull 3909* (ALTA, CAN, MT, O, WIN); Kugluk (Bloody Falls)
3389 Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River,
3390 vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W
3391 ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4112* (ALA, ALTA, CAN, MO, MT, O,
3392 UBC, US); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of
3393 Coppermine River, 67°48'33.8"N, 115°12'52.9"W ± 15 m, 39 m, 23 July 2014, *Saarela*, *Sokoloff*
3394 *& Bull 4314* (CAN, K, NY, QFA, UBC); W of Kugluktuk on tundra flats above Coppermine
3395 River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8
3396 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4369* (ALA, ALTA, CAN, MT, US).

3397 ***Bromus pumpellianus*** Scribn.—Pumpelly's brome grass | European (NE)–Asian (N/C)–amphi-
3398 Beringian–North American

3399 Previously recorded from Kugluktuk and Bloody Falls (Cody, 1954b; Porsild & Cody, 1980).
3400 We made numerous collections of this rhizomatous grass at Fockler Creek, Melville Creek,
3401 Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This species is
3402 not recorded from the Canadian Arctic Archipelago and is known on the mainland Arctic from
3403 several sites, occurring as far east as Bathurst Inlet and a site along the Kazan River (Bennett,

2015; Porsild & Cody, 1980). It is at the northern edge of its range in the study area. We follow Saarela (2008) here and do not recognize infraspecific taxa in *B. pumpellianus* in North America. Elven et al. (2011) treated the species in the segregate genus *Bromopsis* (Dumort.) Fourr., a classification not supported by molecular data (Saarela et al., 2007). They recognized seven subspecies in *Bromopsis pumpelliana* (Scribn.) Holub, of which only one, *B. pumpellianus* subsp. *arctica* (Shear) Á. Löve & D. Löve, was recorded for the Canadian Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 25 August 1934, *A.H. Dutilly 232* (CAN-513847); Bloody Falls, 67°44'N, 115°23'W, 27 July 1951, *W.I. Findlay 208* (ACAD-30933, DAO-171833 barcode 01-01000677941, UBC-V40765); Kugluktuk Airport, near weather station, 67°49'1.3"N, 115°8'2.3"W ± 25 m, 27 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3106* (ALA, CAN, K, MO, O); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3143* (CAN, US); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3205* (CAN, NY, QFA, WIN); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3331* (CAN, UBC); confluence of Sleigh Creek and Coppermine River, 0.4 km N of Sandstone Rapids, 67°27'13.9"N, 115°38'7.7"W ± 25 m, 126 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3483* (CAN, MT); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3491* (ALTA, CAN, UBC, US); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July

2014, *Saarela*, *Sokoloff & Bull 3799* (CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, sandy rocky beach at W side of Bloody Falls, 67°44'27.8"N, 115°22'20.3"W ± 25 m, 5 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3912* (ALA, ALTA, CAN, UBC, US); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4261* (ALA, ALTA, CAN).

Calamagrostis canadensis subsp. ***langsdorffii*** (Link) Hultén—Langsdorff's reedgrass |Nearly circumboreal-polar | Noteworthy Record

Newly recorded from the study area, filling a gap in distribution between Tuktut Nogait National Park, eastern Great Bear Lake, Hood River and Bathurst Inlet (Bennett, 2015; Gould & Walker, 1997; Porsild & Cody, 1980; Saarela et al., 2013a). We made collections at Melville Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. In the park this taxon was common in the day-use area of the park, where it grew in the understory of the dense willow (*Salix glauca*) thickets and formed dense patches in areas cleared of willows for ATV trails. Elsewhere in the Canadian Arctic this taxon is recorded from southeastern mainland Nunavut, Bathurst Inlet, southern Baffin Island and one site in Tuktut Nogait National Park (Aiken et al., 2007; Bennett, 2015; Porsild, 1950b; Porsild & Cody, 1980; Saarela et al., 2013a). It is at the edge of its range in the study area. This northern race of the widespread *C. canadensis* (Michx.) P. Beauv. is recognized as var. *langsdorffii* (Link) Inman in Marr et al. (2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3514* (CAN, US); Kugluk (Bloody Falls)

Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 20 July 2014, *Saarela*, *Sokoloff & Bull 4232* (CAN, UBC); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4360* (ALA, ALTA, CAN).

Calamagrostis lapponica (Wahlenb.) Hartm.—Lapland reedgrass | Circumboreal-polar | Noteworthy Record

Newly recorded from the study area, filling a distribution gap between eastern Great Bear Lake, Bathurst Inlet and a Subarctic site on September (Mouse) Lake, just west of the Coppermine River outside the study area (*Reading 115*, DAO) (Cody & Reading, 2005; Porsild & Cody, 1980). Elsewhere in Nunavut it is recorded from sites on the eastern mainland and near Iqaluit (Aiken et al., 2007; Cody & Reading, 2005; Porsild, 1950b; Porsild & Cody, 1980). Bennett (2015) recently reported an observation of this species from a site west of Hope Bay on southern Victoria Island, but he did not make a collection. If confirmed, this species would be newly recorded for Victoria Island and the western Canadian Arctic Archipelago. We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. This grass is locally common in the disturbed day-use area of Kugluk (Bloody Falls) Territorial Park. It is at the northern edge of its range in the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3142* (CAN, US); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3838* (CAN, UBC); Kugluk (Bloody Falls)

Territorial Park, along wet, muddy, and deeply pitted ATV trail ca. 1 km W of Bloody Falls, 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4101* (ALTA, CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4301* (ALA, CAN, MT, O).

Calamagrostis purpurascens R. Br. subsp. ***purpurascens***, Fig. S14—Purple reedgrass | Asian (NE)–amphi-Beringian–Cordilleran–North American–amphi-Atlantic (W)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections from Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic the taxon is recorded from Baffin, Banks, Ellesmere, Melville and Victoria islands, a few sites on mainland Northwest Territories, and Bathurst Inlet (Aiken et al., 2007; Bennett, 2015; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Elven et al. (2011) who recognize two subspecies in *C. purpurascens*: the widespread subsp. *purpurascens*, and the northeastern North American subsp. *laricina* (Louis-Marie) Elven (also see Elven & Murray, 2008). Other authors do not recognize infraspecific taxa (Marr et al., 2007; Porsild & Cody, 1980). This variation requires further study. *Calamagrostis purpurascens* was described by Brown in Richardson (1823) based on material collected between Point Lake and the Arctic coast (i.e., along the Coppermine River), possibly from within the study area (type/possible type material BM001042267, NY00029601).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 31 July 1951, *W.I. Findlay 217* (DAO-138225 barcode 01-01000677942); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42

m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3080* (CAN, US); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3126* (ALTA, CAN, O); second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3214* (CAN, MO, MT); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3476* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3800* (CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4078* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4262* (CAN, QFA, WIN); rocky cliffs on S side of Kugluktuk, 67°49'13"N, 115°5'55.8"W ± 50 m, 65 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4402* (ALA, CAN).

Calamagrostis stricta subsp. ***groenlandica*** (Schrank) Á. Löve, Fig. 29—Slim-stemmed reedgrass | Circumpolar | Noteworthy Record

Newly recorded for the study area. Our collections, which were gathered from Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park, close a gap between southwestern Victoria Island, eastern Great Bear Lake and Bathurst Inlet (Aiken et al., 2007; Cody et al., 1984; Porsild & Cody, 1980). The taxon was recognized as *C. neglecta* G. Gaertn., B. Mey. & Scherb.

s.l. by Porsild & Cody (1980) and *C. neglecta* subsp. *groenlandica* (Schrank) Matuszk by Elven et al. (2011) and Aiken et al. (2007), who recorded it in the Canadian Arctic Archipelago from Banks, Melville and Prince Patrick islands. A collection from Rae River (CAN-30955), gathered by J. Richardson, is part of a mixed sheet with *Arctagrostis latifolia* subsp. *latifolia*. The identification on the original label is *Calamagrostis stricta*. The *Calamagrostis* plant bears a note "too young for determination. Habit of C. purpurascens", in what appears to be Porsild's hand. The specimen has short awns and better fits *C. stricta* subsp. *groenlandica*. We cannot be sure that the specimen is from the mouth of the Rae River (and thus part of the study area), so it is not included here.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3174* (CAN, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3498* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3797* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3905* (CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4086* (CAN).

Calamagrostis stricta (Timm) Koeler subsp. ***stricta*****—**Slim-stemmed reedgrass | Circumboreal-polar | Noteworthy Record

Newly recorded for the study area. We made two collections from the river-side beach in Kugluk (Bloody Falls) Territorial Park, where the taxon was growing with *Artemisia tilesii*, *Chamerion latifolium*, *Equisetum arvense* subsp. *alpestre* and *Salix planifolia*. These represent a minor range extension from a site ca. 30 km east of the Coppermine River in the Arctic ecozone (Reading 110, DAO; Cody & Reading, 2005). This subspecies is not recorded for the Canadian Arctic Archipelago, and is at the northern edge of its range in the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4125* (CAN, UBC, US); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4132* (CAN).

Deschampsia brevifolia R. Br., Fig. 30A—Arctic hairgrass | Asian (N)–amphi-Beringian–North American (N)

Previously recorded from Bloody Falls (Cody, 1954b; Porsild & Cody, 1980). This is a rare species in the study area. We encountered it only once, in Kugluk (Bloody Falls) Territorial Park along a wet and deeply pitted ATV trail (likely due to melting permafrost) growing in luxuriant grass and sedge vegetation with *Arctagrostis latifolia* subsp. *latifolia*, *Bistorta vivipara*, *Poa arctica* subsp. *arctica*, *Juncus leuchochlamys* and *Salix* spp. Elsewhere on mainland Nunavut it

is known from only three other collections (Cody, 1996a; Porsild & Cody, 1980), and is widespread throughout most of the Canadian Arctic Archipelago, but apparently rare on most of Baffin Island (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls on Coppermine River, 67°44'N, 115°23'W, 27 July 1951, *W.I. Findlay 206* (DAO-174161 barcode 01-01000679243); Kugluk (Bloody Falls) Territorial Park, along wet, muddy, and deeply pitted ATV trail ca. 1 km W of Bloody Falls, 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4098* (CAN, UBC, US).

Deschampsia cespitosa (L.) P. Beauv. subsp. ***cespitosa*—**Tufted hairgrass | Circumboreal

Previously recorded from the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen. We made collections in the vicinity of Fockler Creek, Coppermine Mountains, Kendall River, and Kugluk (Bloody Falls) Territorial Park. One collection placed here (no. 4217) is intermediate between *Deschampsia cespitosa* subsp. *cespitosa* and *D. brevifolia*, following the circumscriptions in Barkworth (2007). The plant has narrow inflorescences (ca. 2 cm wide at anthesis) with spikelets densely clustered at the ends of the branches, like *D. brevifolia*, and glumes and lemmas purple proximally for less than ½ of their surface, usually with a green base, like subsp. *cespitosa*. The plants have dehiscing anthers and thus are not considered to be a hybrid. This intermediacy is consistent with the recommendation of Chiappela et al. (2011) that *D. brevifolia* be treated as an infraspecific taxon of *D. cespitosa*. However, the name *D. cespitosa* subsp. *brevifolia* (Griseb.) Tzvelev is illegitimate (Elven et al., 2011). Pending clarification of this nomenclatural issue we treat both taxa at the species level. The species is not recorded for the Canadian Arctic Archipelago in Aiken et al. (2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Sleigh Creek and Coppermine River, 0.4 km N of Sandstone Rapids, 67°27'13.9"N, 115°38'7.7"W ± 25 m, 126 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3480* (ALTA, CAN, MO, MT, O, UBC, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3506* (ALA, CAN, K); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3581* (CAN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N, 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3739* (ALA, ALTA, CAN, MO, MT, O, UBC, US, WIN); Kugluk (Bloody Falls) Territorial Park, sandy rocky beach at W side of Bloody Falls, 67°44'27.8"N, 115°22'20.3"W ± 25 m, 5 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3914* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3972* (ALA, CAN, K, MO, NY, QFA, UBC, US); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4119* (CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4122* (CAN, MT, WIN); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4217* (ALA, ALTA, CAN, UBC).

Deschampsia sukatschewii subsp. ***borealis*** (Trautv.) Tzvelev—Hairgrass | Circumpolar | Noteworthy Collection

This is the first report of this species from the study area and western mainland Nunavut, closing a large gap between Tuktut Nogait National Park and southeastern mainland Nunavut (Barkworth, 2007; Porsild & Cody, 1980; Saarela et al., 2013a). Our collection was gathered along the disturbed slopes of the Coppermine River upstream from Sandstone Rapids, in the vicinity of Fockler Creek, growing with *Arnica angustifolia*, *Betula glandulosa*, *Bromus pumpellianus*, *Dasiphora fruticosa*, *Equisetum arvense* subsp. *alpestre*, *Hedysarum americanum* and *Salix* spp. Barkworth (2007), the treatment we used to key our *Deschampsia* P. Beauv. collections, did not recognize infraspecific taxa in *D. sukatschewii*. Elven et al. (2011) recognized the taxon with three subspecies including two recorded in Canada, subsp. *borealis* and subsp. *orientalis* (Hultén) Tzvelev. Chiapella et al. (2011) suggested the name *D. sukatschewii* is misapplied in the North American Arctic. Some authors have recognized the taxon as *D. pumila* (Griseb.) Ostenf. (Hultén, 1968; Porsild & Cody, 1980), an illegitimate homonym. According to the map in Aiken et al. (2007) this species is recorded from Banks, Baffin, Devon, Ellesmere, Prince Charles and Prince Patrick islands, and a few mainland sites.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3392* (ALA, CAN, K, O, QFA, UBC).

Dupontia fisheri R. Br.—Fisher's tundra grass | Circumpolar

Previously recorded from Kugluktuk (Cody, 1954b) but this is not mapped in Porsild & Cody (1980). We made collections at Richardson Bay, an island at the mouth of the Coppermine River, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Morphological and molecular evidence supports recognition of a single species in the *D. fisheri* complex (Brysting et al., 2003; Brysting et al., 2004), and we follow this treatment. Elven et al. (2011) provisionally recognize three morphological variants that correspond to tetraploids, octoploids, and dodecaploids, all of which are present in the Canadian Arctic. The species is widespread throughout the Canadian Arctic Archipelago and is recorded from several mainland sites (Aiken et al., 2007; Cody, 1996a; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], near mission, 67°50'N, 115°7'W, 30 July 1951, *W.I. Findlay 210* (DAO-172725, not seen); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 31 July 1951, *W.I. Findlay 215* (ACAD-30934, ALTA-VP-1781, DAO-172726, UBC-V40768); Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0633* (ALA, BABY, det. B.A. Bennett, 2013); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3688* (ALA, CAN, US); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3712* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, stream bed in deep gully, 0.75 km W of Bloody Falls, 67°44'40.2"N, 115°23'17.3"W ± 3 m, 46 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4021* (ALTA, CAN, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4265* (CAN, NY, QFA, UBC, US, WIN);

flats below large overhanging cliffs above Coppermine River, just S of Kugluktuk, 67°48'56.7"N, 115°6'22.6"W ± 10 m, 2 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4408* (CAN, MO, MT).

Elymus alaskanus (Scribn. & Merr.) Á. Löve subsp. ***alaskanus***, Fig. 30B, C—Alaska wildrye | Amphi-Beringian (E) | Noteworthy Record

This is the first report of this taxon for the study area and western mainland Nunavut. A collection made by B. Bennett in 2013 at the Kugluktuk Airport was initially determined as *E. violacues*, but better fits *E. alaskanus* (most glumes about half the length of the spikelet). We made collections at Fockler Creek, Coppermine Mountains and Kugluk (Bloody Falls) Territorial Park. The nearest collections to the west are from Tuktut Nogait National Park and vicinity (Saarela et al., 2013a) and to the east from the junction of Baillie and Back rivers (*Tener 360* in 1955, CAN-235418, det. J.M. Saarela 2011), a collection not mapped in Porsild and Cody (1980) or Barkworth et al. (2007). Taxonomy follows Barkworth et al. (2007). Porsild and Cody (1980) included this taxon in their concept of *Agropyron violaceum* (Hornem.) Lange subsp. *violaceum*, a taxon treated here as *Elymus violaceus*. Aiken et al. (2007) recognized *E. alaskanus* s.l. in the Canadian Arctic Archipelago.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0328* (ALA); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3191* (CAN, MO, MT, O); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'21.4"N, 115°38'54"W ± 5 m, 140 m, 04 July 2014, *Saarela*,

Sokoloff & Bull 3357 (CAN, NY, QFA, WIN); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3473* (ALA, ALTA, CAN, O, UBC, US); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3762* (CAN, UBC, US); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3937* (ALA, ALTA, CAN).

Elymus alaskanus subsp. ***hyperarcticus*** (Polunin) Á. Löve & D. Löve—Tundra wildrye | Asian (N/C)–amphi-Beringian–North American (N) | Noteworthy Record

Our collections are the first records for the study area, and close a gap between sites on the Kent Peninsula (*Hoare 1512*, CAN-203806, det. J.M. Saarela 2011), southern Victoria Island (specimens at CAN) and eastern Great Slave Lake (*Porsild & Porsild 4821*, CAN-203085, det. J.M. Saarela 2011). We made collections at Big Creek and Kugluk (Bloody Falls) Territorial Park. Taxonomy follows Barkworth et al. (2007). The taxon was treated as *Agropyron violaceum* var. *hyperarcticum* Polunin by Porsild & Cody (1980), who mapped only *A. violaceum* s.l. Aiken et al. (2007) recognized *E. alaskanus* s.l.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3549* (CAN, MO, MT, O); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small

unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3908* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, sandy rocky beach at W side of Bloody Falls, 67°44'27.8"N, 115°22'20.3"W ± 25 m, 5 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3915* (CAN, NY, QFA, UBC, US, WIN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4131* (ALA, ALTA, CAN).

Elymus violaceus (Hornem.) Feilberg, Fig. 31A—High wildyre | North American (N) | Noteworthy Record

This is the first report of the taxon for the study area. We made two collections in the vicinity of Bloody Falls. At a site in Kugluk (Bloody Falls) Territorial Park we found a single large cespitose plant growing on a gradual southeast-facing slope above a small creek running into the Coppermine River through a deep gully, growing with *Equisetum arvense*, *Salix niphoclada* and *Symphyotrichum pygmaeum*. At a site on the east side of the Coppermine River just before the start of Bloody Falls, outside the Park boundary, the species was locally common on the wet clay slopes and beach along the river, growing with *Alopecurus borealis*, *Deschampsia cespitosa* subsp. *cespitosa*, *Equisetum arvense* subsp. *alpestre*, *Festuca rubra* subsp. *arctica*, *Hordeum jubatum* subsp. *intermedium*, *Juncus arcticus* subsp. *alaskanus* and *Poa pratensis* subsp. *alpigena*. It was recently recorded from a nearby site ca. 30 km west of the Coppermine River (Reading 97a, DAO; Cody & Reading, 2005). The nearest sites are from Bathurst Inlet (*Anderson s.n.*, CAN-203108, det. J.M. Saarela 2011), Hood River (Gould & Walker, 1997) and the McTavish Arm of Great Bear Lake (*Shacklette 2876*, CAN-200030, det. J.M. Saarela 2011). Taxonomy follows Barkworth et al. (2007) and Elven et al. (2011), who recognize this taxon at

the species level. Harrison & Hebda (2011) suggested *E. violaceus* should be treated as a subspecies of *E. alaskanus*, with the correct name being *E. alaskanus* subsp. *latiglumis* (Scribn. & J.G. Sm.), while Campbell and Soreng in Soreng et al. (2003) treated it as *E. trachycaulus* subsp. *violaceus* (Hornem.) Á Löve & D. Löve. Aiken et al. (2007) included this species in their concept of *E. alaskanus* s.l.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, below Bloody Falls, 67°45'7.3"N, 115°22'20.1"W ± 3 m, 12 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4138* (ALA, ALTA, CAN, MO, O, UBC); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4218* (CAN, US).

Festuca altaica Trin., Fig. 31B, C—Altai fescue, rough fescue | Amphi-Beringian & North American (NE) | Noteworthy Record

Our collections are the first record of the species for Nunavut (Aiken & Darbyshire, 1990; Darbyshire & Pavlick, 2007; Pavlick & Looman, 1984; Porsild & Cody, 1980) and represent an eastern range extension from the nearest collections from Great Bear Lake (Porsild, 1943; Porsild & Cody, 1980). We did not encounter it further north than Kugluk (Bloody Falls) Territorial Park. At the four sites where we collected the species, it was common to locally common, growing in dense shrub tundra, open meadows and disturbed slopes, with *Arnica angustifolia*, *Betula glandulosa*, *Bromus pumpellianus*, *Equisetum arvense* subsp. *alpestre*, *Dasiphora fruticosa*, *Juniperus communis* subsp. *depressa*, *Lupinus arcticus*, *Pyrola grandiflora and Shepherdia canadensis*. This amphi-Beringian species also reaches the Canadian Low Arctic

in Tuktut Nogait National Park and vicinity, Northwest Territories, and northern Yukon (Porsild, 1943; Porsild & Cody, 1980; Saarela et al., 2013a). It does not occur in the Canadian Arctic Archipelago.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3194* (ALA, ALTA, CAN, K, NY, QFA, UBC); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3384* (CAN, K, MO, MT, NY, O, QFA, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3500* (ALTA, CAN, UBC, US); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3910* (ALA, CAN, MO, MT, O, WIN).

Festuca baffinensis Polunin—Baffin Island fescue | Asian (NE)–Amphi-Beringian–North American–amphi-Atlantic

This species has been mapped for the study area in two publications (Aiken & Darbyshire, 1990; Porsild & Cody, 1980). The only early collection of this taxon from the study area we located was collected at Rae River, and we assume this is the one that has been mapped for the region. The specimen bears the following handwritten note: “This came from the Brit. Museum with a lot of duplicates of Richardson. It was labelled Rae River but Richardson was never there so that it was probably collected by Parry or some other early explorer. Rae River is N.W. from

Southampton Island." B. Bennett collected the taxon at the Kugluktuk Airport in 2013. We did not encounter the species in 2014. The species is widespread throughout the Canadian Arctic Archipelago and is known from several mainland Arctic sites (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0631* (CAN); Rae River, *s.d.*, *s.c.* [Richardson?] (CAN-503878).

Festuca brachyphylla Schult. & Schult. f. subsp. ***brachyphylla*—**Alpine fescue | Circumpolar–alpine

Previously reported for the study area in Porsild & Cody (1980) but not in Aiken & Darbyshire (1990), in which the nearest mapped record is from Bernard Harbour. We were unable to locate any earlier collections from the study area. We made collections at Kugluktuk, Fockler Creek, Bigtree River, Kugluk (Bloody Falls) Territorial Park and Heart Lake. The species is widespread throughout the Canadian Arctic Archipelago and is known from several mainland Arctic sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3077* (CAN, UBC); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3117* (ALA, CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m,

02 July 2014, *Saarela*, *Sokoloff & Bull 3182* (ALA, ALTA, CAN, MO, MT, O, QFA, UBC, US, WIN); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'34.8"N, 115°33'27.8"W ± 20 m, 265 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3436* (CAN); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3605* (ALTA, CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m, 422 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3752* (CAN, O); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3804* (CAN, MO, MT); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4300* (CAN, UBC, US).

Festuca rubra subsp. ***arctica*** (Hack.) Govor—Richardson's red fescue | Circumpolar

Previously recorded for the study area in Aiken & Darbyshire (1990) but not in Porsild & Cody (1980), in which the nearest mapped record is from Bernard Harbour. We were unable to locate any earlier collections from the study area. We made collections at Fockler Creek, Sandstone Rapids, Melville Creek and Kugluk (Bloody Falls) Territorial Park. Taxonomy follows Darbyshire & Pavlick (2007). Elven et al. (2011) treated the taxon as *F. rubra* subsp. *richardsonii* (Hook.) Hultén, noting *arctica* may be the correct name at subspecific rank but the type of the basionym, *F. rubra* f. *arctica* Hack., is unknown. Aiken & Darbyshire (1990) treated the taxon as *F. richardsonii* Hook. In the Canadian Arctic this species is known from the western Arctic islands (Banks, Melville and Victoria islands) as well as sites on the mainland (Yukon,

Northwest Territories, Nunavut, northern Quebec) (Aiken & Darbyshire, 1990; Bennett, 2015; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk Airport, near weather station, 67°49'1.3"N, 115°8'2.3"W ± 25 m, 27 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3107* (CAN, UBC, US); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3382* (CAN, MT, UBC, US); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3477* (CAN, NY, QFA, WIN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3510* (ALA, ALTA, CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3801* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3798b* (CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, terrace above S-facing slopes above start of Bloody Falls, W side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 50 m, 68 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4092* (CAN, MT, UBC, US, WIN).

Festuca rubra L. subsp. ***rubra*****—**Red fescue | Circumboreal-polar | Noteworthy Record

This taxon has not previously been collected in the study area, and our collections fill in a large distribution gap between Bathurst Inlet, Hood River, Great Slave Lake and the Mackenzie Delta

region (Aiken & Darbyshire, 1990; Gould & Walker, 1997; Porsild & Cody, 1980). Porsild and Cody's (1980) map does not distinguish between *F. rubra* subsp. *rubra* and *F. rubra* subsp. *arctica*, which they treated as *F. rubra* subsp. *richardsonii*, although the same gap is largely present, with the exception of a record along the coast intermediate between these sites that is probably subsp. *arctica*. Two of our collections (nos. 4398 and 4392) were large vigorous plants [e.g., 4398 to ca. 70 cm] gathered in Kugluktuk in highly disturbed areas where they may have been planted, while 3798a was collected in a natural but heavily human-used area: the rocky cliffs and ledges directly above (west side) of Bloody Falls, growing with *Anthoxanthum monticola* subsp. *alpinum*, *Arnica angustifolia*, *Calamagrostis purpurascens*, *Dryopteris fragrans*, *Poa glauca* subsp. *glauca*, *Potentilla* spp. and *Saxifraga tricuspidata*. Subspecies *rubra* differs from subsp. *arctica* by the vestiture of their spikelets: densely pubescent in subsp. *arctica* vs. glabrous to scabrous (scabridulous in our plants) in subsp. *rubra*. This subspecies is known from a few other Canadian Arctic sites, including Baffin Island (Iqaluit and Clyde River), Eglinton Island (needs confirmation) and a few scattered mainland sites (Aiken et al., 2007; Aiken & Darbyshire, 1990). Other Arctic communities should be searched for this introduced grass species.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3798a* (CAN, UBC, US); grassy yard in Kugluktuk, 67°49'27.4"N, 115°5'26.2"W ± 3 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4392* (ALA, ALTA, CAN, MO, MT, O); Kugluktuk, ball diamond on S side of town, 67°49'23.2"N, 115°6'31.9"W ± 5 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4398* (CAN, K, NY, QFA, UBC, US, WIN).

Festuca viviparoidea Krajina ex Pavlick subsp. ***viviparoidea***, Fig. 32A—Viviparous fescue | Amphi-Atlantic– European (N)–Asian (NW) & amphi-Beringian| Noteworthy Record

This species is newly recorded for the study area. Our collection is the first from mainland Nunavut and represents an eastern range extension from the nearest sites in Tuktut Nogait National Park and vicinity (Saarela et al., 2013a). It was growing on rocky ledges above the start of Bloody Falls rapids with *Anthoxanthum monticola* subsp. *alpinum*, *Arnica angustifolia*, *Calamagrostis purpurascens*, *Dryopteris fragrans*, *Poa glauca* subsp. *glauca*, *Potentilla arenosa* subsp. *arenosa*, *P. nivea* and *Saxifraga tricuspidata*, adjacent to our collection site of *Allium schoenoprasum* in the park. Elsewhere in Nunavut this taxon is known from northern Ellesmere Island (Aiken et al., 2007; Aiken & Darbyshire, 1990) and the Belcher Islands (*Consaul et al. 4045*, *4023*, *4112*, CAN). In Northwest Territories it is also known from the southernmost tip of Banks Island (*Gillespie et al. 7204*, *7239*,CAN). It is also recorded from Arctic Yukon (Aiken & Darbyshire, 1990, as Festuca vivipara subsp. glabra Fred.). The name *F. vivipara* has been misapplied in North America. Our collection matches the descriptions in Aiken & Darbyshire (1990: 77) and Darbyshire & Pavlick (2007), with the exception of the culms immediately below the inflorescence, which are glabrous, not sparsely to densely pubescent as described for the taxon. The other subspecies, *F. viviparoidea* subsp. *krajinae* Pavlick, has a more southerly distribution in alpine areas of western Canada and Alaska (Darbyshire & Pavlick, 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3938* (ALA, CAN, UBC).

Hordeum jubatum subsp. ***intermedium*** Bowden, Fig. 32B, C—Intermediate barley | North America | Noteworthy Record

Our collections are the first records of the species for the study area and fill a gap between Bathurst Inlet, upper Hood River and Great Bear Lake (Gould & Walker, 1997; Porsild & Cody, 1980). The distribution and taxonomy of *H. jubatum* in the Canadian Arctic is reviewed in Gillespie et al. (2015), though they did not include the report from Hood River (Gould & Walker, 1997). Elven et al. (2011) recognized only *H. jubatum* L. subsp. *jubatum* as part of the Panarctic flora. In the Canadian Arctic subsp. *intermedium* is known from Bathurst Inlet and southern Baffin Island. The Hood River record(s) are only determined to species in Gould & Walker (1997). On mainland Nunavut the species is also recorded from the Nueltin Lake area where it was growing near a building (Porsild, 1950b; Porsild & Cody, 1980). This taxon is not common in the study area. We encountered a large population in wet clay substrate on a slope running into and along the river bank just above Bloody Falls on the east side of the Coppermine River, where the species appears to be native, growing with *Alopecurus magellanicus*, *Juncus arcticus* subsp. *alaskanus*, *Carex aquatilis* subsp. *stans*, *Deschampsia cespitosa*, *Equisetum arvense* subsp. *alpestre*, *Festuca rubra* subsp. *arctica*, and *Poa pratensis* subsp. *alpigena*. At beach sites below Bloody Falls, within the park, the taxon was rare; we observed only a few plants there. These likely originated from the large population upstream on the other side of the river. It was also growing sporadically throughout Kugluktuk along disturbed roadsides where it may have been introduced unintentionally, with *Leymus mollis* subsp. *villosissimus* and *Taraxacum* spp.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N,

115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3973* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4133* (CAN); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4213* (ALA, ALTA, CAN, MO, MT, O, UBC); roadside and grassy area around buildings in Kugluktuk, 67°49'34"N, 115°5'27.1"W ± 20 m, 16 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4347* (CAN, UBC, US).

Leymus mollis (Trin.) Pilg. subsp. ***villosissimus*** (Scribn.) Á. Löve & D. Löve, Fig. 33—Sea lyme-grass, American dune grass | Asian (NE)–amphi-Beringian–North American (N)

Previously recorded from Kugluktuk (Barkworth & Atkins, 1984; Bowden, 1957; Cody, 1954b; Porsild & Cody, 1980). All but one of our collections were made along the coast at Richardson Bay, Kugluktuk and an island in the mouth of the Coppermine River. We found a single, large population inland at the base of steep sandy banks along a braided stream in a deep gully just west of the Kugluk (Bloody Falls) Territorial Park boundary. Gould & Walker (1997) also recorded this species (but the other subspecies, as *Elymus arenarius* subsp. *mollis* (Trin.) Hultén) at inland sites along the Hood River in Nunavut. The taxon was previously recognized in the genus *Elymus* L. (Bowden, 1957; Porsild & Cody, 1980). The collection *Findlay 244* at DAO is intermediate between this subspecies and *L. mollis* subsp. *mollis* (ACAD, ALTA and UBC sheets not seen). Intermediates from elsewhere are reported in Bowden (1957). In the Canadian Arctic this subspecies is recorded from Banks, Baffin, King William, Southampton and Victoria islands, and numerous mainland sites (Aiken et al., 2007; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 25 August 1934, *A.H. Dutilly 233 (36)* (CAN-514252); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 1* (CAN-40050); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 August 1951, *W.I. Findlay 244* (ACAD-30936, ALTA-VP-1868, DAO-172957 barcode 01-01000172957, UBC-V40770); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3677* (CAN, MO, MT, US); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3710* (ALA, CAN); deep gully in sand hills, NW of Bloody Falls, 67°45'22.8"N, 115°22'56.9"W ± 3 m, 42 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4174* (CAN, NY, QFA, WIN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4253* (ALTA, CAN, O); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4303* (CAN, K, UBC, US).

Phippsia algida (Sol.) R. Br.—Icegrass | Circumpolar | Noteworthy Record

Our collection, from Kugluk (Bloody Falls) Territorial Park, is the first record of the species for the study area and the central mainland Arctic. Elsewhere on mainland Nunavut there are three more easterly collections, and the nearest mainland sites to the west are from the Mackenzie Delta area (Cody et al., 1989; Consaul & Aiken, 2007; Porsild & Cody, 1980). The plants were uncommon and grew on a sandy, rocky beach with *Artemisia tilesii*, *Chamerion latifolium*, *Equisetum arvense* subsp. *alpestre* and *Salix planifolia*. The species is widespread throughout the

Canadian Arctic Archipelago and is recorded for northern Quebec and Labrador (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4123* (CAN, UBC).

Poa alpina L., Fig. 34A, B—Alpine bluegrass | Amphi-Beringian–North American–amphi-Atlantic–European–Asian (NW-C) | Noteworthy Record

Our collections are the first ones of the species for the study area. We made collections at Fockler Creek, Sandstone Rapids, Melville Creek, Heart Lake and Kugluktuk. There are scattered collections of this species from mainland Nunavut and a few from the western Canadian Arctic Archipelago (Aiken et al., 2007; Bennett, 2015; Cody & Reading, 2005; Cody et al., 1984; Gould & Walker, 1997; Korol, 1992; Porsild & Cody, 1980; Soreng, 2007). The species was recently recorded from September (Mouse) Lake, east of the Coppermine River, a site just outside of the study area (Reading 118, DAO; Cody & Reading, 2005). This specimen was published as collection no. 118, but the specimen label bears collection no. 206, with 118 scratched out. These collections fill in a conspicuous gap along the northern edge of the species' mainland distribution between Great Bear Lake and Bathurst Inlet (Cody et al., 1984). The taxon has not been recorded for Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic it is recorded from Baffin, Coats and Southampton islands, and adjacent northern Quebec and Labrador (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3370* (CAN, UBC); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3385* (CAN, MO, O); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3475* (CAN, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3513* (ALA, CAN); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3632* (CAN, MT, UBC); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4296* (CAN, US, WIN); Kugluktuk, ball diamond on S side of town, 67°49'23.2"N, 115°6'31.9"W ± 5 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4400* (ALTA, CAN).

Poa arctica R. Br. subsp. ***arctica*****—**Arctic bluegrass | Circumpolar–alpine

Reported for the study area in Porsild & Cody (1980), but we were unable to locate a voucher specimen for confirmation. We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. Taxonomy follows Soreng (2007), who recognizes five subspecies in North America, of which three occur in the Arctic: subsp. *arctica*, *caespitans* Simmons ex Nannf. and *lanata* (Scribn. & Merr.) Soreng. These same taxa are recognized in Elven et al. (2011). Only subspecies *arctica* occurs in the study area. It is widespread throughout the Canadian Arctic

(Aiken et al., 2007; Cody et al., 1984; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3116* (CAN); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3307* (CAN, UBC); S of Fockler Creek, S-facing slope on N side of small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 5 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3459* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4060* (ALA, ALTA, CAN, US).

Poa glauca Vahl subsp. ***glauca***, Fig. 34C, D—Glaucus bluegrass | Circumpolar–alpine

Previously reported for the study area in (Porsild & Cody, 1980) but we were unable to locate a voucher specimen for confirmation. We made numerous collections throughout the study area, including at Kugluktuk, Fockler Creek and Kugluk (Bloody Falls) Territorial Park. Taxonomy follows Soreng (2007), who recognized three infraspecific taxa in North America, of which two reach the Arctic: the widespread subsp. *glauca* and the viviparous, amphi-Beringian var. *pekulnejensis* (Jurtzev & Tzvelev) Prob. known in North America only from the Seward Peninsula, Alaska (Elven et al., 2011). Elven et al. (2011) recognized the latter taxon at species level, *P. pekulnejensis* (Jurtzev & Tzvelev). *Poa glauca* subsp. *glauca* is widespread throughout

the Canadian Arctic (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 67.816667°N, 115.143889°W, 02 July 2008, *L.J. Gillespie, J.M. Saarela, L.M. Consaul & R.D. Bull 7457-1* (CAN-592321) *& 7457-2* (CAN-592320); Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0632* (UBC; CAN; BABY; ALA, det. B.A. Bennett, December 2013); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3076* (ALTA, CAN, US); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3114* (CAN, NY, QFA, WIN); second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3217* (ALA, CAN, O); SW-facing slope above (N side) of Fockler Creek, ca. 3.2 km SE of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25 m, 193 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3415* (ALA, ALTA, CAN, K); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3631* (CAN, MO, MT); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3633* (CAN, UBC); S-facing slopes above Coppermine River and below spruce forest, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3658* (ALA, CAN, K, NY, QFA); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m,

467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3778* (CAN, K, NY, QFA, UBC, US, WIN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3802* (CAN, MO, MT, O); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3927* (CAN, UBC, US); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4259* (ALTA, CAN, MO, MT, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4387* (CAN, UBC, US, WIN).

Poa pratensis subsp. ***alpigena*** (Lindm.) Hiitonen—Northern meadow-grass | Circumboreal-polar | Noteworthy Record

Our collections are the first records of the taxon for the study area, closing a gap between eastern Great Bear Lake and the Bathurst Inlet area (Cody & Reading, 2005; Cody et al., 1984; Porsild & Cody, 1980). We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Although widespread throughout the Canadian Arctic Archipelago and throughout the circumboreal region, there are comparatively few collections of this taxon from mainland Nunavut (Porsild & Cody 1980; Soreng 2007)(Cody & Reading, 2005; Cody et al., 1984; Cody et al., 1989; Gould & Walker, 1997; Korol, 1992; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, corner of Tuktu Road and Saddleback Street, 67°49'23.8"N, 115°6'17.6"W ± 10 m, 21 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3092* (CAN, UBC); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela, Sokoloff & Bull 3193* (CAN); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3371b* (ALTA, CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3760* (CAN, US); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3803* (CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3805* (CAN, NY, QFA, WIN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4058* (CAN); Kugluk (Bloody Falls) Territorial Park, along wet, muddy, and deeply pitted ATV trail ca. 1 km W of Bloody Falls, 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4100* (CAN, MT, UBC); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4215* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4388* (ALA, CAN).

Puccinellia arctica (Hook.) Fernald & Weath., Fig. 35A, B—Arctic alkali grass | American Beringian–North American | Noteworthy Record

This is the first record of the species for the study area. Our collections, all from the Bloody Falls area, close a gap between the first mainland Nunavut collection, reported from the Bathurst Inlet area (Cody et al., 1984), as *P. agrostidea* Th. Sør, and Tuktut Nogait National Park and vicinity (Saarela et al., 2013a). One or more records from the Hood River (as *P. agrostidea*) in the Bathurst Inlet area have also been reported (Gould & Walker, 1997). Further west there are multiple collections from the Arctic coast of Northwest Territories and Yukon (Davis & Consaul, 2007; Porsild & Cody, 1980). In the Canadian Arctic Archipelago the species is recorded from Banks, Ellesmere and Victoria islands (Aiken et al., 2007). The current concept of this species includes *P. agrostidea* and *P. poacea* Th. Sør. (Consaul & Gillespie, 2001; Davis & Consaul, 2007; Elven et al., 2011), which were recognized as distinct species in Porsild & Cody (1980). This species was common on sparsely vegetated clay slopes and flats in the vicinity of Bloody Falls, growing with *Achillea millefolium* subsp. *borealis, Chamerion latifolium, Deschampsia cespitosa, Festuca rubra* subsp. *arctica, Hedysarum boreale* subsp. *mackenziei, Hordeum jubatum* subsp. *intermedium* and *Puccinellia nuttalliana*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, S-facing clay slopes in gully on W side of Coppermine River, 67°44'12"N, 115°23'16.5"W ± 5 m, 41 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4011* (CAN, MO, MT, O, UBC, US, WIN); Kugluk (Bloody Falls) Territorial Park, terrace above S-facing slopes above start of Bloody Falls, W side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 50 m, 68 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4088* (ALA, ALTA, CAN, UBC, US); rocky beach along

SE side of Coppermine River, above start of Bloody Falls, 67°44'16"N, 115°22'73.3"W ± 20 m, 17 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4221a* (CAN).

Puccinellia nuttalliana (Schult.) Hitchc., Fig. 35C, D—Nuttall's alkali grass | Amphi-Pacific/Beringian–North American | Noteworthy Record

Newly recorded for the study area. This species was first collected near the Kugluktuk Airport by B. Bennett in 2013. This collection and our numerous collections fill in a gap between Bathurst Inlet (Young's Bay, 6 Aug. 1950, *Kelsall & McEwen 235*, CAN-202973), Hood River (as *P. borealis*) (Gould & Walker, 1997) and eastern Great Bear Lake in the range maps (for *P. borealis* and *P. deschampsioides*) of Porsild & Cody (1980). This is the most common *Puccinellia* species in the study area. It is highly variable with numerous forms that may look like different taxa in the field. Because of this variation, we made numerous collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The study area is near the northern limit of its range in northwestern Canada; to the north it is known only from Victoria Island (Aiken et al., 2007). There are few collections from mainland Nunavut, with the exception of the extreme southeast (Davis and Consaul 2007; e.g., Arviat, 11 July 2000, *Boles RB00-62*, CAN-600911; Rankin Inlet, Kudlulik Peninsula, 13 Aug 1974, *Ohenoja 3*, CAN-587999). In central mainland Nunavut it is recorded from Bathurst Inlet (Porsild & Cody, 1980); this collection is not mapped in Davis & Consaul (2007). Two species, *P. deschampsioides* Th. Sør. and *P. interior* Th. Sør, recognized in Porsild & Cody (1980) are treated as synonyms of *P. nuttalliana* by Davis & Consaul (2007) and Elven et al. (2011). A third species, *P. borealis* Swallen, is recognized by Porsild & Cody (1980) and Elven et al. (2011), but included in *P. nuttalliana* by Davis & Consaul (2007), whose treatment we follow. The geographic summary combines that of *P. nuttalliana* and *P. borealis* from Elven et al. (2011). The species formed

large dense populations on large clay slopes, where it was often the only plant species present. In one such habitat it was growing with *P. arctica*. Because this species can be difficult to distinguish from *P. vaginata*, which also occurs in the study area, a key to separate the two is given below.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0327a* (CAN); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3371a* (CAN, MO, MT, O); confluence of Sleigh Creek and Coppermine River, 0.4 km N of Sandstone Rapids, 67°27'13.9"N, 115°38'7.7"W ± 25 m, 126 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3481* (CAN, K, MO, MT, UBC, US, WIN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3979* (ALA, ALTA, CAN, K, NY, UBC); Kugluk (Bloody Falls) Territorial Park, S-facing clay slopes in gully on W side of Coppermine River, 67°44'12"N, 115°23'16.5"W ± 5 m, 41 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4010* (CAN, QFA, UBC, US, WIN); Kugluk (Bloody Falls) Territorial Park, terrace above S-facing slopes above start of Bloody Falls, W side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 50 m, 68 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4093* (ALA, ALTA, CAN, K, NY, QFA, US, WIN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4126* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded,

67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4127* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4128* (CAN, MO, MT, O, QFA, WIN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4130* (CAN, US); rocky beach along SE side of Coppermine River, above start of Bloody Falls, 67°44'16"N, 115°22'73.3"W ± 20 m, 17 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4221b* (ALA, ALTA, CAN); gravel roadside SW of Kugluktuk, S side of road to Heart Lake cemetery, just beyond sewage retention pond, 5.59 km SW of mouth of Coppermine River, 67°48'39"N, 115°12'38.7"W ± 25 m, 46 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4323* (ALA, ALTA, CAN, O, UBC, US); Kugluktuk, ball diamond on S side of town, 67°49'23.2"N, 115°6'31.9"W ± 5 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4399* (ALA, ALTA, CAN, MO, MT, O, UBC).

Key to *Puccinellia nuttalliana* and *P. vaginata* (adapted from Davis & Consaul, 2007):

1. Culms usually erect; blades 1–4 mm wide, flat to involute; panicles 5–30 cm, usually exserted from sheath; spikelet bearing from the base or on distal 2/3; pedicels scabrous, lacking tumid epidermal cells; lower glumes 0.5–1.5 mm; lemmas (2–)2.2–3(–3.5) mm…*Puccinellia nuttalliana*

1’ Culms erect or decumbent; blades 1–2 mm wide when flat, 0.5–1.6 mm in diameter when involute; panicles (3–)6–12(–14) cm, usually barely exserted from sheath at maturity, spikelets

usually confined to distal 2/3; pedicels slightly scabrous, epidermal cells tumid; lower glumes 1.3–2.1 mm; lemmas 2.8–4 mm…*Puccinellia vaginata*

Puccinellia phryganodes subsp. ***neoarctica*** (Á. Löve & D. Löve) Elven—Goosegrass | North American (N)

Previously reported for the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen for confirmation. We made only one collection of this halophytic species, growing in the tidal zone at Richardson Bay, with *Carex subspathacea*, *Potentilla anserina*, *Puccinellia vaginata* and *Stellaria humifusa*. *Puccinellia vaginata* also occurred there. Plants in the study area are the triploid race of *P. phyrganodes* (Trin.) Scribn. & Merr. that is common along the Canadian Arctic coastline (Davis & Consaul, 2007; Porsild & Cody, 1980). This taxon is widespread throughout the Canadian Arctic Archipelago and is recorded from several mainland sites (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3667a* (ALA, ALTA, CAN, MO, O, UBC, US).

Puccinellia vaginata (Lange) Fernald & Welsh—Sheathed alkali grass | Amphi-Beringian–North American (N) | Noteworthy Record

Newly recorded for the study area. The taxon was first collected in the study area around the Kugluktuk Airport, by B. Bennett in 2013. We made three collections along the edge of the

estuary and in wet trenches at Richardson Bay. Associated species at this site are listed under *Puccinellia phryganodes*, which was also common there. The only other record of this species from mainland Nunavut appears to be just west of the study area (Davis & Consaul, 2007; Porsild & Cody, 1980), though we were unable to locate a voucher. Elsewhere in the Canadian Arctic, this primarily coastal species is recorded from Baffin, Devon, Ellesmere, Southampton and Victoria islands and northern Quebec, with a large gap in the Central Arctic (Aiken et al., 2007; Davis & Consaul, 2007; Porsild & Cody, 1980; Saarela et al., 2013a). It is not clear if this gap is real or a sampling artefact.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0327b* (CAN, det. B.A. Bennett, May 2014); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3671* (ALA, ALTA, CAN, MO, O); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3674* (CAN, MT, NY, QFA, WIN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3667b* (CAN, UBC, US).

Trisetum spicatum (L.) K. Richt., Fig. 36A—Narrow false-oat | Circumpolar-alpine

Previously reported for the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen for confirmation. We made collections at Kugluktuk, Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian

Arctic (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0329* (BABY, det. B.A. Bennett, July 2013); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3078* (CAN, UBC); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3273* (CAN); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3376* (ALTA, CAN, O); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3505* (ALA, CAN); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3655* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3807* (CAN, MO, MT); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'13.2"N, 115°22'6.3"W ± 3 m, 21 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4144* (CAN, US, WIN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4365* (CAN, K, NY, QFA).

Potamogetonaceae [2/4]

Potamogeton gramineus L.—Grass-leaved pondweed | Circumboreal-polar | Noteworthy Record

This species is newly recorded for the study area and our collection represents a northeastern range extension from the Great Bear Lakes area. The plants were locally common and submersed in about one ft. of water along the edge of the Coppermine River in Kugluktuk. The species was previously recorded from mainland Nunavut from the Thelon River (ca. 28 miles SW of Beverly Lake, ca. 64°36'N, 100°30'W, 23 July 1960, *E. Kuyt 83*, CAN-561543, det. R.R. Haynes 1995), as mapped in Porsild & Cody (1980) and Haynes & Hellquist (2000b). Elsewhere in the territory it is recorded from Akimiski Island (Blaney & Kotanen, 2001). In their range map, Haynes & Hellquist (2000b) also included a small sliver of southern Nunavut adjacent to the Manitoba and Saskatchewan, but it is unclear if its occurrence in this area is documented by specimens. The taxon sometimes has floating leaves, but none was present in the population from which our collection was gathered. The taxon also reaches the Arctic in adjacent Northwest Territories (e.g., Anderson River Delta, 69°42'N, 129°W, *T.W. Barry 192*, CAN-287856, det. R.R. Haynes 1995).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4276* (ALA, ALTA, CAN, UBC).

Stuckenia filiformis (Pers.) Börner—Slender-leaved pondweed | Circumboreal–polar | Noteworthy Record

Our four collections are the first records of the species for the study area. We found the species in a small shallow pond on an island in the mouth of the Coppermine River, and at two sites in Kugluk (Bloody Falls) Territorial Park. At one site the plants were uncommon and rooted in wet moss at the edge of a pond, previously underwater, while at the other site the plants were locally common in wet sand at the edge of the Coppermine River, in an area that had probably recently dried up. This species was recently recorded from a site just outside the study area (Reading 50, DAO; Cody & Reading, 2005). These collections close a gap in distribution between Bathurst Inlet and eastern Great Bear Lake (Porsild & Cody, 1980). Elsewhere in the Canadian Arctic the taxon is recorded from Baffin and Southampton islands, a few sites along western Hudson Bay and northern Quebec (Aiken et al., 2007; Garneau, 2013a; Korol, 1992).

The taxonomy of *Stuckenia* Börner is complex and there are several conflicting taxonomic treatments (see discussion in Elven et al., 2011; Haynes & Hellquist, 2000b; Kaplan, 2008; Tolmachev & Packer, 1995). Here we follow the revisionary treatment of Kaplan (2008), which includes an excellent key for distinguishing the taxa. We do not recognize subspecies in this variable taxon, following the treatment of Kaplan (2008). Our collections key to *S. filiformis* subsp. *alpina* (Blytt) R.R. Haynes, Les & M. Král in Haynes & Hellquist (2000b). In Elven et al. (2011) and Aiken et al. (2007) they correspond to *S. filiformis* subsp. *borealis* (Raf.) Tzvelev & Elven. Elven et al. (2011) recognized subsp. *borealis* as being an Amphi-Beringian and North American taxon, and they treated European and Asian plants as *Stuckenia filiformis* subsp. *filiformis* (including *S. filiformis* subsp. *alpina* as a synonym), a taxon Haynes & Hellquist (2000b) recognized as occurring in northwestern North America and Greenland.

The circumscription of *Stuckenia filiformis* subsp. *occidentalis* (J.W. Robbins) R.R. Haynes, Les & M. Král—a name based on specimens from Nevada—is problematic. Haynes &

Hellquist (2000b) recognized this taxon as widespread across North America, and it was recently recognized in a treatment of the flora of northern Quebec (Garneau, 2013a). Elven et al. (2011) note that plants treated under this name resemble *S. pectinata* and *S. vaginata* more than *S. filiformis* in several characters (Elven et al., 2011). Kaplan (2008) did not formally treat this name in his revision of the genus in Asia but noted that many individuals treated under this name have open sheaths (vs. closed)—a character he emphasized as distinguishing *S. filiformis* (closed sheaths) from *S. pectinata* and *S. vaginata* (open sheaths)—and they therefore could not be considered to be *S. filiformis*. Haynes & Hellquist (2000b) did not include the nature of the leaf sheath as a character in their keys or descriptions. Kaplan (2008) also noted the possibility they may represent hybrids between *S. pectinata* and *S. vaginata*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3723* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3881* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3882* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4136* (CAN).

Stuckenia pectinata (L.) Börner, Fig. 36B—Sago pondweed | Circumboreal | Noteworthy Record

Our collections of this boreal species are the first records for Nunavut (Brouillet et al., 2010+; Haynes & Hellquist, 2000b; Porsild & Cody, 1980), and represent a northeastern range extension for the species. We made two collections above Bloody Falls and one below; two of these sites are in Kugluk (Bloody Falls) Territorial Park. At each of these three sites, the species was locally common and submersed in 0.5–1 feet of water along the edge of the Coppermine River. We found the species in a similar habitat along the Coppermine River at Kugluktuk. The closest collections are from the Mackenzie River Delta (Porsild, 1943; Porsild & Cody, 1980; specimens at CAN); these were not mapped in Haynes & Hellquist (2000b), who may have assigned these plants to *S. filiformis* subsp. *occidentalis* (Elven et al., 2011), which they did map for the Mackenzie Delta. The species is not recorded from other sites in the Canadian Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3980* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4135* (CAN); rocky beach along SE side of Coppermine River, above start of Bloody Falls, 67°44'16"N, 115°22'73.3"W ± 20 m, 17 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4224* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4277* (CAN, MO, O).

Stuckenia vaginata (Turcz.) Holub.—Big-sheath pondweed | European (N) & Asian (C-NE) & North American | Noteworthy Record

Our collections are the first report of this taxon from the study area and mainland western Nunavut. We found the species at three sites: near the Kendall River, on an island in the mouth of the Coppermine River and in Kugluk (Bloody Falls) Territorial Park. This primarily boreal species is known from a few collections from the mainland Canadian Arctic in Northwest Territories and southeastern Nunavut (Cody et al., 2003; Porsild, 1950b; Porsild & Cody, 1980; Saarela et al., 2013a), and was recently reported from a site on Victoria Island, Nunavut, the first report for the Canadian Arctic Archipelago (Gillespie et al., 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), small ponds on flats adjacent to Coppermine River, 67°6'44.7"N, 116°8'6.1"W ± 100 m, 213 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3589* (CAN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3722* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3880* (CAN).

Tofieldiaceae [1/2]

Tofieldia coccinea Richardson, Fig. 37—Pink-flowered asphodel, Northern tofieldia | Asian (N/C)–amphi-Beringian–North American (N)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. A key to separate *T. coccinea* and *T. pusilla* is given in Saarela et al. (2013a). Elsewhere in the Canadian Arctic this species is recorded from Banks, Baffin, Devon and

Victoria islands, and some mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Gauthier, 2013; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 1 August 1951, *W.I. Findlay 232* (DAO-176341 barcode 01-01000677356); top of ridge N of Fockler Creek, ca. 3.6 km SE of Sandstone Rapids, Coppermine River, 67°25'20"N, 115°35'40.1"W ± 5 m, 235 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3418* (CAN, MO, O); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3546* (CAN, MT, US); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3783* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3770* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3945* (CAN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3994* (ALA, CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4378* (ALTA, CAN).

Tofieldia pusilla (Michx.) Pers.—Bog asphodel, Small tofieldia | Circumpolar–alpine

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Big Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Southampton and Victoria islands and several mainland sites (Aiken et al., 2007; Bennett, 2015; Cody & Reading, 2005; Cody et al., 1989; Gauthier, 2013; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 8 July 1951, *W.I. Findlay 103* (DAO-176422 barcode 01-01000677807); Kugluktuk, overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015890); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3068* (CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3153* (CAN, UBC); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3241* (ALA, CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3547* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3868* (CAN, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4382* (CAN).

Typhaceae [1/1]

Sparganium hyperboreum Laest. ex Beurl., Fig. 38—Northern burreed | Circumboreal-polar | Noteworthy Record

This is the first record of the species for the study area, where we encountered a dense stand in a small pond, growing with *Carex saxatilis*, at a site south of Escape Rapids. The species is at the northern edge of its range in the study area. It was previously reported from an Arctic site just outside the study area, ca. 30 km east of the Coppermine River (Reading 52, DAO; Cody & Reading, 2005). The nearest sites to these collections are in the Great Bear Lake and Bathurst Inlet areas (Porsild, 1943; Porsild & Cody, 1980). Elsewhere in Nunavut it is recorded from Yathkyed Lake, the Tha-anne River and the Nueltin Lake area north of the Manitoba border (Porsild, 1943; Porsild, 1950b; Porsild & Cody, 1980). It also reaches the Canadian Arctic in northern Quebec and Labrador (Garneau, 2013b; Kaul, 1997).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3617* (ALA, ALTA, CAN, O, UBC).

Eudicots

Asteraceae [15/23]

Achillea millefolium subsp. ***borealis*** (Bong.) Breitung, Fig. S15—Common yarrow | Amphi-Beringian–North American (N)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b, as A. millefolium subsp. atrotegula Boivin; Porsild & Cody, 1980). We made collections in Kugluk (Bloody Falls) Territorial Park and Kugluktuk. *Achillea millefolium* is a widespread, morphologically complicated and variable species that has been variously treated taxonomically. Trock (2006) did not recognize any infraspecific taxa in *A. millefolium* in North America. Elven et al. (2011) tentatively treated northern North American plants as *A. millefolium* subsp. *borealis*, the classification we follow here. Porsild & Cody (1980) recognized native northern plants as *A. nigrescens* (E. Mey.) Rydb. and plants introduced from the Old World as *A. millefolium* L. (=*A. millefolium* subsp. *millefolium* in Elven et al. (2011)). *Achillea nigrescens* is treated as a synonym of *A. millefolium* s.l. in Trock (2006) and of *A. millefolium* subsp. *borealis* in Elven et al. (2011). Elsewhere in the Canadian Arctic this species is recorded from Banks Island and southern Baffin Island, and on the mainland from the Bathurst Inlet area and to the west (Aiken et al., 2007; Bennett, 2015). The species is at the northern edge of its range in the study area. –

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 149* (DAO barcode 01-01000616612); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 21 July 1951, *W.I. Findlay 159* (ALTA-VP-16422, DAO barcode 01-01000616613, UBC-V40758); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 98* (LEA), Kugluktuk, 67.82125°N, 115.085217°W, 06 July 2006, *J. Davis 618* (CAN-597644); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3959* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, terrace above S-facing slopes above start of Bloody Falls, W side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 50 m, 68 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4090* (CAN,

US); S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4208* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4249* (CAN, MT).

***Antennaria friesiana – A. alpina* complex**

Antennaria is an extremely taxonomically difficult genus due to extensive polyploidy, hybridization and asexual reproduction (apomixis). Although considerable systematic investigation has been conducted on species groups that include Arctic plants (Bayer, 1993; Bayer & Stebbins, 1993; Chmielewski, 1994; Chmielewski, 1997; Chmielewski, 1998; Chmielewski & Chinnappa, 1991), the problems are confounded by competing taxonomic concepts. For example, *Antennaria media* subsp. *compacta* (Malte) Chmielewski (syn. *A. compacta* Malte), treated as a distinct taxon by Chmielewski (1997) and recognized in recent treatments for the Canadian Arctic (Aiken et al., 2007; Bayer, 2006; Elven et al., 2011), is included in *A. alpina* s.l. by Bayer (2006). Plants included here all have two or more heads, distinguishing them from *A. monocephala* (Bayer, 2006), which is treated below, and are likely referable to either *A. friesiana* s.l., *A. alpina* s.l. or *A. media* subsp. *compacta*, depending on whose taxonomy is followed. All characters in the key in Bayer (2006) distinguishing *A. friesiana* and *A. alpina* overlap. Unfortunately, in none of his papers does Chmielewski provide a treatment for all taxa he recognizes, and his papers treating different groups do not all indicate clearly how the groups differ from one another. Distinguishing the above-named taxa is exceptionally difficult for a non-expert, and here the plants are treated as a broadly circumscribed species complex pending further study. A collection from the mouth of the

Nipartoktuak River (*Findlay 184A*, DAO) just east of the study area was published as A. subcanescens Astf. ex Malte (Cody, 1954b) and determined as *A. compacta* by A.E. Porsild in 1967.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3059* (CAN, US); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3150* (CAN); third ridge N of Fockler Creek overlooking small lake, ca. 1.7 km SSE of Sandstone Rapids, Coppermine River, 67°26'7.3"N, 115°37'28"W ± 3 m, 171 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3221* (ALTA, CAN); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3332* (CAN); W shore of Tundra Lake, ca. 4.3 km SE of Sandstone Rapids, Coppermine River, 67°25'43.7"N, 115°33'6.8"W ± 4 m, 262 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3443* (CAN, O); W shore of Tundra Lake, ca. 4.3 km SE of Sandstone Rapids, Coppermine River, 67°25'43.7"N, 115°33'6.8"W ± 4 m, 262 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3445* (CAN, MO); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3628* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3765* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3779* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-

use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3813* (CAN, MT); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4240* (CAN, UBC).

Antennaria monocephala subsp. ***angustata*** (Greene) Hultén—Pygmy pussy-toes | Amphi-Beringian–North American (N)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections in the vicinity of Fockler Creek and in Kugluk (Bloody Falls) Territorial Park. No collections were mapped in the study area in Chmielewski (1991) but collections were mapped for the taxon (as *A. angustata* Greene, a synonym) in Porsild and Cody (1980). Elsewhere in the Canadian Arctic this species is recorded from Banks, Devon, Coats, Melville and Nottingham islands and mainland sites (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 1 August 1951, *W.I. Findlay 230* (DAO-177181 barcode 01-01000616991); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 26 July 1951, *W.I. Findlay 184B* (DAO-177183 barcode 01-01000616990); W shore of Tundra Lake, ca. 4.3 km SE of Sandstone Rapids, Coppermine River, 67°25'43.7"N, 115°33'6.8"W ± 4 m, 262 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3444* (CAN, US); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m, 422 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3751* (CAN); Kugluk (Bloody Falls) Territorial Park, small rocky meadow along small stream that runs into Coppermine River just below Bloody Falls, about 1 km W of Bloody Falls, 67°44'40.1"N, 115°23'37.5"W ± 15 m, 48 m, 15 July 2014,

Saarela, *Sokoloff & Bull 4026* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4160* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4161* (CAN).

Arnica angustifolia Vahl subsp. ***angustifolia***, Fig. S16—Alpine arnica | North American (N)–amphi-Atlantic (W)

Previously recorded from Kugluktuk (Cody, 1954b, as A. alpina var. vahliana Boivin; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Taxonomy follows Elven et al. (2011) and Wolf (2006), although the circumscription of the taxon in Wolf (2006) is broader, including *Arnica angustifolia* subsp. *attenuata* (Greene) G.W. Douglas & Ruyle-Douglas, which is recognized as a distinct taxon in Elven *et al.* (2011) and Porsild & Cody (1980, as A. alpina subsp. attenuata (Greene) Maguire). This taxon has also been recognized as *Arnica alpina* subsp. *angustifolia* (Vahl) Maguire (Porsild & Cody, 1980). In the Canadian Arctic it is recorded from Baffin, Banks, Ellesmere, Emerald, Melville, Somerset and Victoria islands and mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 27 July 1951, *W.I. Findlay 40* (DAO-161697 barcode 01-01000616645); Kugluktuk, overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015860); Kugluktuk, rocky slopes of North Hill,

67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3069* (CAN); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3122* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3820* (CAN, US).

Arnica frigida C.A. Mey. ex Iljin, Fig. S17—Snow arnica | Amphi-Beringian

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Big Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Taxonomy follows Elven et al. (2011). This taxon has also been recognized as *A. griscomii* subsp. *frigida* (C.A. Mey. ex Iljin) S.J. Wolf (Wolf, 2006) or *A. louiseana* subsp. *frigida* (C.A. Mey. ex Iljin) Maguire (Porsild & Cody, 1980). This is an Amphi-Beringian species that extends to just west of Bathurst Inlet (Porsild & Cody, 1980). Wolf (2006) did not include Nunavut in the range of the taxon even though collections were mapped in Porsild & Cody (1980) at sites, including the study area, that are now within the territory. The species is not recorded for the Canadian Arctic Archipelago and is at the edge of its range in the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], Coronation Gulf, at mouth of Coppermine River, [67.822146°N, 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3298* (CAN-200101); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 129* (DAO); Coppermine [Kugluktuk], south facing cliff overlooking Coppermine River, [67.816375°N, 115.1002722°W ± 350 m], 11 July 1958, *R.D. Wood s.n.*

(CAN-265449); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3543* (CAN); Kugluk (Bloody Falls) Territorial Park, gentle stream in shallow valley running into Coppermine River just W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 20 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4013* (CAN, US); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4371* (CAN, MT).

Artemisia borealis Pallas subsp. ***borealis*—**Boreal wormwood | European (NE)–Asian (N/C)–amphi-Beringian–Cordilleran–North American (N) | Noteworthy Record

Our two collections, from Fockler Creek and Melville Creek, are the first records of this taxon for the study area. This taxon was recently recorded from the Big Bend area of the Coppermine River, just south of the study area (Reading 30, DAO; Cody et al., 2003) and two sites west of the Coppermine River (67°33'28"N, 116°14'59"W, *K.L. Reading 58,* DAO; 67°38'N, 116°19'W, *K.L. Reading 34*, DAO). All of these collections close a gap between Bathurst Inlet, Hood River, eastern Great Slave Lake and Tuktut Nogait National Park and vicinity (Gould & Walker, 1997; Porsild & Cody, 1980; Saarela et al., 2013a). Elsewhere in the Canadian Arctic, the taxon is recorded from southern Baffin Island, Banks and Victoria islands, and a few other mainland sites (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy for *A. borealis* follows Schultz (2006) and Elven et al. (2011) who recognize two subspecies; by contrast, Porsild & Cody (1980) recognized these taxa at species level. Subspecies *borealis* is a widespread circumboreal taxon that reaches the Low Arctic in Canada, while *Artemisia borealis* subsp. *richardsoniana* is an Amphi-Beringian species. The latter subspecies was recorded for the

study area as *A. richardsoniana* Besser in Porsild & Cody (1980). We were unable to locate a voucher specimen to confirm that record and we did not collect the taxon in 2014. A key to distinguish subsp. *borealis* and subsp. *richardsoniana* is given in Saarela et al. (2013a). One of the collections treated here approaches subsp. *richardsoniana*, in having quite villous blades, but the hairs are not as dense as is typical for subsp. *richardsoniana*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: top of ridge N of Fockler Creek, ca. 3.6 km SE of Sandstone Rapids, Coppermine River, 67°25'20"N, 115°35'40.1"W ± 5 m, 235 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3419* (CAN, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3501* (CAN).

Artemisia hyperborea Rydb., Fig. S18—Northern wormwood | American Beringian

A previous collection from near Kugluktuk is the only record of this species for Nunavut mapped in Porsild and Cody (1980), but we were unable to locate a voucher specimen for confirmation. The species was recently recorded from a site ca. 20 km west of the study area (Cody & Reading, 2005). We made collections near Muskox Rapids and in Kugluk (Bloody Falls) Territorial Park. The species is at the eastern limit of its mainland Arctic range in the study area. It is recorded from Arctic sites on mainland Northwest Territories (Porsild & Cody, 1980; Saarela et al., 2013a). In the western Canadian Arctic Archipelago it is recorded from Victoria Island (Northwest Territories) and Banks Island (Aiken et al., 2007; L.J. Gillespie and J.M. Saarela, unpubl. data). The taxon was treated as a synonym of *A. furcata* M. Bieberstein in Shultz (2006) but was considered a distinct species in Elven et al. (2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: esker on E side of Coppermine River, 0.6 km SSE of Muskox Rapids, 67°22'40"N, 115°42'38.5"W ± 50 m, 172 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3611* (CAN); Kugluk (Bloody Falls) Territorial Park, sandy NE-facing slope above small creek in deep gully, about 0.5 km W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 41 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4020* (CAN, UBC, US).

Artemesia tilesii Ledeb.—Tilesius's wormwood | European (NE)–Asian (N)–amphi-Beringian–North American (N)

Previously recorded from Bloody Falls (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek, and in Kugluk (Bloody Falls) Territorial Park. The species was collected in Kugluktuk in 1999. This is a common species in disturbed areas along the Coppermine River and is readily distinguished from congeneric species in the study area by its distinctly rhizomatous habit. The species reaches its eastern limit in central mainland Nunavut, and in the Canadian Arctic Archipelago is recorded only from Banks and Victoria islands (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 2003; Porsild & Cody, 1980; Saarela et al., 2013a; L.J. Gillespie and J.M. Saarela, unpubl. data). Taxonomy follows Shultz (2006), who did not recognize any infraspecific taxa in this polymorphic species, while Elven et al. (2011) recognized two: subsp. *tilesii* and subsp. *elatior* (Torr. & A. Gray) Hultén, but noted they may not be distinct.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 28A* (CAN-108352); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 28* (CAN-108365); Bloody Falls on Coppermine River, 67°44'N,

115°23'W, 27 July 1951, *W.I. Findlay 201* (DAO-177628 barcode 01-01000616643); Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23 June 1999, *C.L. Parker & I. Jonsdottir 9101* (ALA); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3390* (CAN, US); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3406* (ALA, CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3490* (CAN, MO, MT, WIN); Kugluk (Bloody Falls) Territorial Park, sandy rocky beach at W side of Bloody Falls, 67°44'27.8"N, 115°22'20.3"W ± 25 m, 5 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3913* (ALTA, CAN, O).

Askellia pygmaea (Ledeb.) K.L. Chambers & S.C. Meyer (Richardson) W.A. Weber, Fig. 39—Dwarf alpine hawks-beard | Asian (C-NE)–amphi-Beringian–North American (NW) | Noteworthy Record

This is the first report of the species for the study area. We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. It was recently reported from a site just west of the study area (Reading 586, DAO; Cody & Reading, 2005). Together these collections close a gap between Tuktut Nogait Park and vicinity, southwestern Victoria Island, Bathurst Inlet and Hood River (Cody & Reading, 2005; Gould & Walker, 1997; Porsild & Cody, 1980; Saarela et al., 2013a). Elsewhere in the Canadian Arctic it is recorded from Baffin, Banks Melville, Prince Patrick, Southampton and Victoria islands, and scattered mainland sites (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). This species was previously treated in the genus

Crepis L., as *C. nana* Richardson (Bogler, 2006; Porsild & Cody, 1980) but is now recognized in the genus *Askellia* Weber (Elven et al., 2011; Enke, 2009). Until recently, the taxon was recognized in *Askellia* as *A. nana* (Richardson) W.A.Weber, and this is the name on the labels for our collections. However, Chambers & Meyers (2011) recognized that the epithet "pygmaea" has priority at species level for this taxon (except in *Crepis*, because of the earlier name *C. pygmaea* L.), based on *Prenanthes pygmaea Ledeb.*, a synonym of *Crepis nana*, and they proposed the combination *A. pygmaea*. *Crepis nana* was described from one or more collections made along the Coppermine River between Point Lake and the coast (type/possible type K000808310, GH00006269), possibly within the study area (Richardson, 1823).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3334* (CAN); N shore of Fockler Creek, ca. 2.3 SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3450* (CAN, MO, UBC); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3657* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3962* (CAN, US); rocky beach along SE side of Coppermine River, above start of Bloody Falls, 67°44'16"N, 115°22'73.3"W ± 20 m, 17 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4222* (CAN).

Erigeron eriocephalus J. Vahl—Woolly-headed fleabane | Circumpolar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made one collection just outside of Kugluktuk. Taxonomy here follows Elven et al. (2011), who summarize taxonomic problems in the circumpolar-alpine "*Erigeron uniflora* aggregate". The taxon has also been treated as *E. uniflorus* var. *eriocephalus* (J. Vahl) B. Boivin (Nesom, 2006) and *E. uniflorus* subsp. *eriocephalus* (J. Vahl) Cronquist (Cody, 2000). The species was reported recently from a site just west of the study area (*Reading 595*, DAO; Cody and Reading 2005). Elsewhere in the Canadian Arctic it is recorded from Axel Heiberg, Baffin, Banks, Coats, Melville, Prince Patrick, Southampton and Victoria islands, and scattered mainland sites (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 22* (CAN-103793) & *A.M. Berry 23* (CAN-103794); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 178*A (ACAD-30928, DAO-177056 barcode 01-01000617042, UBC-V40762); top of steep cliff overlooking Coppermine River, just S of Kugluktuk, 67°48'59"N, 115°6'15.6"W ± 50 m, 20 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4422* (CAN).

Erigeron humilis Graham—Low fleabane | Amphi-Beringian–North American (N)–amphi-Atlantic (W)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Expeditor Cove, an island in the mouth of the Coppermine River, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic it is recorded from Baffin, Banks, Coats, Southampton and Victoria islands, and scattered mainland sites (Aiken et al., 2007; Bennett, 2015; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980;

Saarela et al., 2013a). A third species of *Erigeron*, *E. compositus* Pursh, was recorded for the study area in Porsild and Cody (1980) but we were unable to locate a voucher specimen. Pending confirmation we do not accept this record. *Erigeron compositus* reaches its eastern limit on mainland Nunavut at Bathurst Inlet (Cody et al., 1984; Porsild & Cody, 1980) but occurs much further east on some of the Arctic islands (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 22 July 1951, *W.I. Findlay 166* (DAO-177172 barcode 01-01000617044, MT00165029); Coppermine [Kugluktuk], near the settlement, [67°49’36”N, 115°5’36”W ± 1.5 km], 03 July 1958, *R.D. Wood s.n.* (CAN-265444); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3170* (CAN); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3403* (CAN, US); Coronation Gulf, NW peninsula of Expeditor Cove, ca. 9.5 km NW of Kugluktuk, 67°52'39.5"N, 115°16'43.8"W ± 10 m, 14 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3703* (CAN, UBC); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3715* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3775* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4032* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail,

67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4171* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4250* (CAN, O); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4352* (CAN).

Eurybia sibirica (L.) G.L. Nesom, Fig. 40—Arctic aster | European (N)–Asian (N/C)–amphi-Beringian–Cordilleran

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek, Kugluk (Bloody Falls) Territorial Park and other sites along the Coppermine River. This taxon was previously recognized in the genus *Aster* s.l. as *A. sibiricus* L. (Nesom, 1994; Porsild & Cody, 1980) but is now recognized in a separate genus, *Eurybia* (Cass.) Cass. (Brouillet, 2006a; Elven et al., 2011). Elven et al. (2011) recognized infraspecific taxa in the species, with two reaching the Arctic, but we follow Brouillet (2006a) who did not. North American Arctic plants correspond to *E. sibirica* var. *gigantea* (Spreng.) G.L. Nesom, the only one that reaches the Canadian Arctic (Elven et al., 2011). The species is known from numerous sites on the mainland and reaches its eastern limit in North America at Bathurst Inlet, with no collections known between there and the study area (Bennett, 2015; Porsild & Cody, 1980; Saarela et al., 2013a). It is not recorded from the Canadian Arctic Archipelago, and is at the northern edge of its range in the study area. Two collections (*Reading 55*, *584*, DAO) reported in Cody & Reading (2005) from "sites midway between the south end of Bathurst [Inlet] and the vicinity of Coppermine [Kugluktuk]" are in fact from southwest of Kugluktuk.

Several collections from the Big Bend area of the Coppermine River, south of the study area, were recently reported (*Reading 21-1*, *34, 34-1*, *15*, DAO) (Cody et al., 2003).

Several of our collections were found to be mixed with *Symphyotrichum pygmaeum*, a morphologically similar species. A key to distinguish *E. sibirica* and *S. pygmaeum* is given in Saarela et al. (2013a). In addition to the characters listed there, leaf blade vestiture is helpful in distinguishing the species (J.M. Saarela, pers. obs.), as described in the Flora of North America (Brouillet, 2006a; Brouillet et al., 2006): abaxial and adaxial blade surfaces sparsely woolly in *S. pygmaeum* vs. abaxial faces glabrescent to scabridulous, sparsely villous along veins, adaxial sparsely to ± densely villous or villoso-strigose in *E. sibirica*. Blades in *S. pygmaeum* are generally narrower than those in *E. sibirica*, particularly the distal ones.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 21 July 1951, *W.I. Findlay 158* (DAO-176941 barcode 01-01000616981, MT00134713); Coppermine [Kugluktuk], near old Eskimo [sic] dwelling on Cemetery Island, [67.834275°N, 115.0671833°W ± 0.8 km], 11 July 1958, *R.D. Wood 93* (CAN-265448); Coppermine River, east bank, 10 July 1955, *R.E. Miller 82* (CAN-242021); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3188* (CAN, US); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3386b* (CAN, O); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3404* (ALA, ALTA, CAN); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull*

3478b (CAN); Coppermine River, confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3489* (CAN, MO, O); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3635a* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3964a* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, below Bloody Falls, 67°45'7.3"N, 115°22'20.1"W ± 3 m, 12 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4137* (CAN, MT, UBC); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4113a* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, S-facing slopes of large sand hill, NW of Bloody Falls rapids, 67°45'7.5"N, 115°22'43"W ± 3 m, 41 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4172* (ALA, CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4258* (ALTA, CAN); grassy sand flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4415b* (CAN).

Hulteniella integrifolia (Richardson) Tzvelev, Fig. S19—Small arctic daisy | Amphi-Beringian–North American (N)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980) and also recently recorded from the Big Bend area of the Coppermine River, just outside the study

area (Reading 9-1, 24, DAO; Cody et al., 2003). Several Findlay collections (nos. 198, 199, 239) at DAO were on loan and not available for study. We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Coats, Devon, King William, Mansel, Mill, Prince of Wales, Somerset, Southampton and Victoria islands and mainland sites (Aiken et al., 2007; Cody, 1996a; Cody et al., 2003; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). The basionym of this taxon, *Chrysanthemum integrifolium* Richardson, was described from one or more collections made on the Copper Mountains [Coppermine Mountains] in the study area (type BM001025659, GH00004804, K000891745) (Richardson, 1823). The taxon has also been recognized in the genus *Arctanthemum* (Tzvelev) Tzvelev (*A. integrifolium* (Richardson) Tzvelev) (Bremer & Humphries, 1993) but is now recognized in *Hulteniella* Tzvelev (Brouillet, 2006b; Elven et al., 2011). Inclusion of the monotypic *Hulteniella* in a recent molecular phylogenetic study found it to be a distinct lineage consistent with recognition as its own genus (Riggins & Seigler, 2012).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], Coronation Gulf, at mouth of Coppermine River, back of the village, [67.822146°N, 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3288* (CAN-200096); Bloody Falls, 67°44'N, 115°23'W, 16 July 1951, *W.I. Findlay 199* (MT00072107); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3351* (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3558* (CAN); Coronation Gulf, NW peninsula

of Expeditor Cove, ca. 9.6 km NW of Kugluktuk, 67°52'39.1"N, 115°16'43.8"W ± 10 m, 25 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3702* (CAN); Kugluk (Bloody Falls) Territorial Park, wet meadow between Coppermine River and large sand hills on W side of river, 0.5 km W of Bloody Falls, 67°44'44.8"N, 115°22'48.3"W ± 15 m, 33 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4049* (CAN); Kugluk (Bloody Falls) Territorial Park, N-facing slope on high terrace above Bloody Falls rapids, SE side of Coppermine River, 67°44'16.2"N, 115°22'1.8"W ± 25 m, 91m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4226* (CAN, US); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4248* (CAN, UBC).

Petasites frigidus subsp. ***sagittatus*** (Banks ex Pursh) Saarela**, comb. nov.** Basionym: *Tussilago sagittata* Banks ex Pursh, Flora Am. Sept. 531. 1814.—Arrow-leaves coltsfoot | North American | Noteworthy Record

This is the first report of the taxon from the study area. Our single collection was made along Sleigh Creek in the vicinity of Fockler Creek. The plants were uncommon on moist ground in a dense willow thicket (*Salix alaxensis*) along a small creek, growing with *Carex podocarpa*, *Chamerion angustifolium*, *Dasiphora fruticosa* and *Rubus arcticus* subsp. *acaulis*. There are two recent unpublished collections from sites just outside the study area: one east of the confluence of the Coppermine and Kendall rivers (67°5'35"N, 115°43'20"W, 8 September 2002, *K.L. Reading 599*, DAO-788052 barcode 01-01000616638) and the other west of the Coppermine River [67°32'50"N, 116°13'0"W, 23 August 2002, *K.L. Reading 596*, DAO-788028 barcode 01-01000616637]. These, along with our new collection, fill a gap between northwestern Great Bear Lake and the Bathurst Inlet/Hood River area (Cherniawsky & Bayer, 1998c; Gould & Walker, 1997; Porsild, 1943; Porsild & Cody, 1980). This taxon has been reported from southeastern

4808 mainland Nunavut (Cody, 1996a; Cody & Reading, 2005; Cody et al., 2003; Porsild, 1950b;
4809 Porsild & Cody, 1980), an area from which no records were included in the map in Cherniawsky
4810 & Bayer (1998c). Cherniawsky & Bayer (1998c) and Bayer et al. (2006) recognized the taxon as
4811 *P. frigidus* var. *sagittatus* (Banks ex Pursh) Cherniawsky, while Porsild & Cody (1980)
4812 recognized it at species level as *P. sagittatus* Banks ex Pursh. Elven et al. (2011) tentatively
4813 accepted the taxon at species level, but treated the other taxa in the complex as subspecies: *P.*
4814 *frigidus* (L.) Fr. subsp. *frigidus*, *P. frigidus* subsp. *nivalis* (Greene) Cody, *P. frigidus* subsp.
4815 *palmatus* (Aiton) Cody, *P. frigidus* subsp. *arcticus* (A.E. Porsild) Cody. Here we follow the
4816 circumscriptions in Bayer et al. (2006), which are based on comprehensive revision of the genus
4817 in North America (Cherniawsky & Bayer, 1998a; Cherniawsky & Bayer, 1998b; Cherniawsky &
4818 Bayer, 1998c). However, to maintain consistency in rank across the Arctic flora we prefer to
4819 recognize the infraspecific taxon at subspecific rank, a combination that is here proposed. This
4820 taxon is not recorded for the Canadian Arctic Archipelago. It is at the edge of its range in the
4821 study area.

4822 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Sleigh Creek, just downstream
4823 (W) of Tundra Lake, ca. 3.7 km SE of Sandstone Rapids, Coppermine River, 67°26'2.2"N,
4824 115°33'42.9"W ± 25 m, 229 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3449* (CAN, US).

4825 ***Saussurea angustifolia*** (L.) DC. subsp. ***angustifolia***, Fig. 41—Narrow-leaved sawwort | Amphi-
4826 Beringian (E)

4827 Previously recorded from along the lower Coppermine River (Porsild & Cody, 1980). We made
4828 collections at Fockler Creek, Melville Creek, a site south of Escape Rapids, Kugluk (Bloody
4829 Falls) Territorial Park and Kugluktuk. This amphi-Beringian taxon extends eastward all the way

to the western shores of Hudson Bay but is not recorded for the Canadian Arctic Archipelago (Gussow, 1933; Porsild & Cody, 1980). The species is at the northern edge of its range in the study area. Taxonomy here follows Elven et al. (2011), who recognized two subspecies and one variety in the species. Keil (2006) recognized the same three taxa but all at the rank of variety. Subspecies *angustifolia* is the only taxon present in Arctic regions of Nunavut and Northwest Territories (Porsild & Cody, 1980). This distinctive species does not begin flowering until mid-July in the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 27* (CAN-111005); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 97* (LEA); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3247* (CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3519* (CAN, US); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3619* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3921* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4379* (CAN, O).

Senecio lugens Richardson, Fig. 42—Black-tipped groundsel | American Beringian–Cordilleran

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We were unable to locate the voucher specimen from Bloody Falls (*Findlay 148*) for confirmation, but we do not doubt its identity. We made collections of this common species at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This species reaches its known eastern limit in the study area, where it is common and at the northern edge of its range. There are numerous mainland records west of the study area (Porsild & Cody, 1980; Saarela et al., 2013a).

Senecio lugens was described by Richardson in Franklin (1823: 747-748) from plants collected at Bloody Falls in the study area on 15 July 1821 (Houston, 1984). The protologue states "*Hab*. [Habitat] At Bloody Fall, where the Esquimaux were destroyed by the Northern Indians that accompanied Hearne, whence the specific name" (Richardson, 1823). The epithet *lugens* is the Latin word *lugere that means mourning, grieving, or lamenting* (https://en.wiktionary.org, accessed 11 August 2016). The type is housed at K (K000843626!) and bears the text "Sea Coast Arctic Am [? illegible] Dr. Richardson", "Type" and includes the label "312 Senecio lugens" corresponding to the number of the new taxon in Richardson's Appendix to Franklin (1823). We interpret this to be the holotype. The species was not recorded for Nunavut in Barkley (2006) even though the taxon was described from a location that is now part of the territory, and collections are mapped from western Nunavut in Porsild & Cody (1980). Cameron (2015) discusses the naming of this species by Richardson, in relation to the events witnessed by Samuel Hearne at Bloody Falls in 1771.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, near mouth of Coppermine River, [67.742123°N, 115.370253°W ± 300 m], *s.d.*, *J. Richardson 312* (CAN-236062); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 21 July 1951, *W.I. Findlay 162*

(DAO-178008, UBC-V229338); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 100* (LEA); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3192* (CAN, US); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3381* (CAN, UBC); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3405* (ALA, ALTA, CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3960* (CAN, O); top of steep cliff overlooking Coppermine River, just S of Kugluktuk, 67°48'59"N, 115°6'15.6"W ± 50 m, 20 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4421* (ALTA, CAN).

Symphyotrichum pygmaeum (Lindl.) Brouillet & Selliah, Fig. 43—Pygmy aster | American Beringian

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Sandstone Rapids, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This is a Beringian endemic that reaches its eastern limit at the Hope Bay area northeast of Bathurst Inlet (Cody & Reading, 2005; Porsild & Cody, 1980). In the Canadian Arctic Archipelago it is recorded from Banks and Victoria islands (Aiken et al., 2007). *Symphyotrichum pygmaeum* has been variously recognized as *Aster pygmaeus* Lindl. (Hultén, 1968; Porsild & Cody, 1980), *Eurybia pygmaeus* (Lindl.) G.L. Nesom (Nesom, 1994), *Aster sibiricus* subsp. *pygmaeus* (Lindl.) Á. Löve & D. Löve, and *Aster sibiricus* var. *pygmaeus*

(Lindl.) Cody, the latter combination proposed in the paper reporting Findlay's collections from the study area (Cody, 1954b). The species was transferred to *Symphyotrichum* ~~by~~ on the basis of molecular evidence (Brouillet & Selliah, 2004). Several of our collections were found to be mixed with *Eurybia sibirica*, a morphologically and ecologically similar species (see additional comments under that taxon). It is common along the upper, disturbed banks of the Coppermine River valley. There is a specimen of this taxon from "mouth of the Coppermine [River]" in the Gray Herbarium (GH, not seen) (Cody, 1954b).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 18 July 1951, *W.I. Findlay 143* (DAO-176900 barcode 01-01000616980); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3386a* (CAN, US); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3478a* (CAN); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3635b* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3964b* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4113b* (CAN); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4219* (ALA, ALTA, CAN, MO, MT, O); grassy sandy flats on

4921 extensive sandy floodplain of Coppermine River, below steep cliff above river and S of
4922 Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull*
4923 *4415a* (CAN).

4924 ***Taraxacum ceratophorum*** (Ledeb.) DC., Fig. S20—Horned dandelion | Circumboreal-polar

4925 Previously recorded from Kugluktuk, as *T. lacerum* (Cody, 1954b; Porsild & Cody, 1980). We
4926 were unable to locate the voucher for one previous record of this species (*Findlay 132*, as *T.*
4927 *lacerum* Greene) (Cody, 1954b). We made numerous collections throughout the study area.
4928 Taxonomy here follows Brouillet (2006c), who included *T. lacerum*, *T. dumetorum* Greene, *T.*
4929 *pellianum* A.E. Porsild, *T. maurolepium* G.E. Haglund, *T. pseudonorvegicum* Dahlstedt ex G.E.
4930 Haglund—taxa recognized in Porsild and Cody (1980)—in his concept of *T. ceratophorum*. This
4931 is the most common dandelion species in the study area, easily recognized by its conspicuously
4932 horned involucral bracts.

4933 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
4934 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 83* (DAO-178167 barcode 01-
4935 01000616997); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine
4936 River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3146*
4937 (CAN, US); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine
4938 River, 67°25'34.8"N, 115°33'27.8"W ± 20 m, 265 m, 05 July 2014, *Saarela*, *Sokoloff & Bull*
4939 *3437* (CAN); W shore of Tundra Lake, ca. 4.3 km SE of Sandstone Rapids, Coppermine River,
4940 67°25'43.7"N, 115°33'6.8"W ± 4 m, 262 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3446* (CAN,
4941 UBC); forest and slopes at confluence of Big Creek and Coppermine River, N side of
4942 Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m,

180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3545* (CAN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3576* (CAN); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3636* (CAN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N, 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3738* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3822* (CAN, O); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3958* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3963* (CAN); S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4209* (CAN); rocky beach along SE side of Coppermine River, above start of Bloody Falls, 67°44'16"N, 115°22'73.3"W ± 20 m, 17 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4223* (CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 20 July 2014, *Saarela*, *Sokoloff & Bull 4234* (ALA, CAN);W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4257* (CAN); grassy vacant lot in Kugluktuk,

67°49'30.5"N, 115°5'29.3"W ± 15 m, 21 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4342* (CAN, MO, QFA, WIN); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4390* (CAN).

Taraxacum holmenianum Sahlin—Holmen's dandelion | North American (N) | Noteworthy Record

This taxon is newly recorded for the study area. Our single collection was gathered at Richardson Bay on dry tundra on slightly higher ground above the estuary, where the species was uncommon growing with *Alopecurus borealis*, *Androsace chamaejasme*, *Carex maritima* and *Salix niphoclada*. There is an unpublished collection from a site west of the Coppermine River area, outside the study area, that was previously determined only to genus, which we have identified as this species (67°31'10"N, 116°10'0"W, 22 August 2002, *K.L. Reading 589*, DAO-788014 barcode 01-01000617005). A collection from Kugluktuk (*Wood s.n.*) is also here re-determined to this species. The nearest collections are from Tuktut Nogait National Park and vicinity, southern Victoria Island and the Adelaide Peninsula (Porsild & Cody, 1980; Saarela et al., 2013a). Elsewhere in the Canadian Arctic it is recorded from Axel Heiberg, Baffin, Banks, Emerald, Melville, Prince of Wales, Prince Patrick, Ellesmere, Somerset and Victoria islands (Aiken et al., 2007). This taxon was recognized as *Taraxacum pumilum* Dahlstedt in Porsild & Cody (1980), a name now considered to be a synonym of *T. holmenianum* (Brouillet, 2006c).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], edge of ditch behind Hudson's Bay store, [67°49'36"N, 115°5'36"W ± 1.5 km], 08 July 1958, *R.D. Wood s.n.* (CAN-253851); Richardson Bay, confluence of Richardson and Rae rivers at

Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3681* (CAN).

Taraxacum phymatocarpum J. Vahl—Northern dandelion | Circumpolar | Noteworthy Record

Previously recorded from Kugluktuk (*Findlay 24*) (Cody, 1954b; Porsild & Cody, 1980); we were unable to find this voucher for confirmation. We made collections in Kugluktuk, the vicinity of Fockler Creek and Coppermine Mountains. The latter sites represent a southern range extension for the species. This Arctic species is also recorded from Banks, Baffin, Devon, Emerald, Ellesmere, Melville, Prince Patrick and Victoria islands and a few northern mainland sites (Aiken et al., 2007; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3388* (CAN); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'34.8"N, 115°33'27.8"W ± 20 m, 265 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3438* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3766* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4238* (CAN).

Tephroseris frigida (Richardson) Holub—Arctic groundsel | Amphi-Beringian–North American (NW)

Previously recorded from Kugluktuk (Cody, 1954b, as Senecio frigidus (Richardson) Lessing; Porsild & Cody, 1980, as Senecio atropurpureus (Ledeb.) Fedtsch). We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This species is now recognized in *Tephroseris* (Rchb.) Rchb. (Barkley & Murray, 2006; Elven et al., 2011). It has an Amphi-Beringian distribution and reaches its eastern limit in the Bathurst Inlet area (Bennett, 2015; Porsild & Cody, 1980). It is recorded in the Canadian Arctic from mainland sites and Banks and Victoria islands (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). The basionym of this taxon, *Cineraria frigida* Richardson, was described from one or more collections made by J. Richardson along the Coppermine River between Point Lake and the Arctic coast, possibly within the study area (type BM001041629, BM001041630).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 173* (DAO-177812 barcode 01-01000616651); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 1 August 1951, *W.I. Findlay 231* (ACAD-30923, DAO-177810 barcode 01-01000616652, UBC-V40754); Rocky Defile [Rapids], on the Coppermine River, 25 July 1995, *T. Dolman 99* (LEA); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3309* (CAN, US); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3918* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4163* (CAN).

Tephroseris palustris subsp. ***congesta*** (R. Br.) Holub, Fig. 44—Marsh groundsel | European (C-S) & European (NE)–Asian (N/C)–amphi-Beringian–North American

Previously recorded from Kugluktuk, as *Senecio congestus* R. Br. (Cody, 1954b; Porsild & Cody, 1980). We made collections in Kugluktuk and on an island in the mouth of the Coppermine River. It is recorded in the Canadian Arctic from numerous Arctic and mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980). This taxon is now recognized in *Tephroseris* (Barkley & Murray, 2006; Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 July 1951, *W.I. Findlay 157* (DAO-177873 barcode 01-01000617002, UBC-V40756); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 164* (UBC-V151899); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 101* (LEA); Kugluktuk, corner of Tuktu Road and Saddleback Street, 67°49'23.8"N, 115°6'17.6"W ± 10 m, 21 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3093* (CAN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3725* (CAN); grassy vacant lot in Kugluktuk, 67°49'30.5"N, 115°5'29.3"W ± 15 m, 21 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4344* (CAN, UBC, US).

Tripleurospermum maritimum subsp. ***phaeocephalum*** (Rupr.) Hämet-Ahti—Arctic chamomile | Circumpolar

This taxon was recorded for the study area, as *Matricaria ambigua* (Ledeb.) Kryl., in Porsild & Cody (1980), based on a collection from Richardson Bay. This seashore species is rare in the study area; we encountered it only once, in Kugluktuk. Elsewhere in the Canadian Arctic it is

recorded from Baffin, Banks, Southampton and Victoria islands and mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980). Taxonomy here follows Elven et al. (2011) and Brouillet (2006d), who accept three subspecies. Two of these are present in Canada and only this one occurs in the Canadian Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], field near beach, south shore of Richardson Bay, 7 July 1955, *R.E. Miller 40* (CAN-242025); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 26 July 2014, *Saarela, Sokoloff & Bull 4424* (CAN).

Betulaceae [2/3]

Alnus alnobetula (Ehrh.) K. Koch, Fig. 45—American green alder | European (C) & European (NE)–Asian (N/C)–amphi-Beringian–North American | Noteworthy Collection

This taxon is newly recorded for the study area. The shrubs formed a dense thicket along the upper banks of Bigtree River, a tributary running into the Coppermine River in an area of dense white spruce forest, associated with *Betula glandulosa*, *Bromus pumpellianus*, *Dasiphora fruticosa* and *Salix alaxensis*. The Subarctic site of our collection, just below treeline, is slightly beyond the range for the species given in Furlow (1997). The taxon does not reach the Arctic in the study area but has been recorded from the Arctic ecozone in Nunavut at Bathurst Inlet (Bennett, 2015; Cody, 1954a; Porsild & Cody, 1980), where the shrubs were reported as growing up to five feet high, and along the upper Hood River (Gould & Walker, 1997). Bennett (2015) noted observations of the species from a helicopter upriver of Wilberforce Falls on the Hood River. Elsewhere in Nunavut the taxon is recorded from the southeastern mainland (Cody et al.,

2003; Porsild, 1950b; Porsild & Cody, 1980). This species also reaches the Arctic in the Mackenzie Delta area of Northwest Territories and northern Quebec and Labrador (Garneau, 2015a; Porsild & Cody, 1980).

Alnus alnobetula is the correct name for this woody shrub species that has long been recognized as *A. viridis* (Chaix) DC. (Chery, 2015; Greuter & Raab-Straube, 2011). Recognition of taxa in the circumpolar *A. viridis* complex is problematic (Banaev & Adel'shin, 2009). In a recent treatment, Furlow (1997) recognized three subspecies in North America. He recognized plants from central and eastern North America and Greenland as *A. viridis* subsp. *crispa* (=*A. alnobetula* subsp. *crispa* (Aiton) Raus), plants from northwestern North America as subsp. *fruticosa* (Ruprecht) Nyman (=*A. alnobetula* subsp. *fruticosa* (Rupr.) Raus), and plants from western North America as subsp. *sinuata* (Regel) A. Löve & D. Löve (=*A. alnobetula* subsp. *sinuata* (Regel) Raus). In a monograph of American *Alnus*, Furlow (1979) treated *A. viridis* subsp. *crispa* as ranging across Canada (as did Porsild and Cody 1980), and considered subsp. *fruticosa* as a synonym of that taxon. In his more recent treatment (Furlow, 1997), the ranges of subspecies *crispa* and *fruticosa* are shown to overlap in Northwest Territories and Nunavut in the area north of the Manitoba and Alberta border, and both are mapped as occurring at Bathurst Inlet. There is some confusion in this treatment, however, as the distributions listed in the key to the three *A. viridis* subspecies are discordant with the distributions listed after the taxon descriptions. Banaev & Adel'shin (2009) provide a specimen-based map of the North American distributions of *A. viridis* subsp. *crispa* and subsp. *fruticosa*, which they note to be "according to Furlow [1997, FNA treatment]"—but it is unclear how they arrived at the identifications of the specimens on which the distributions are based, particularly those in the zone of overlap of the two subspecies, as (1) Furlow (1997) included only range maps, not dot maps; (2) we are not

aware of any other specimen-based map for these taxa; and (3) none of the specimens at DAO and CAN, where the majority of specimens from these territories are housed, have been annotated as one or the other of these taxa. The subspecies as recognized by Furlow (1997) are extremely difficult to distinguish reliably (J.M. Saarela, pers. obs.) and for this reason we refrain from assigning our new collection to an infraspecific taxon, pending further study of the variation in northern North America.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3598 (*ALA, CAN, UBC).

Betula glandulosa Michx.—Dwarf birch | North American (N)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We were unable to locate some earlier collections from Bloody Falls (*Findlay 138*) and Kugluktuk (*Findlay 47, 64*) for confirmation, but it is unlikely that these sheets of this well-known species are misidentified. We made collections of this common species at Fockler Creek, Melville Creek, Kugluk (Bloody Falls) Territorial Park and Heart Lake. Elsewhere in the Canadian Arctic this species is recorded from southern Baffin Island, Banks, Southampton and Victoria islands, and across the mainland (Aiken et al., 2007; Cody, 1996a; Cody et al., 1989; Garneau, 2015a; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

Betula glandulosa and *B. nana* subsp. *exilis* (Suckachev) Hultén are northern-ranging taxa that have been variously recognized as a single species, due to considerable morphological intergradation where their ranges overlap, or separate taxa (reviewed in de Groot et al., 1997). For example, Furlow (1997), Elven et al. (2011), Cody (2000) and Hultén (1968) treat them as

separate taxa, whereas Porsild & Cody (1980) apparently treat them as a single taxon, since the name *B. nana* is not mentioned. According to the maps in Furlow (1997), the ranges of both taxa overlap extensively on mainland Nunavut and Northwest Territories, including in the study area. Hultén (1968) noted extensive intergradation where their ranges overlap. Although numerous molecular studies of *Betula* have been conducted (Järvinen et al., 2004; Li et al., 2007; Schenk et al., 2008), *B. nana* and *B. glandulosa* were both included in only a single study, based on nuclear ribosomal ITS sequences, in which *B. nana* (subsp. *nana*; an accession from Sweden) and *B. glandulosa* were part of different clades (Li et al., 2005). Their phylogenetic affinities are unclear. Using the key in Furlow (1997), our collections key to *B. nana* subsp. *exilis*; however, there is a serious problem in the key. Although there is no overlap in the ranges given for leaf length in lead 10 separating the taxa into groups [0.5–2 cm for a group of taxa including *B. nana* and 2.5–5(–7) cm for a group of taxa including *B. glandulosa*], the subsequent lead to *B. glandulosa* (lead 14+) contradicts the earlier one (lead 10+) by including blades that are up to one cm shorter than stated in the earlier lead [leaf blades 1–2(–4) cm]. Moreover, the leaf blade length range given in the description for *B. glandulosa* (0.5–3 cm) differs from that in the final lead to the taxon, and it fully overlaps with the range given in the description of *B. nana* subsp. *exilis* (0.5–1.2 cm). The circumscriptions of these taxa are not at all clear, and a detailed taxonomic study combining morphological and molecular characters is needed for these taxa. Pending clarification of the statuses of these taxa, we treat them as a single taxon as in Porsild & Cody (1980), even though the name *B. nana* has priority. Populations of *B. glandulosa* from the Canadian Arctic are genetically distinct compared to those from Greenland, Iceland and Europe (Alsos et al., 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17170* (CAN-127669); Kugluktuk, 67.81875°N, 115.086833°W, 10 July 2006, *J. Davis 623* (CAN-597648); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3044* (ALA, ALTA, CAN, MO, UBC); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3132* (CAN, MO, MT, O); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3525* (CAN, NY, QFA, WIN); S-facing slopes above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 50 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3644* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3826* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, just above Bloody Falls, 67°44'22.6"N, 115°22'52"W ± 20 m, 40 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4106* (CAN, US); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4280* (CAN).

Betula occidentalis Hook., Fig. 46—Water birch | North American | Noteworthy Record

Newly recorded for the study area. We found the species at eight sites ranging from the Subarctic to near Kugluktuk, growing on south-facing slopes, usually on or near upper ridges, as a small, multi-branched shrub ranging from two to 13 feet tall, and always larger than the *B. glandulosa*

shrubs it grew among. At each collection site only one to three plants were found, similar to the frequency noted elsewhere for the species (Scott et al., 1992). Associated species include *Betula glandulosa*, *Dasiphora fruticosa*, *Empetrum nigrum*, *Juniperus communis* subsp. *depressa*, *Linnaea borealis* subsp. *americana*, *Picea glauca*, *Pyrola grandiflora*, *Rhododendron groenlandicum*, *Salix reticulata*, *Vaccinium uliginosum* and *Vaccinium vitis-idaea*. It was recently observed (July 2016) about halfway between Kugluktuk and the Richardson Bay (67.8513°N, 115.3262°W) (M. Lamont, pers. comm.). Our collections represent a range extension with respect to the known distribution for the species; the nearest recorded populations are from the eastern shore of Great Bear Lake (Dugle, 1966; Furlow, 1997; Porsild & Cody, 1980). The species reaches the Low Arctic in the Mackenzie Delta area (Furlow, 1997; Porsild & Cody, 1980), Bathurst Inlet (Scotter and Zoltai 31969, DAO;Cody et al., 1984) and Burnside River near Bathurst Inlet (Bennett, 2015) but has not been reported elsewhere from the Arctic ecozone or from sites between these areas. The earlier Bathurst Inlet record is not mapped in Furlow (1997), nor is the species included in the Checklist of the Panarctic Flora (Elven et al., 2011). Elsewhere in Nunavut the species has been recorded on the southeastern mainland in the vicinity of Nueltin Lake (Porsild, 1950b; Porsild & Cody, 1980). In the portion of Furlow's (1997) key distinguishing *B. occidentalis* from *B. kenaica* W.H. Evans (Alaska, Yukon) and the northeastern North American *B. minor* (Tuckermann) Fernald, the central lobe of infructescence scales is described as being "much shorter than lateral lobes", whereas in the description it is described as "narrower and longer than ascending lateral lobes", the latter being correct.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3572* (ALA, ALTA,

CAN, MO, MT, QFA); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela, Sokoloff & Bull 3604* (CAN, MO, MT); S-facing slopes above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 50 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3645* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4079* (CAN, O, UBC, US, WIN); S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4211* (ALTA, CAN); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine River, 67°48'33.8"N, 115°12'52.9"W ± 15 m, 39 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4318* (CAN, NY, QFA, WIN); rocky cliffs on S side of Kugluktuk, 67°49'13"N, 115°5'55.8"W ± 50 m, 65 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4405* (CAN, O); top of steep cliff overlooking Coppermine River, just S of Kugluktuk, 67°48'59"N, 115°6'15.6"W ± 50 m, 20 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4420* (CAN, UBC, US).

Boraginaceae [1/1]

Mertensia maritima subsp. ***tenella*** (Th. Fr.) Elven & Skarpaas, Fig. 47A—Seaside bluebells, sea-lungwort | Amphi-Beringian–North American (N)–amphi-Atlantic (W)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We only found this coastal species once, on an island in the mouth of the Coppermine River. Elsewhere in the Canadian Arctic it is recorded from Baffin, Banks, Devon, Coats, Southampton and Victoria

islands and several mainland sites (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 176* (DAO-178958 barcode 01-01000619666, UBC-V40800); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 1 July 1951, *W.I. Findlay 58* (DAO-832282 barcode 01-01000619665); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3714* (CAN).

Brassicaceae [8/18]

Braya glabella Richardson subsp. ***glabella*—**Smooth northern rockcress | Amphi-Beringian–North American (N)

This Arctic-alpine taxon, distributed across the Low Arctic, was described from the Copper Mountains [Coppermine Mountains] along the Coppermine River (isotype GH0018822!). The type location was not mapped in contemporary treatments, which have Bathurst Inlet and eastern Great Bear Lake as the nearest locations of occurrence (Harris, 1985; Porsild & Cody, 1980). We only encountered it at two sites in the vicinity of Fockler Creek, where it grew in a wet sedge meadow and mesic to wet tundra. Elsewhere in the Canadian Arctic it is recorded from Baffin, Banks, Southampton and Victoria islands and a few mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River,

67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3225* (CAN); flats N of Fockler Creek, between Fockler Creek and Sleigh Creek, ca. 0.6 km SE of Sandstone Rapids, Coppermine River, 67°26'43.3"N, 115°37'40"W ± 3 m, 157 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3484* (ALA, CAN, UBC).

Braya humilis (C.A. Mey.) B.L. Rob. subsp. ***humilis***, Fig. 47B—Low rockcress, Northern rockcress | Asian (N/C)–amphi-Beringian–North American (N) | Noteworthy Record

Our collections of this species are the first records for the study area (Harris, 1985; Porsild & Cody, 1980). We found the species at several sites at Fockler Creek, Melville Creek, Big Creek and Kugluk (Bloody Falls) Territorial Park. To the west it is known from eastern Great Bear Lake, Tuktut Nogait National Park and vicinity, and Banks and Victoria islands (Harris, 1985; Porsild & Cody, 1980; Saarela et al., 2013a). To the east it is known from the Bathurst Inlet area (Cody & Reading, 2005; Porsild & Cody, 1980), the eastern limit of the taxon on mainland Nunavut. Our collections close the gap between the eastern and western localities. Taxonomy here follows Harris (2006) and Harris (2010), which differ in some respects from Al-Shehbaz & German (2014) (though taxa in the study area are not affected). This taxon was recognized as *B. richardsonii* (Rydberg) Fernald in Porsild & Cody (1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3397* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3493* (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of

Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3562* (CAN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'49.8"N, 115°29'27.4"W ± 10 m, 67 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3737* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3860* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, upper pond just W of Bloody Falls, 67°44'39.5"N, 115°22'28.9"W ± 10 m, 15 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3897* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3965* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4114* (CAN).

Cardamine bellidifolia L.—Alpine bittercress | Circumpolar-alpine | Noteworthy Record

Our two collections from the Fockler Creek area are the first records of the species for the study area. The species was uncommon and was growing along the lower edge of a snowbed community on a north-facing slope, with *Draba simmonsii*, *Ranunculus nivalis*, *R. pygmaeus* and the lichen *Masonhalea richardsonii*. There is a nearby record from a site east of the confluence of the Kendall and Coppermine rivers, just outside the study area (Reading 302, DAO – Cody & Reading, 2005). This collection along with ours close a considerable gap between Bathurst Inlet, Hood River and the Mackenzie Delta area (Gould & Walker, 1997; Porsild & Cody, 1980). The taxon is conspicuously absent from most of Banks and Victoria islands, but is known from many

sites throughout the rest of the Canadian Arctic Archipelago and several sites on the Arctic mainland (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980). Taxonomy follows Al-Shehbaz et al. (2010a) and Elven et al. (2011), the latter recognizing the taxon as subsp. *bellidifolia* with no mention of other subspecies in the Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3140* (CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3180* (CAN).

Cardamine digitata Richardson—Richardson's bittercress | Amphi-Beringian-North American (NW)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We were unable to locate *Findlay 135* (DAO-184915) from Bloody Falls for confirmation. We made collections in both of these areas, as well as at Fockler Creek and Heart Lake. This species was not recorded for Nunavut in Al-Shehbaz et al. (2010a) although it is widespread on mainland Nunavut (Korol, 1992; Porsild & Cody, 1980). It is also recorded for Banks, Prince Charles, Southampton and Victoria islands (Aiken et al., 2007). This species was described by Richardson (1823) from one or more collections made along the Coppermine River from Point Lake to the coast; the type specimen or other original material may have been collected in the study area. Putative type material has been identified at BM (BM000584314), K (K000697786) and GH

(GH000189097) labelled “N.W. Am. – Frank. Exped.” is considered to be an isotype (det. R. Rollins, 1987).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 06 July 1958, *R.D. Wood s.n.* (CAN-265542); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 2 July 1951, *W.I. Findlay 61* (ALTA-VP-9553, DAO-184914, UBC-V40793); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3053* (CAN); Flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3121* (CAN, MO); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3923* (CAN, UBC); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4284* (ALA, CAN).

Cardamine nymanii Gand., Fig. S21—Cuckoo flower, Meadow bittercress | Circumpolar

Previously recorded from Kugluktuk, as *Cardamine pratensis* var. *angustifolia* Hook. (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy here follows Al-Shehbaz et al. (2010a), who recognized this taxon at species level, as *C. nymanii*, of which *C. pratensis* var. *angustifolia* is a synonym. Elven et al. (2011)

provisionally recognized the taxon as *C. polemonioides* Rouy, a more broadly circumscribed taxon that includes *C. nymanii* and corresponds to a single major Arctic taxon.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 175* (DAO-184954, not seen); Coppermine [Kugluktuk], between R.C. Mission and DOT, [67°49’36”N, 115°5’36”W ± 1.5 km], 12 July 1958, *R.D. Wood s.n.* (CAN-265540); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3268* (CAN); Sleigh Creek, near its confluence with small, unnamed tributary, ca. 1 km SE of Sandstone Rapids, Coppermine River, 67°27'2"N, 115°37'28.7"W ± 10 m, 150 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3467* (CAN, MO); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3903* (CAN); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine River, 67°48'33.4"N, 115°12'38.8"W ± 25 m, 31 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4319* (CAN).

Descurainia sophioides (Fisch. ex Hook.) O.E. Schulz—Northern tansy mustard | Asian (N)–amphi-Beringian–North American (NW)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections of this disturbance-loving species at Sandstone Rapids in the vicinity of Fockler Creek and Heart Lake. Elsewhere in the Canadian Arctic this species is recorded from Baffin,

Banks and Victoria islands and a few sites on the mainland (Aiken et al., 2007; Cody, 1996a; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 27 June 1951, *W.I. Findlay 39* (ALTA-VP-9646, DAO-184828 barcode 01-01000529620, UBC-V40796); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 90* (DAO-184829 barcode 01-01000529652); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 8 July 1951, *W.I. Findlay 97* (ACAD-30919, DAO-184831 barcode 01-01000529651); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 8* (CAN-63016); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 27 June 1951, *W.I. Findlay 39* (DAO-184828 barcode 01-01000529620); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 90* (DAO-184829 barcode 01-01000529652); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 163* (UBC-V151900); Coppermine [Kugluktuk], near the airstrip, [67.8170028°N, 115.1342°W ± 1.2 km], 23 June 1975, *F.W. Schueler & J.D. Rising s.n.* (CAN-393649); Coppermine [Kugluktuk], old Eskimo [sic] camping places, [67°49’36”N, 115°5’36”W ± 1.5 km], 07 July 1958, *R.D. Wood s.n.* (CAN-265539); Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23 June 1999, *C.L. Parker & I. Jonsdottir 9104* (ALA); Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0635* (DAO, det. B.A. Bennett, Dec. 2013); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3474* (CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4307* (CAN, MO).

Draba cinerea Adams, Fig. S22—Greyleaf draba | Circumboreal-polar

Previously recorded from Kugluktuk (Cody 1954b; Porsild and Cody 1980). We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk and vicinity. This species is widespread throughout the Canadian Arctic Archipelago and is also recorded from several mainland sites (Aiken et al., 2007; Cody et al., 2003; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 15 June 1951, *W.I. Findlay 15B* (DAO-185055), det. I.A. Al-Shehbaz & S.I. Warwick; second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3215* (CAN, MO); second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3216* (CAN); E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3335* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m, 422 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3747* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3771* (CAN); SW-facing slopes of shallow gully in sand hills above Bloody Falls, SE side of Coppermine River across river from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4180* (CAN, UBC); SW-facing slope above Bloody Falls, SE side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 5 m, 68 m, 19 July 2014, *Saarela*,

Sokoloff & Bull 4199 (CAN); gravel roadside SW of Kugluktuk, S side of road to Heart Lake cemetery, just beyond sewage retention pond, 5.59 km SW of mouth of Coppermine River, 67°48'39"N, 115°12'38.7"W ± 25 m, 46 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4322* (CAN); gravel roadside SW of Kugluktuk, S side of road to Heart Lake cemetery, just beyond sewage retention pond, 5.59 km SW of mouth of Coppermine River, 67°48'39"N, 115°12'38.7"W ± 25 m, 46 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4321b* (CAN).

Draba fladnizensis Wulfen—Austrian draba | Circumpolar-alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Kugluktuk, Coppermine Mountains and Kugluk (Bloody Falls) Territorial Park. A specimen previously determined as *D. fladnizensis* (*Porsild 17178*) is here re-determined to *D. glabella*. This species has a scattered distribution in the Canadian Arctic, with records from Baffin, Banks, Cornwallis and Southampton islands and a few mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 28 June 1951, *W.I. Findlay 44* (DAO-185092 barcode 01-01000560616); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3072* (CAN); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3073* (CAN); E end of small, unnamed lake on W bank of Coppermine River, ca. 8.3 km NNE of Sandstone Rapids, 67°31'30.8"N, 115°36'16.1"W ± 50 m, 126 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3662* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull*

3772 (CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4077* (CAN).

Draba glabella Pursh, Fig. S23—Smooth draba | Circumboreal-polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made numerous collections of this common species throughout the study area. It is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody et al., 2003; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a) but there is a conspicuous gap in the central Canadian Arctic islands; the gap, however, is partially closed by a recent report of the taxon from Somerset Island (Sokoloff, 2015). Taxonomy follows Al-Shehbaz et al. (2010b) and Elven et al. (2011). The collection *Bennett 13-0646* from near the Kugluktuk Airport was determined by G.A. Mulligan as *D. norvegica* Gunn., a name of problematic application. The only original material of *D. norvegica* is an illustration (the holotype), which corresponds to plants currently recognized as *D. glabella* rather than *D. norvegica* according to Elven et al. (2011), who treated *D. norvegica* auct., non Gunnerus as a synonym of the amphi-Atlantic species *D. rupestris* [R. Br. in] W.T. Aiton, the next available name. Porsild and Cody (1980) recognized *D. norvegica* Gunn. and considered *D. rupestris* R. Br. a synonym; they recorded its distribution as primarily amphi-Atlantic, with an outlying dot from the north shore of Great Slave Lake based on two records reported in Mulligan & Cody (1968). Elven et al. (2011) suggested that these disjunct records require confirmation. Al-Shehbaz et al. (2010b) also recognized *D. norvegica* Gunnerus in North America, with *D. rupestris* R. Br. as a synonym. Since we have not have examined the Kugluktuk collection ourselves, and given the taxonomic uncertainty surrounding application of the name *D. norvegica*, we tentatively include this collection here under *D. glabella*. If the

collection is confirmed as *D. norvegica* (or the taxon currently recognized under that name), it would be the first record for mainland Nunavut and a northwestern range extension.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 27 June 1951, *W.I. Findlay 38* (DAO-185120 barcode 01-01000560873); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 15 June 1951, *W.I. Findlay 15A* (ACAD-30954, ALTA-VP-9296, DAO-185118 barcode 01-01000560874); Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17177* (CAN-127849), *17176* (CAN-127815), *17178* (CAN-127854), *17793* (CAN-127855), *17179* (CAN-127867); Coppermine [Kugluktuk], near the airstrip, [67.8170028°N, 115.1342°W ± 1.2 km], 23 June 1975, *F.W. Schueler & J.D. Rising s.n.* (CAN-393652, CAN-393651); Coppermine [Kugluktuk], near Nursing Station, [67°49’36”N, 115°5’36”W ± 1.5 km], 07 July 1958, *R.D. Wood s.n.* (CAN-265536); Coppermine [Kugluktuk], near old Eskimo [sic] habitation above Anglican Mission, [67°49’36”N, 115°5’36”W ± 1.5 km], 07 July 1958, *R.D. Wood s.n.* (CAN-265533); Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0646* (DAO, as *D. norvegica* R. Br., det. G.A. Mulligan, April 2014 [see comments above]); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3060* (CAN); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3074* (CAN, MO); Kugluktuk, disturbed rocky/gravelly ground around house, top of NW-facing gravel slope, just SE of Igalik Building, 67°49'29.6"N, 115°6'31"W ± 10 m, 13 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3099* (CAN, MO, UBC); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3176* (ALA, ALTA, CAN); S of Fockler Creek, along small tributary that runs

into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3248* (CAN); NW-facing slope above tributary of Fockler Creek, just upstream of small tributary from its confluence with Fockler Creek, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3302* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3756* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, slope above Bloody Falls (W side) where Coppermine River narrows to Bloody Falls, 67°44'23"N, 115°22'35.9"W ± 25 m, 33 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3848a* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3889* (CAN); Kugluk (Bloody Falls) Territorial Park, sandy NE-facing slope above small creek in deep gully, about 0.5 km W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 41 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4018* (CAN, MT, O); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4034* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4255* (CAN, US, WIN); gravel roadside SW of Kugluktuk, S side of road to Heart Lake cemetery, just beyond sewage retention pond, 5.59 km SW of mouth of Coppermine River, 67°48'39"N, 115°12'38.7"W ± 25 m, 46 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4321a*

(ALA, CAN, MO, UBC); rocky cliffs on S side of Kugluktuk, 67°49'13"N, 115°5'55.8"W ± 50 m, 65 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4404* (CAN).

Draba lonchocarpa Rydberg—Lance-pod draba | Asian (NE)–amphi-Beringian–Cordilleran | Noteworthy Record

Our collections are the first confirmed records of *D. lonchocarpa* for Nunavut, representing a major range extension for the species. We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Heart Lake. The species was not recorded for Nunavut in Porsild & Cody (1980) and Al-Shehbaz et al. (2010b). There is a Nunavut specimen at CAN (junction of Bailey and Back rivers, 1-2 August 1955, *J.S. Tener 293,* CAN 235488) determined by G.A. Mulligan in 1972 as *D. lonchocarpa*. Porsild originally determined the specimen as *D. nivalis*. Upon re-examination of the specimen, we agree with Porsild's determination. The nearest known site of *D. lonchocarpa* is in the Mackenzie Mountains Sekwi Range (Cody, 1978). Taxonomy follows Al-Shehbaz et al. (2010b); Elven et al. (2011) recognized the taxon as *D. lonchocarpa* var. *lonchocarpa*. One unusual collection (no. 4291) with glabrous leaves and fruits twisted, glabrous and ca. 10 mm is tentatively placed here, on the basis of the twisted fruits; *D. lonchocarpa* typically has pubescent leaf blades. Our collections were gathered on dry rocky slopes and outcrops, growing with species such as *Anthoxanthum monticola* subsp. *alpinum*, *Arnica angustifolia*, *Betula glandulosa*, *Calamagrostis purpurascens*, *Cassiope tetragona*, *Dasiphora fruticosa*, *Empetrum nigrum*, *Poa glauca* and *Saxifraga tricuspidata*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*, *Sokoloff & Bull*

3336 (CAN); Kugluk (Bloody Falls) Territorial Park, slope above Bloody Falls (W side) where Coppermine River narrows to Bloody Falls, 67°44'23"N, 115°22'35.9"W ± 25 m, 33 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3848b* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3946* (CAN); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4035* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4164* (CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4291* (CAN).

Draba nivalis Lilj.—Snow draba | Circumpolar-alpine | Noteworthy Record

Our two collections of this species are the first records for the study area. There is a nearby record from the adjacent Nipartoktuak River, outside the study area (Cody, 1954b; Porsild & Cody, 1980). Our collections were both gathered in Kugluktuk, where the species was found on dry rock outcrops and ledges. The species is widely distributed in the Canadian Arctic (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Al-Shehbaz et al. (2010b) and Elven et al. (2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull*

3071 (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4241* (CAN).

Draba pilosa Adams ex DC.—Pilose draba | Asian (N)–amphi-Beringian | Noteworthy Record

This yellow-flowered draba is newly recorded for the study area, but was first collected in Kugluktuk in 1951. That collection was originally identified as *D. alpina* L. (Cody, 1954b), but is now determined as *D. pilosa* (det. G. Mulligan 2009). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The species was found in diverse habitats, including tussock tundra, dry tundra along a cliff top, low shrub tundra and a mesic sedge meadow. In 1999 it was collected in the Big Bend area of the Coppermine River, south of the study area (*Reading 2-1Ca*, DAO—mixed sheet with *D. cinerea*; *Reading 10-1*, DAO). Our collections and the 1999 ones fill in a gap between eastern Great Bear Lake, Tuktut Nogait National Park and vicinity, and Bathurst Inlet (Porsild & Cody, 1980; Saarela et al., 2013a). The species is not recorded from the Canadian Arctic Archipelago. Taxonomy follows Al-Shehbaz et al. (2010b) and Elven et al. (2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 55* (DAO-185011 barcode 01-01000587417); Kugluktuk, disturbed rocky/gravelly ground around house, top of NW-facing gravel slope, just SE of Igalik Building, 67°49'29.6"N, 115°6'31"W ± 10 m, 13 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3101* (CAN, MO); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3310* (CAN); Coronation Gulf, NW

peninsula of Expeditor Cove, ca. 9.6 km NW of Kugluktuk, 67°52'39.1"N, 115°16'43.8"W ± 10 m, 25 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3701* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3916* (CAN, MO); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3989* (CAN, O); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°43'58"N, 115°24'33.3"W ± 25 m, 109 m, 14 July 2014, *Saarela, Sokoloff & Bull 4002* (CAN, O).

Draba simmonsii Elven & Al-Shehbaz—Simmons' draba | North American (N) | Noteworthy Record

Our collection from Fockler Creek is the first report of the species for mainland Nunavut and represents a southern range extension for the species in the Central Arctic. The species was uncommon and was growing along the lower edge of a snowbed community on a north-facing slope with *Ranunculus nivalis*, *R. pygmaeus*, *Cardamine bellidifolia* and the lichen *Masonhalea richardsonii*. This yellow-flowered draba species was described recently, as part of the *D. micropetala* Hooker complex (Elven & Al-Shehbaz, 2008). It was included in a broadly circumscribed *D. alpina* L. in Porsild & Cody (1980). *Draba simmonsii* has its main distribution on the Canadian Arctic islands. Elven & Al-Shehbaz (2008) did not report any collections from mainland Nunavut (and there are none at CAN). They reported one collection from mainland Northwest Territories (Anderson River area, Cape Bathurst), but there are others from these general areas (specimens at CAN).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3138* (CAN).

Erysimum coarctatum Fernald, Fig. 48—Wallflower | North American (N) | Noteworthy Record

This species was recorded previously from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980), treated as *E. inconspicuum* (S.Wats.) MacMill. It is now recognized as a separate species (Al-Shehbaz, 2010a). Given the revised circumscription, we consider it newly recorded for the study area. Keys to distinguish the species are given in Al-Shehbaz (2010a) and Saarela et al. (2013a). On the mainland Canadian Arctic this taxon is known from the Lower Brock River area, Northwest Territories (Saarela et al., 2013a) and is distributed as far east as Bathurst Inlet (Porsild & Cody, 1980) and Hood River (Gould & Walker, 1997). It is not recorded for the Canadian Arctic Archipelago. It was not reported for Nunavut in Al-Shehbaz (2010a), even though it has been documented there as *E. inconspicuum* (Cody, 1954b; Porsild & Cody, 1980). We made collections at Sandstone Rapids, Kugluk (Bloody Falls) Territorial Park and Heart Lake. In the study area it grows in disturbed areas, including on slopes and sandstone cliffs and along ridges and creek beds. At some sites, populations comprised only a few scattered plants while at others the species was locally common.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls on Coppermine River, 67°44'N, 115°23'W, 27 July 1951, *W.I. Findlay 203* (DAO-185399 barcode 01-01000581796); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 87* (DAO-185398 barcode 01-01000581797); Coppermine River, east bank, 10 July 1955, *R.E. Miller 87* (CAN-241981); second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone

Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3210* (CAN); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3325* (CAN); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3402* (CAN, UBC); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3471* (ALTA, CAN, MO); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4085* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4124* (ALA, CAN); gravel roadside SW of Kugluktuk, S side of road to Heart Lake cemetery, just beyond sewage retention pond, 5.59 km SW of mouth of Coppermine River, 67°48'39"N, 115°12'38.7"W ± 25 m, 46 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4324* (CAN).

Erysimum pallasi (Pursh) Fernald—Pallas' wallflower | Asian (N)–amphi-Beringian–North American (N) | Noteworthy Record

Our collection is the first record of the species for the study area, closing a gap on the mainland between Great Slave Lake and Bathurst Inlet (Porsild & Cody, 1980). We encountered this conspicuous pink-flowered species only once, growing on manufactured gravel slopes around Kugluktuk's sewage retention pond, growing with *Artemisia tilesii*, *Chamerion latifolium*, *Descurainia sophioides*, *Erysimum coarctatum*, *Poa glauca* and *Puccinellia nuttalliana*. A

nearby collection outside the study area was made on the shore of an island in Coronation Gulf northeast of the mouth of the Coppermine River (Findlay 101, DAO; Cody, 1954b; Porsild & Cody, 1980). The record mapped in the study area in Porsild & Cody (1980) is likely this off-shore record. Elsewhere in the Canadian Arctic the species is known from northern Baffin Island, Banks, Ellesmere, Melville and Victoria islands, and on western mainland sites as far east as the Bathurst Inlet area (Aiken et al., 2007; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a); there is also a record from southeastern mainland Nunavut (Cody & Reading, 2005).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: manufactured gravel slopes around Kugluktuk's sewage retention pond, 5.16 km SW of Coppermine River, 67°48'52.38"N, 115°12'10.3"W ± 10 m, 35 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4330* (CAN, UBC).

Eutrema edwardsii R. Br.—Edward's eutrema | Circumpolar–alpine | Noteworthy Record

Newly recorded for the study area. We made two collections in the Fockler Creek area, which close a gap in distribution between Bernard Harbour and a site to the east of the study area (Porsild & Cody, 1980). This species is widespread in the Canadian Arctic (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: just above second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'3.3"N, 115°37'25.6"W ± 5 m, 169 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3219* (CAN); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3303* (CAN).

Physaria arctica (Wormsk. ex Hornem.) O'Kane & Al-Shehbaz, Fig. 49—Arctic bladderpod | Asian (N)–amphi-Beringian–North American (N) | Noteworthy Record

Our collections are the first record of the species for the study area (Porsild & Cody, 1980; Rollins & Shaw, 1973). We encountered and collected it at Big Creek, near Muskox Rapids and at Bloody Falls. On mainland Nunavut this circumpolar Arctic-alpine taxon is known only from a few records on the Adelaide and Boothia Peninsulas (Porsild & Cody, 1980, as Lesquerella arctica Wormsk. ex Hornem.; Rollins & Shaw, 1973). In the western Arctic, the nearest mainland locations are eastern Great Bear Lake, Northwest Territories, and adjacent to Dolphin and Union Straight in western Nunavut (Porsild & Cody, 1980; Rollins & Shaw, 1973). In the Canadian Arctic Archipelago the species is known from Baffin, Banks, Coats, Devon, Ellesmere, Southampton and Victoria islands (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3551* (CAN, MO); esker on E side of Coppermine River, 0.6 km SSE of Muskox Rapids, 67°22'40"N, 115°42'38.5"W ± 50 m, 172 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3610* (CAN); top of hill on E side of Bloody Falls, across Coppermine River from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'0.3"W ± 50 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4177* (ALA, ALTA, CAN, MO, O).

Transberingia bursifolia (DC.) Al-Shehbaz & O’Kane subsp. ***bursifolia*—**Soft fissurewort | Asian (NE)–amphi-Beringian–North American (N)

Previously recorded from Kugluktuk, where the taxon was found growing along and at the base of a cliff face, and treated as *Halimolobos mollis* (Hook.) Rollins (Cody, 1954b; Porsild & Cody, 1980). We did not encounter this taxon in 2014. There are only a few records of this species elsewhere in the Canadian Arctic, from Banks, Baffin and Ellesmere islands(Aiken et al., 2007). It was recently reported from Cambridge Bay, the first record for Victoria Island (Bennett, 2015). There are no records for mainland sites east of the study area. The species is now recognized in the genus *Transberingia* Al-Shehbaz & O'Kane (Al-Shehbaz, 2010b; Al-Shehbaz & O'Kane, 2003; Elven et al., 2011), with two subspecies. Only the nominate subspecies occurs in the Arctic (Al-Shehbaz, 2010b).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 23 June 1951, *W.I. Findlay 33* (DAO-185260 barcode 01-01000576171); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 7 June 1951, *W.I. Findlay 7* (DAO-185263 barcode 01-01000576172).

Campanulaceae [1/1]

Campanula uniflora L.—Arctic harebell | Amphi-Beringian–North American (N)–amphi-Atlantic | Noteworthy Record

Newly recorded for the study area. Collections were made at Fockler Creek and Kugluk (Bloody Falls) Territorial Park in low shrub tundra, on dry rocky slopes, on dry windswept tundra and in a mesic sedge meadow. Our collections close a small gap between and Bernard Harbour and Epworth Harbour (Macoun & Holm, 1921; Porsild & Cody, 1980). Elsewhere in the Canadian Arctic this species is known from Baffin, Banks, Coats, Devon, Ellesmere, Melville, Somerset,

Southampton and Victoria islands and sites on the mainland (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3324* (CAN); SW-facing slope above (N side) of Fockler Creek, ca. 3.2 km SE of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25 m, 193 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3412* (CAN); ridge top N of Fockler Creek and S of Tundra Lake, ca. 3.8 km SE of Sandstone Rapids, Coppermine River, 67°25'20.4"N, 115°34'17.2"W ± 3 m, 273 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3424* (CAN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3992* (CAN).

Caryophyllaceae [9/18]

Arenaria humifusa Wahlenb., Fig. 50A—Creeping sandwort | North American (N)–amphi-Atlantic

Previously recorded from Kugluktuk (Porsild & Cody, 1980). Our collections were gathered at Fockler Creek, Sleigh Creek and Big Creek. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Coats, Cornwallis, Ellesmere, Southampton and Victoria islands, mainland sites in Northwest Territories and Nunavut, and northern Quebec and Labrador (Aiken et al., 2007; Blondeau, 2015a; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a`L.J. Gillespie and J.M. Saarela, unpubl. data).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17171* (CAN-127678); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3264* (CAN); Sleigh Creek, near its confluence with small, unnamed tributary, ca. 1 km SE of Sandstone Rapids, Coppermine River, 67°27'2"N, 115°37'28.7"W ± 10 m, 150 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3468* (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3544* (CAN).

Cerastium alpinum L. subsp. ***alpinum***—Alpine chickweed | Amphi-Atlantic (W)

Previously recorded from Kugluktuk by Cody (1954b) but not mapped in Porsild & Cody (1980). We made collections at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. The *Cerastium alpinum–C. arcticum* complex is a taxonomically complicated polyploid group (Brysting & Elven, 2000; Elven et al., 2011). Taxonomy here follows Morton (2005a). In Elven et al. (2011) our plants correspond to *C. alpinum* "arctic race", an unnamed taxon that they provisionally accept. The global range given is for the species, not the infraspecific taxon, since there are differing circumscriptions of infraspecific taxa in recent literature. Aiken et al. (2007) recorded this taxon from eastern islands in the Canadian Arctic Archipelago and a few mainland Nunavut sites. It is widespread in northern Quebec and Labrador (Blondeau, 2015a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 16* (DAO-183644 barcode 01-01000617018); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3179* (CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3497* (ALA, ALTA, CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4120* (CAN).

Cerastium beeringianum Cham. & Schltdl.—Bering Sea chickweed | Asian (N)–amphi-Beringian–North American (N)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park, and on an island in the mouth of the Coppermine River. Taxonomy follows Morton (2005a), who did not accept infraspecific taxa. Our plants likely correspond to *C. beeringianum* var. *beeringianum* in Elven et al. (2011). This is the common chickweed species in the area. Elsewhere in the Canadian Arctic this species is widespread in western Arctic islands, recorded from southern sites in the eastern Arctic islands, and recorded from numerous mainland sites (Aiken et al., 2007; Blondeau, 2015a; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls on Coppermine River, 67°44'N, 115°23'W, 27 July 1951, *W.I. Findlay 204* (DAO-183660 barcode 01-

5734 01000617031); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 16 July 1951, *W.I. Findlay*
5735 *13*0 (DAO-183643 barcode 01-01000617032); ibid., 4 July 1951, *W.I. Findlay 91* (DAO-183642
5736 barcode 01-01000617028); ibid., 2 July 1951, *W.I. Findlay 63* (DAO-183657 barcode 01-
5737 01000617033, UBC-V40797); Kugluktuk, disturbed rocky/gravelly ground around house, top of
5738 NW-facing gravel slope, just SE of Igalik Building, 67°49'29.6"N, 115°6'31"W ± 10 m, 13 m, 30
5739 June 2014, *Saarela*, *Sokoloff & Bull 3098* (CAN); E side of Fockler Creek, in valley just above
5740 creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids,
5741 67°26'21.4"N, 115°38'54"W ± 5 m, 140 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3360* (CAN,
5742 UBC); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km
5743 SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*,
5744 *Sokoloff & Bull 3380* (CAN, MO, MT, O); S-facing sandstone cliffs above Coppermine River,
5745 ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July
5746 2014, *Saarela*, *Sokoloff & Bull 3638* (CAN, K, NY, QFA, US, WIN); unnamed island just E (ca.
5747 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m,
5748 08 July 2014, *Saarela*, *Sokoloff & Bull 3717* (ALA, ALTA, CAN); Kugluk (Bloody Falls)
5749 Territorial Park, along wet, muddy, and deeply pitted ATV trail ca. 1 km W of Bloody Falls,
5750 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4099* (CAN).

5751 ***Eremogone capillaris*** (Poir.) Fenzl subsp. ***capillaris***, Fig. 50B—Thread-leaved sandwort | Asian
5752 (C-NE)–amphi-Beringian | Noteworthy Record

5753 Our collection is the first record for the study area and Nunavut (Hartman et al., 2005; Porsild &
5754 Cody, 1980), and represents a northeastern range extension from the nearest collections from
5755 Great Bear Lake (Porsild, 1943, as Arenaria nardifolia Ledeb.; Porsild & Cody, 1980, as A.
5756 capillaris var. nardifolia (Ledeb.) Reg.). The species was gathered in the Subarctic portion of the

study area on a dry, sandy, gravelly and sparsely vegetated terrace on the south side of the Kendall River growing with *Arctous rubra*. Elsewhere in Canada it reaches the Arctic in the Mackenzie Delta area (Porsild & Cody, 1980). *Arenaria* subg. *Eremogone* (Fenzl) Fenzl, which includes this species, is now recognized as the separate genus, *Eremogone* Fenzl, a circumscription supported by molecular evidence (Harbaugh-Reynaud et al., 2010).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3570* (ALA, ALTA, CAN, O, UBC).

Honckenya peploides subsp. ***diffusa*** (Hornem.) Hultén ex V.V. Petrovsky, Fig. 50C—Beach sandwort, seabeach sandwort, beach greens | Circumpolar

Previously recorded from Kugluktuk (Cody, 1954b, as Arenaria peploides L.; Porsild & Cody, 1980). Taxonomy follows Elven et al. (2011). We made collections of this seashore species on an island at the mouth of the Coppermine River and along the coast west of Kugluktuk. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Coats, King William, Salisbury, Southampton and Victoria islands and numerous mainland sites (Aiken et al., 2007; Blondeau, 2015a; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 13 July 1951, *W.I. Findlay 115* (DAO-183772 barcode 01-01000616641); ibid., *W.I. Findlay 59* (ACAD-30918, DAO-183773 barcode 01-01000616642, UBC-V40798); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T.*

Dolman 90 (LEA); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3708* (ALA, ALTA, CAN); sandy beach along Coronation Gulf, 3.9 km W of mouth of Coppermine River, 67°49'37.8"N, 115°10'31.8"W ± 50 m, 9 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4337* (CAN, UBC).

Minuartia biflora (L.) Schinz & Thell.—Mountain stitchwort | Circumpolar–alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980) but we were unable to locate a voucher for confirmation. We made collections of this species at Fockler Creek, Escape Rapids and Coppermine Mountains. Elsewhere in the Canadian Arctic it is recorded from Baffin, Banks, Ellesmere, Somerset and Victoria islands, some mainland sites in Nunavut and Northwest Territories, and numerous sites in northern Quebec and Labrador (Aiken et al., 2007; Blondeau, 2015a; Cody & Reading, 2005; Cody et al., 1984; Porsild & Cody, 1980; Saarela et al., 2013a). The recent transfer of species formerly treated in the polyphyletic *Minuartia* L. to the genera *Cherleria*, *Pseudocherleria* Dillenb. & Kadereit, *Mononeuria* Reich and *Sabulina* Reich. (Dillenberger & Kadereit, 2014) in the context of the Canadian Arctic flora is reviewed in Gillespie et al. (2015). *Minuartia biflora* is part of a clade of Caryophyllaceae that is now recognized as the genus *Cherleria* L., but a combination for this species in *Cherleria* is not yet available. Thus we treat the taxon in its traditional sense here.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3156* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N,

115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3300b* (CAN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3732* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3759* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3774* (CAN).

Sabulina elegans (Cham. & Schltdl.) Schischk., Fig. 51—Elegant stitchwort | Amphi-Beringian–Cordilleran | Noteworthy Record

This is the first report of the species for the study area and for Nunavut. We collected it at Fockler Creek, Big Creek and west of Kugluktuk. The species was uncommon at each of the three sites where we collected it. One of Findlay's collections (no. 252) from Kugluktuk, previously determined as *Minuartia rossii* is here re-determined as *S. elegans*. Two collections reported as *Minuartia rossii* from the Big Bend area of the Coppermine River just outside the study area (Cody et al., 2003) have been re-determined (det. J.M. Saarela, 2015) as *S. elegans* (*Reading 3-1*, *31-1*). All of these collections represent an eastern range extension for the species from Tuktut Nogait National Park and vicinity (Saarela et al. 2013a). The Coppermine River area is the eastern limit of this amphi-Beringian species. Elsewhere in the Canadian Arctic this species is known from mainland Northwest Territories and northwestern Victoria Island (Northwest Territories) (Aiken et al., 2007; L.J. Gillespie and J.M. Saarela, unpubl. data).

Species treated here in *Sabulina* Reich. were recently transferred from the polyphyletic genus *Minuartia* L. (Dillenberger & Kadereit, 2014). These nomenclatural changes in the context of the Canadian Arctic flora are reviewed in Gillespie et al. (2015). Species circumscriptions

follow Rabeler et al. (2005) and Elven et al. (2011), who recognize *S. elegans* (formerly *M. elegans* (Cham. & Schltdl.) Schischk.) as distinct from *S. rossii* (formerly *M. rossii* (R. Br.) House), following Wolf et al. (1979). Porsild & Cody (1980) treated it as a subspecies, *Minuartia rossii* subsp. *elegans* (Cham. & Schltdl.) Rebr. A key distinguishing *S. elegans* and *S. rossii* is given in Saarela et al. (2013a). Wolf et al. (1979) considered *S. elegans* to occur only in Alaska and Yukon, and treated all Northwest Territories and Nunavut specimens as *S. rossii*. However, most collections of the complex from Tuktut Nogait National Park and vicinity in eastern Northwest Territories were recently found to be *S. elegans* (Saarela et al., 2013a), and we also made three collections of the taxon in the study area. In Canada, *S. rossii* appears to be a more northern species with a main distribution in the Arctic islands and a few mainland Northwest Territories and Nunavut localities, while *S. elegans* is a more southern species with a main distribution in Alaska and Yukon, extending to the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 August 1951, *W.I. Findlay 252* (DAO-1725 barcode 01-01000620116); S of Fockler Creek, above small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 100 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3455* (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3563* (CAN); manufactured gravel slopes around Kugluktuk's sewage retention pond, 5.16 km SW of Coppermine River, 67°48'52.38"N, 115°12'10.3"W ± 10 m, 35 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4328* (CAN).

Sabulina rossii (R. Br.) Dillenb. & Kadereit—Ross's sandwort | Amphi-Beringian (E)–North American (N)–amphi-Atlantic (W) | Noteworthy Record

Our single collection from Fockler Creek is the first confirmed record for the study area, and is the first record for western mainland Nunavut according to the map in Aiken et al. (2007), which is modified from Wolf et al. (1979). This represents a southern range extension for the species in the Central Arctic. The collection was gathered on dry, hummocky mesic tundra dominated by frost boils and associated with *Betula glandulosa*, *Hedysarum alpinum*, *Lupinus arcticus*, *Picea glauca*, *Pinguicula vulgaris*, *Rhododendron lapponicum, Salix* spp. and *Vaccinium uliginosum*. Previous collections reported as this species have been redetermined as *S. elegans* and *S. stricta* (see comments under those species). This taxon was previously recognized as *Minuartia rossii* (R. Br.) Graebn. (see comments above under *S. elegans*). This is primarily a high Arctic species distributed in Canada throughout most of the Canadian Arctic Archipelago and known from a few, mostly northern, mainland sites in Nunavut and Northwest Territories and a single record in northern Quebec (Aiken et al., 2007; Blondeau, 2015a; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a).

NORTHERN SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3349* (CAN, UBC).

Sabulina rubella (Wahlenb.) Dillenb. & Kadereit, Fig. S24—Beautiful sandwort, reddish sandwort | Circumpolar–alpine

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made numerous collections of this common species at Fockler Creek, Bigtree River, south of Escape Rapids, Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. This is the most common *Sabulina* species in the study area. This taxon was previously recognized as *Minuartia rubella* Wahlenb. (Elven et al., 2011; Porsild & Cody, 1980; Rabeler et al., 2005) (see comments under *S. elegans*). The species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015a; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17172* (CAN-127695); Kugluktuk, disturbed rocky/gravelly ground around house, top of NW-facing gravel slope, just SE of Igalik Building, 67°49'29.6"N, 115°6'31"W ± 10 m, 13 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3096* (CAN, MO, UBC); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3172* (CAN); second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3212* (CAN); E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3338* (CAN); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3395* (CAN); SW-facing slope above (N side) of Fockler Creek, ca. 3.2 km SE of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25 m, 193 m, 05 July 2014, *Saarela*,

Sokoloff & Bull 3411 (ALA, CAN); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3606* (CAN); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela, Sokoloff & Bull 3625* (CAN); Kugluk (Bloody Falls) Territorial Park, slope above Bloody Falls (W side) where Coppermine River narrows to Bloody Falls, 67°44'23"N, 115°22'35.9"W ± 25 m, 33 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3847* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4069* (CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, along ATV trail below slope of sand hill just below picnic bench/lookout area, 67°44'41.5"N, 115°22'14.9"W ± 15 m, 15 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4151* (CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'6.7"N, 115°13'40.6"W ± 50 m, 41 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4308* (CAN); manufactured gravel slopes around Kugluktuk's sewage retention pond, 5.16 km SW of Coppermine River, 67°48'52.38"N, 115°12'10.3"W ± 10 m, 35 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4329* (CAN); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4357* (ALTA, CAN).

Sabulina stricta (Sw.) Rchb.—Bog sandwort | Circumpolar–alpine | Noteworthy Record

This species is newly recorded for the study area and western mainland Nunavut. We made collections at Fockler Creek and Melville Creek. The species was found in wet disturbed ground in mesic shrub tundra, a snowbed habitat, on a rocky creek shore, and in a meadow around a small pond. A collection reported as *Minuartia rossii* from the Big Bend area of the Coppermine

River just outside the study area (Cody et al., 2003) has been re-determined (det. J.M. Saarela, 2015) as *S. stricta* (*Reading 5*, DAO). Elsewhere in Nunavut it is known from the southeastern mainland and Baffin, Southampton and Victoria islands (Aiken et al., 2007; Gillespie et al., 2015; Porsild & Cody, 1980). There is a conspicuous gap in its distribution in the central Canadian Arctic. The closest collections to the west are from Tuktut Nogait National Park and vicinity (Saarela et al., 2013a) and there are numerous collections from northern Quebec (Blondeau, 2015a). The species is at the northern edge of its range in the study area. This taxon was previously recognized as *Minuartia stricta* (Sw.) Hiern. (Elven et al., 2011; Porsild & Cody, 1980; Rabeler et al., 2005) (see comments above under *S. elegans*).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3271* (CAN); tundra just S of Fockler Creek and N of unnamed tributary, ca. 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°38'8.9"W ± 3 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3315* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3300a* (CAN); Sleigh Creek, near its confluence with small, unnamed tributary, ca. 1 km SE of Sandstone Rapids, Coppermine River, 67°27'2"N, 115°37'28.7"W ± 10 m, 150 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3466* (CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3517* (CAN).

Sagina nodosa subsp. ***borealis*** G.E. Grown, Fig. 52—Northern knotted pearlwort | North American (N)–amphi-Atlantic–European (N)–Asian (N) | Noteworthy Record

Our collections from Kugluk (Bloody Falls) Territorial Park and Kugluktuk are the first report of this shoreline species from the study area, and extend the known range of the species northeast from the nearest collections from eastern Great Bear Lake (Crow, 1978; Porsild, 1943; Porsild & Cody, 1980). The taxon has been recorded from a few other Arctic sites elsewhere on mainland Nunavut, southern Baffin Island, islands in Hudson Bay, and northern Quebec (Blondeau, 2015a; Crow, 1978; Porsild & Cody, 1980). Porsild & Cody (1980) did not recognize infraspecific taxa in *S. nodosa* (L.) Fenzl, whereas in other treatments two are recognized: subsp. *nodosa*, a non-Arctic coastal taxon from northeastern North America, and subsp. *borealis* (Crow, 2005; Crow, 1978; Elven et al., 2011). We follow these latter treatments.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4134* (CAN); grassy sandy flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4413* (CAN).

Silene acaulis (L.) Jacq., Fig. S25A—Moss campion | Amphi-Beringian–North American–amphi-Atlantic–European (N/C)–Asian (NW)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Big Creek, Coppermine Mountains and Kugluk (Bloody Falls) Territorial Park. The species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015a; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al.,

2013a). Two infraspecific taxa in *S. acaulis* L. have been recognized, subsp. *acaulis* and subsp. *subacaulescens* (F.N. Williams) Hultén (Elven et al., 2011; Porsild & Cody, 1980, who recognized them provisionally), whereas Morton (2005b) does not, noting considerable intergradation. We follow the latter treatment.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761°N, 115.2037°W ± 7.5 km], 1931, *A.M. Berry 4* (CAN-54391); Coppermine [Kugluktuk], Coronation Gulf, at mouth of Coppermine River, ledge of north-facing cliff, hill back of the village [67.822146°N, 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3321* (CAN-200286); Bloody Falls on Coppermine River, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 141* (DAO-23244 barcode 01-01000616635); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 82* (DAO-23243 barcode 01-01000616636); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3055* (CAN, UBC); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3119* (ALA, CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3160* (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3555* (CAN, O); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3769* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls

(W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3951* (CAN, MT).

Silene involucrata subsp. ***tenella*** (Tolm.) Bocquet—Arctic bladder campion | European (NE)–Asian (N)–amphi-Beringian

Recorded previously from Kugluktuk (Porsild & Cody, 1980). We made collections at Fockler Creek, Coppermine Mountains and Kugluk (Bloody Falls) Territorial Park. Neither Aiken et al. (2007) nor Porsild & Cody (1980) recognized infraspecific taxa in *S. involucrata* (Cham. & Schltdl.) Bocquet, whereas Elven et al. (2011) and Morton (2005b) did, but there is disagreement as to which subspecies names are correct due to differing interpretations of types. Here we follow Morton (2005); his subsp. *tenella* corresponds to subsp. *involucrata* in Elven et al. (2011). The geographic summary above corresponds to the latter name in Elven et al. (2011). Porsild & Cody (1980) treated the species as *Melandrium affine* (J. Vahl ex Fries) J. Vahl, now considered a synonym of this species. The genus *Melandrium* Rohl. is included within *Silene* L. by all recent authors. Two collections previously reported as *Lychnis triflora* R. Br. (=*Silene sorensenis* (B. Boivin) Bocquet) (Findlay 77, 94; Cody, 1954b) were re-determined by G. Bocquet in 1965 as this species. We agree with this re-determination.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 177* (DAO-9409 barcode 01-01000679540); ibid., 5 July 1951, *W.I. Findlay 94* (DAO-9407 barcode 01-01000616632); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3108* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of

Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m, 422 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3745* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3809* (CAN).

Silene uralensis (Rupr.) Bocquet subsp. ***uralensis***, Fig. S25B—Mountain campion, nodding campion | European (NE)–Asian (N)–amphi-Beringian–North American (N)

Previously recorded from Kugluktuk (Cody, 1954b, as Lychnis apetala var. arctica (Fries) Cody; Porsild & Cody, 1980, as Melandrium apetalum (L.) Fenzl). We made collections at Fockler Creek, two sites along the Coppermine River, Kugluk (Bloody Falls) Territorial Park, and near Heart Lake. Taxonomic treatments of the circumpolar-alpine *S. uralensis* vary considerably. This taxon is treated as *Melandrium apetalum* subsp. *arcticum* (Fr.) Hultén in Porsild and Cody (1980), in a broader sense than recognized here (including *Silene uralensis* subsp. *arctica* (Fr.) Bocquet) but distinct from the cordilleran taxon *M. apetalum* subsp. *attenuatum* (Farr) Hara. Morton (2005) included subsp. *arctica* and subsp. *attenuata* in his more broadly cirucmbscribed *S. uralensis* subsp. *uralensis*. We follow Elven et al. (2011), who recognized three subspecies: subsp. *uralensis* (with *M. apetalum* subsp. *attenuatum* as a tentative synonym), subsp. *arctica*, a high Arctic taxon and subsp. *ogilviensis* (A.E. Porsild) D.F. Brunt., a problematic taxon also recognized by Morton (2005). *Silene uralensis* subsp. *arctica* is not recorded from the study area, but reaches the mainland in Tuktut Nogait National Park and adjacent Nunavut (Saarela et al., 2013a). As well, two collections from west of the Coppermine River outside the study area (*Reading 22*, *28*, DAO) previously determined as subsp. *uralensis*, are subsp. *arctica* (det. J.M. Saarela 2015). The distribution of subsp. *uralensis* sensu Elven et al. (2011) has not been mapped and is therefore unclear, but it was not recorded for the Canadian Arctic Archipelago by

6026 Aiken et al. (2007). *Silene uralensis* s.l., however, is widespread in the Canadian Arctic (Aiken
6027 et al., 2007; Blondeau, 2015a; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

6028 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
6029 vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17174* (CAN-
6030 127723); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 July 1951, *W.I. Findlay 155*
6031 (ACAD-30917, DAO-9401 barcode 01-01000616610, UBC-V40799); ibid., 8 July 1951, *W.I.*
6032 *Findlay* 95 (DAO-9402 barcode 01-01000616611); slopes on E side of Coppermine River, N of
6033 its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N,
6034 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3389* (CAN, UBC); esker
6035 on E side of Coppermine River, 0.6 km SSE of Muskox Rapids, 67°22'40"N, 115°42'38.5"W ±
6036 50 m, 172 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3609* (CAN); S-facing slopes on W side of
6037 Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N,
6038 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3623* (CAN); Kugluk
6039 (Bloody Falls) Territorial Park, wet meadow between Coppermine River and large sand hills on
6040 W side of river, 0.5 km W of Bloody Falls, 67°44'44.8"N, 115°22'48.3"W ± 15 m, 33 m, 15 July
6041 2014, *Saarela*, *Sokoloff & Bull 4050* (CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk,
6042 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July
6043 2014, *Saarela*, *Sokoloff & Bull 4290* (ALA, CAN).

6044 ***Stellaria borealis*** Bigelow subsp. ***borealis*****—**Boreal starwort | North American–amphi-Atlantic–
6045 European (N) | Noteworthy Record

6046 Newly recorded for the study area. Our collection from the Fockler Creek area represents a range
6047 extension from the nearest sites along eastern Great Bear Lake. Petals are absent in our

collection, which was gathered on a wet, lower bank of a snowbed area just above a small creek, where the species was uncommon, growing with *Anemone parviflora*, *Dasiphora fruticosa*, *Arctous rubra*, *Carex podocarpa*, *Salix reticulata* and *Cassiope tetragona*. Porsild and Cody (1980) treated the taxon as *S. calycantha* (Ledeb.) Bong. s.l., a broadly distributed circumpolar, non-Arctic species, whereas Morton & Rabeler (1989) recognized two species in the *S. calycantha* complex, *S. calycantha* s.s. (a non-arctic western North American taxon) and *S. borealis* Bigelow with two infraspecific taxa: subsp. *borealis*, a widespread boreal and cordilleran taxon, and subsp. *sitchana* (Steud.) Piper, a non-Arctic western North American taxon. This latter approach was adopted in subsequent treatments (Elven et al., 2011; Morton, 2005c), which we follow here. Elsewhere in Nunavut the taxon is recorded from Daring Lake, the southeastern mainland, the Yathkyed Lake area, the Boothia peninsula and Akimiski Island (Blaney & Kotanen, 2001; Cody & Reading, 2005; Cody et al., 2003; Porsild & Cody, 1980; Riley, 1981). Elsewhere in the Canadian Arctic it is recorded from the Mackenzie Delta area and northern Quebec and Labrador (Blondeau, 2015a; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3290* (CAN).

Stellaria crassifolia Ehrh.—Thick-leaved starwort | Circumboreal-polar | Noteworthy Record

This species is newly recorded for the study area. It was collected near the Kugluktuk Airport by B. Bennett in 2013, and we made a single collection in Kugluk (Bloody Falls) Territorial Park. These collections extend the species' range north from the Big Bend area of the Coppermine

River, just south of the study area, where it was recently recorded (Reading 37, DAO; Cody et al., 2003). The next-nearest site is eastern Great Bear Lake (Porsild & Cody, 1980). Our collection was made on a sandy, rocky beach where the species was uncommon, growing with *Chamerion latifolium*, *Artemisia tilesii*, *Equisetum arvense* and *Salix planifolia*. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Prince Charles, Melville and Victoria islands, the Mackenzie Delta area, scattered sites on mainland Nunavut, and northern Quebec and Labrador (Aiken et al., 2007; Blondeau, 2015a; Cody et al., 2003; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0634* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4116* (CAN).

Stellaria humifusa Rottb.—Salt-marsh starwort, low sandwort | Circumpolar–amphi-Pacific

Previously recorded for the Kugluktuk area (Porsild & Cody, 1980) but we were unable to locate a voucher for confirmation. This is a common shoreline species of fresh and saltwater habitats. Accordingly, we collected it along Richardson Bay and at Heart Lake. This species is widespread throughout the Canadian Arctic Archipelago and is known from several mainland Arctic sites in Canada (Aiken et al., 2007; Blondeau, 2015a; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3673* (ALA, ALTA, CAN,

O); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4293* (CAN, UBC).

Stellaria longipes Goldie—Long-stalked starwort, Goldie's starwort | Circumboreal–polar

Previously recorded from Kugluktuk (Cody, 1954b, as S. ciliatosepala Trautv. and S. monantha var. monantha; Porsild & Cody, 1980). We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015a; Cody & Reading, 2005; Cody et al., 1984; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Porsild and Cody (1980) recognized seven species as part of the *S. longipes* species complex (*S. arenicola* Raup, *S. stricta* Richardson, *S. subvestita* Greene, *S. crassipes* Hultén, *S. monantha* Hultén, *S. edwardsii* R. Br., *S. laeta* Richardson) based on the earlier treatment of Porsild (1963). *Stellaria laeta* (*Berry 5*, CAN; *Wood s.n.*, CAN) and *S. monantha* were mapped for the study area (both are included in *S. longipes* here). Elven et al. (2011) provisionally recognized these species as unranked infraspecific "taxa". Other authors recognize most of the previously recognized taxa in the polyploid *S. longipes* s.l. as a single polymorphic taxon, *S. longipes* subsp. *longipes*, recognizing only one other infraspecific taxon, the non-Arctic subsp. *arenicola* (Raup) Chinnappa & J.K. Morton from the Lake Athabasca sand dunes in Saskatchewan and Alberta (recognized as a species, *S. arenicola* Raup, in Porsild and Cody 1980) (Chinnappa & Morton, 1991; Morton, 2005c). We follow the latter approach.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 5* (CAN-51226); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 111*

(DAO-187221 barcode 01-01000617008); Coppermine [Kugluktuk], common above Eskimo [sic] tents west of DOT, [67.826667°N, 115.09333°W ± 1.5 km], 06 July 1958, *R.D. Wood s.n.* (CAN-265560); Coppermine [Kugluktuk], in settlement near R.C. Mission, [67.826667°N, 115.09333°W ± 1.5 km], 08 July 1958, *R.D. Wood s.n.* (CAN-265561); Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23 June 1999, *C.L. Parker & I. Jonsdottir 9102* (ALA); Kugluktuk, disturbed rocky/gravelly ground around house, top of NW-facing gravel slope, just SE of Igalik Building, 67°49'29.6"N, 115°6'31"W ± 10 m, 13 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3097* (CAN); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3133* (CAN); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3249* (CAN); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'21.4"N, 115°38'54"W ± 5 m, 140 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3361* (CAN, MO); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3767* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3812* (CAN, MT); S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4207* (CAN, US); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8

m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4239* (CAN); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4341* (CAN); Kugluktuk, roadside and flats between buildings, 67°49'27.4"N, 115°5'26.2"W ± 25 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4394* (ALA, CAN).

Chenopodiaceae [1/1]

Suaeda calceoliformis (Hook.) Moq., Fig. 53—Horned sea-blite | North American

This halophytic species has been recorded previously from the same general area as our collection, as mapped in several treatments (Bassett & Crompton, 1978, as "Suaeda depressa sensu S. Wats."; Ferren Jr. & Schenk, 2004; Porsild & Cody, 1980), but has not been found elsewhere in the study area. We found it to be locally common and forming dense patches on wet and muddy mid- to upper-slopes of estuary channels at Richardson Bay, growing with *Carex subspathacea*, *Potentilla anserina*, *Puccinellia phryganodes* and *Stellaria humifusa*. It is also recorded from the Kent Peninsula in Nunavut (Cody et al., 2003) and was recently recorded from adjacent Victoria Island, the first records for the Canadian Arctic Archipelago (Gillespie et al., 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Rae River, mouth, 02 August 1955, *R.E. Miller 312* (CAN-241966); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3668* (CAN).

Elaeagnaceae [1/1]

Shepherdia canadensis (L.) Nutt., Fig. 54—Canada buffaloberry, soapberry, foamberry | North American | Noteworthy Record

Our collections of this boreal shrub species are the first ones for the study area and extend the range northwards from the sites of two recent records from the Big Bend area along the Coppermine River, just south of the study area (Reading 26, DAO; Cody & Reading, 2005). Reading's collection represented a northwestern range extension from the nearest sites along the eastern arm of Great Bear Lake (Porsild, 1943; Porsild & Cody, 1980). *Shepherdia canadensis* is a fairly common shrub in the study area, where it grows along the banks of the Coppermine River and in sheltered areas of the park. We made collections at Fockler Creek, Big Creek, sites along the Coppermine River and Kugluk (Bloody Falls) Territorial Park. We recorded it as far north as the park but it likely extends further north along the Coppermine River. We did not encounter the species in the Kugluktuk area. It is surprising that previous collectors at Bloody Falls did not collect this conspicuous woody species. The species also occurs in low Arctic tundra in the vicinity of the Brock River, Northwest Territories (Saarela et al., 2013a), the Mackenzie Delta area, northern Yukon and northern Alaska (Porsild & Cody, 1980). Elsewhere in Nunavut the taxon is known from the lower Hood River (Gould & Walker, 1997) [mostly at their sites one to four], the southeastern mainland (Cody & Reading, 2005), Akimiski Island (Blaney & Kotanen, 2001) and the Belcher Islands (*Consaul, Kattuk & Charette 4230*, CAN-599700; *Consaul et al. 3817*, CAN-599607; *Consaul 4003*, CAN-5996606; *Consaul et al. 4259*, CAN-599701; *Consaul et al. 4253*, CAN-599702; *Consaul et al. 3723*, CAN-599605).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3148* (CAN, UBC); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3401* (ALA, CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3567* (CAN, UBC, US); S-facing slopes above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 50 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3643* (ALTA, CAN); SE-facing slopes above Escape Rapids, W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3735* (CAN, O); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3818* (CAN, MO); Kugluk (Bloody Falls) Territorial Park, sandy NE-facing slope above small creek in deep gully, about 0.5 km W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 41 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4016* (CAN, MT).

Ericaceae [10/14]

Andromeda polifolia L., Fig. S26A, B—Bog rosemary | Circumboreal–polar

Previously recorded from Kugluktuk (Cody, 1954b; Macoun & Holm, 1921; Porsild & Cody, 1980). We made collections at Fockler Creek, Kendall River and Kugluk (Bloody Falls) Territorial Park. This low shrub was previously considered to be restricted to the mainland but

has recently been reported from adjacent Victoria Island and southern Baffin Island in the Canadian Arctic Archipelago (Gillespie et al., 2015). There are numerous mainland Arctic records in Canada (Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 8 July 1951, *W.I. Findlay 104* (ACAD-30951); Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17182* (CAN-128044); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 23 June 1951, *W.I. Findlay 29* (DAO-181418 barcode 000002656); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 137* (UBC-V151895); Kugluktuk, upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015866); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3049* (CAN, UBC); ridge N of Fockler Creek, ca. 2.1 km SSE of Sandstone Rapids, Coppermine River, 67°25'54"N, 115°37'30"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3208* (ALA, CAN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3592* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3883* (ALA, CAN, MT).

Arctostaphylos uva-ursi (L.) Spreng.—Common bearberry, kinnikinnick | Circumboreal | Noteworthy Record

Newly recorded for the study area. Our single Subarctic collection, gathered from low shrub tundra in a white spruce forest along Melville Creek, represents a northeastern range extension from the nearest collections from the eastern shore of Great Bear Lake (Porsild & Cody, 1980). Elsewhere in Nunavut it is known from the southeastern mainland in the Nueltin Lake area (Porsild, 1950b; Porsild & Cody, 1980) and Akimiski Island (Blaney & Kotanen, 2001). It reaches the Arctic in North America in western Greenland, Northwest Territories (e.g., Richards Island, *Cody & Gutteridge 79*63 (ALTA-19107, specimen not examined), Yukon and northern Alaska (Bennett, 2008; Hultén, 1971; Porsild & Cody, 1980). In the past, infraspecific taxa have been recognized in *A. uva-ursi*, but they are not recognized currently (Elven et al., 2011; Parker et al., 2009)

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3534* (CAN).

Arctous alpina (L.) Nied.—Alpine bearberry | Circumpolar-alpine

Previously recorded from Kugluktuk, as *Arctostaphylos alpina* (L.) Spreng (Cody, 1954b; Porsild & Cody, 1980), where we also made collections. Elsewhere in the Canadian Arctic this species is recorded from southern Baffin Island, Banks, Southampton and Victoria islands, and numerous mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980). This species and *A. rubra* can sometimes be difficult to tell apart, particularly when relying solely on the presence or absence of marcescent leaves. The most reliable character is fruit colour (black in *A. alpina*, red in *A. rubra*), but ripe fruits are rarely available in herbarium material. Most authors recognize these taxa at species level (Elven et al.,

2011; Porsild & Cody, 1980; Tucker, 2009), but they have also been treated as varieties of a single species (Welsh, 1974). The two can be distinguished by *rbcL* sequences (Saarela et al., 2013b).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 23 June 1951, *W.I. Findlay 29* (DAO-181418 barcode 000002656); Kugluktuk, 67.821917°N, 115.085033°W, 12 July 2006, *J. Davis 621* (CAN-597650); Kugluktuk, rocky slopes of North Hill, 67°49'31.4"N, 115°6'54"W ± 100 m, 42 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3075* (CAN, UBC); rocky cliffs on S side of Kugluktuk, 67°49'13"N, 115°5'55.8"W ± 50 m, 65 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4401* (CAN).

Arctous rubra (Rehder & E.H. Wilson) Nakai—Red bearberry | Asian (NE)–amphi-Beringian–North American (N)

Previously recorded Kugluktuk, as *Arctostaphylos rubra* (Rehder & E.H. Wilson) Fern. (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from Banks, Baffin (one record that should be confirmed), Southampton and Victoria islands and a few mainland sites (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). Also see comments under *A. alpina*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 June 1951, *W.I. Findlay 3* (DAO-181442 barcode 000003622); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3167* (CAN, UBC); NW-facing slope just upstream of small tributary from its confluence with Fockler

Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3313* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3825* (ALTA, CAN).

Cassiope tetragona (L.) Don. subsp. ***tetragona***, Fig. S26C—Arctic heather | Circumpolar–alpine

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Macoun & Holm, 1921; Porsild & Cody, 1980). We made collections of this common snowbed species at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. It is known from throughout the Canadian Arctic (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). The other subspecies, subsp. *saximontana* (Small) A. E. Porsild, is non-Arctic (Wallace 2009).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 137* (DAO-113610 barcode 000003422); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 29 June 1951, *W.I. Findlay 49* (ACAD-30952, DAO-113611 barcode 000003421, UBC-V40788); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 146* (UBC-V151907); Kugluktuk, 67.82445°N, 115.169783°W, 21 June 2006, *J. Davis 602* (CAN-597640); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 19* (CAN-88524); Kugluktuk, rocky outcrop, overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 27 June 2000, *L.K. Benjamin s.n.* (ACAD-ECS015879); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3061* (ALA, ALTA, CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids,

Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3289* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3886* (CAN, MO, O).

Empetrum nigrum L., Fig. S27A, B—Crowberry, blackberry | Circumboreal–polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic it is known from Baffin, Ellesmere, Southampton and Victoria islands and numerous mainland sites (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Murray (2008) and Elven et al. (2011) who recognize the polymorphic taxon in a broad sense. Porsild (1980) recognized North American plants as *E. nigrum* subsp. *hermaphroditum* (Lge.) Böcher.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 35* (DAO-180513); ibid., *W.I. Findlay 48* (DAO-180510); Kugluktuk, 67.81875°N, 115.0885°W, 10 July 2006, *J. Davis 620* (CAN-597642); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3311* (ALTA, CAN, O); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3533* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily

used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3824* (ALA, CAN).

Kalmia procumbens (L.) Gift, Kron & P.F. Stevens ex Galasso, Banfi & F.Conti—Alpine azalea | Asian (NE)–amphi-Beringian–North American (N)–amphi-Atlantic–European (N)

Previously recorded from the study area as *Loiseleuria procumbens* (L.) Desv. (Porsild & Cody, 1980), but we were unable to locate a specimen for confirmation. The species is rare in the study area as we encountered it only once at the Bigtree River site where it was uncommon in a dry spruce forest among granite/gabbro outcrops growing with *Betula glandulosa* and *Vaccinium uliginosum*. Elsewhere in the Canadian Arctic it is known from southern Baffin Island and a few mainland sites (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). The species is at the northern edge of its range in the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3608* (CAN).

Orthilia secunda subsp. ***obtusata*** (Turcz.) Böcher, Fig. S27C, D—One-sided wintergreen, nodding wintergreen | Asian (N/C)–amphi-Beringian–North American

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Sandstone Rapids in the vicinity of Fockler Creek, Kendall River, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. *Orthilia secunda* s.l. (including *O. obtusata* Turcz.) is a circumpolar taxon that has been variously treated. In North America two (Porsild & Cody, 1980) or no (Cody, 2000; Freeman, 2009a) infraspecific taxa

have been recognized, while in a Panarctic context the taxa are tentatively recognized as species (Elven et al., 2011) with an acknowledgement that in northwestern North America they can be difficult to distinguish. We take an intermediate approach here and recognize the taxa at the subspecies level. All of our collections are the Arctic-alpine race with small (< 2 cm long) elliptic to orbicular leaf blades. The map in Porsild & Cody (1980) does not distinguish between the infraspecific taxa, while Aiken et al. (2007) mapped the subspecies in the Canadian Arctic from Victoria Island and a few mainland sites. We recorded it from Tuktut Nogait National Park and vicinity (Saarela et al., 2013a). *Orthilia secunda* was previously classified in the genus *Pyrola* L. (*P. secunda* L.).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 August 1951, *W.I. Findlay 250* (DAO-32677 barcode 01-01000619901); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3479* (CAN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3584* (CAN); S-facing slopes above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 50 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3640* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3784* (CAN); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4037* (CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy

hills and Bloody Falls, 67°45'17.6"N, 115°22'14.2"W ± 20 m, 76 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4139* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4385* (ALA, CAN).

Pyrola grandiflora Radius subsp. ***grandiflora***, Fig. S28A—Large-flowered wintergreen | Circumpolar

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Kugluktuk, Fockler Creek and Kugluk (Bloody Falls) Territorial Park. The three varieties recognized in Porsild & Cody (1980) are not recognized by Freeman (2009b). Elven et al. (2011), whom we follow, recognize two subspecies; only subsp. *grandiflora* is present in North America. In the Canadian Arctic it is recorded from Baffin, Banks, Coats, Ellesmere, Melville and Southampton islands and sites across the mainland (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 154* (DAO-22681 barcode 01-01000619930); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 22 July 1951, *W.I. Findlay 168* (ACAD-30922, ALTA-VP-13677, DAO-22682 barcode 01-01000619931, UBC-V238247); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 96* (LEA); Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23 June 1999, *C.L. Parker & I. Jonsdottir 9098* (ALA); Kugluktuk, upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015873); Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela*,

Sokoloff & Bull 3090 (CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3144* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3823* (CAN, UBC).

Rhododendron groenlandicum (Oeder) Kron & Judd—Common Labrador tea | North American (N) | Noteworthy Record

Our five collections are the first records of this boreal shrub for the study area and represent a minor northeastern range extension for the species. We made collections at Fockler Creek, Melville Creek, south of Escape Rapids and in Kugluk (Bloody Falls) Territorial Park. It was recently recorded from the Big Bend area of the Coppermine River just south of the study area (Reading 2, DAO; Cody et al., 2003). That collection represented the first collection for western Nunavut, with the nearest collections from the eastern shore of Great Bear Lake in Northwest Territories (Porsild & Cody, 1980). Elsewhere in Nunavut, the species is recorded from the southeastern non-Arctic (Porsild & Cody, 1980) and Arctic mainland (Cody & Reading, 2005) and Akimiski Island (Blaney & Kotanen, 2001). The taxon was previously treated in the genus *Ledum* L. (*L. groenlandicum* Oeder).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3250* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine

Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3531* (CAN, MO, O); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3621* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, NE-facing slope of large hill just S of Bloody Falls, W side of Coppermine River, 67°44'6.6"N, 115°23'13.4"W ± 50 m, 40 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3981* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, just above Bloody Falls, 67°44'22.6"N, 115°22'52"W ± 20 m, 40 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4107* (CAN).

Rhododendron lapponicum (L.) Wahlenb., Fig. S28B—Lapland rosebay | Asian (NE)–amphi-Beringian–North American (N)–amphi-Atlantic (W)

Previously recorded from Kugluktuk (Cody, 1954b; Macoun & Holm, 1921; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluktuk and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Devon, Southampton and Victoria islands, and numerous mainland sites (Aiken et al., 2007; Bennett, 2015; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Elven (2011) provisionally recognize two subspecies in this taxon, subsp. *lapponicum* and subsp. *alpinum* (Glehn) A.P. Khokhr., following Russian treatments, with both reported as occurring in Canada. Since the differences between these putative taxa are unclear in North America, they are not recognized here, as in Judd & Kron (2009) who did not mention these taxa.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 29 June 1951, *W.I. Findlay 52* (DAO-181174 barcode 000001180); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 142* (UBC-V151910);

Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3048* (ALTA, CAN, O); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3245* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3831* (ALA, CAN).

Rhododendron tomentosum subsp. ***decumbens*** (Aiton) Elven & D.F. Murray, Fig. S29A—Dwarf Labrador tea | Asian (N/C)–amphi-Beringian–North American (N)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Kugluktuk, Fockler Creek and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Southampton and Victoria islands and numerous mainland sites (Aiken et al., 2007; Bennett, 2015; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Elven (2011); the other taxon in the species, subsp. *tomentosum*, does not occur in North America. The taxon was previously treated in the genus *Ledum* (*L. decumbens* (Aiton) Lodd. ex Steud. or *L. palustre* var. *decumbens* Aiton).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 139* (DAO-181111 barcode 01-01000619934); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 1 August 1951, *W.I. Findlay 228* (ACAD-30954); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 147* (UBC-V151905); Kugluktuk, 67.82205°N, 115.080317°W, 27 June 2006, *J. Davis 609* (CAN-597652);

Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3047* (CAN, UBC); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3171* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3834* (ALTA, CAN, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4377* (CAN).

Vaccinium uliginosum L., Fig. S29B—Bilberry | Circumboreal–polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluktuk, Melville Creek and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Coats, Cornwallis, Salisbury, Southampton and Victoria islands, and numerous mainland sites (Aiken et al., 2007; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Elven *et al.* (2011) recognize five subspecies, taking into account earlier taxonomic work (e.g., Young, 1970) and the results of a molecular study (Alsos et al., 2005; also see Eidesen et al., 2007) that identified five plastid lineages in the circumpolar species. They reported two of these taxa for Canada, subsp. *uliginosum* and subsp. *microphyllum* (Lange) Tolm., but distinguishing morphological characters are unclear. For this reason we do not recognize infraspecific taxa here. Vander Kloet (2009) did not recognize infraspecific taxa. Hultén (1968) distinguished these taxa on the basis of leaf size and growth habit: leaves < 1 cm and plants low-growing in subsp. *microphyllum* vs. leaves larger and plants more upright. By these characteristics, our collection

nos. 3187, 3524 and 3828 would be subsp. *uliginosum* and no. 3045 would be subsp. *microphyllum*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 22 July 1951, *W.I. Findlay 169* (ACAD-30924, DAO1178342 barcode 01-01000619900, UBC-V40755); ibid., 11 July 1951, *W.I. Findlay 113* (DAO-178363 barcode 01-01000619899); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 149* (UBC-V151906); Kugluktuk, 67.81875°N, 115.0885°W, 10 July 2006, *J. Davis 619* (CAN-597656); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3045* (ALA, ALTA, CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3187* (CAN, MO, O); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3524* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3828* (CAN, MT, US).

Vaccinium vitis-idaea subsp. ***minus*** (Lodd.) Hultén—Mountain cranberry | Circumboreal–polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). Elsewhere in the Canadian Arctic this taxon is recorded from Baffin, Banks, Coats, Salisbury, Southampton and Victoria islands, and numerous mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Elven *et al.* (2011) recognized two subspecies in the taxon, of which only subsp. *minus* occurs in North America. Porsild & Cody

(1980) recognized the taxon as var. *minus* Lodd. Vander Kloet (2009) did not comment on, or recognize, infraspecific taxa.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 17 July 1951, *W.I. Findlay 127* (DAO-170408 barcode 01-01000619896); Kugluktuk, 67.81875°N, 115.0885°W, 10 July 2006, *J. Davis 622* (CAN-597651); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3185* (CAN, UBC); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3312* (ALA, CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3521* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela, Sokoloff & Bull 3835* (CAN, O).

Fabaceae [5/11]

Astragalus alpinus L., Fig. S30A—Alpine milk-vetch | Circumpolar–alpine

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Kugluktuk, Fockler Creek, Coppermine Mountains and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Coats, King William, Melville, Prince Patrick, Southampton and Victoria islands, and numerous mainland sites (Aiken et al., 2007; Blondeau, 2015b; Cody & Reading, 2005; Cody et al., 2003;

Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Porsild & Cody (1980, no infraspecific taxon indicated), Welsh (2007, as var. *alpinus*) and Elven et al. (2011). The latter authors recognize a second Arctic infraspecific taxon, the American Beringian subsp. *alaskanus* Hultén, which was treated as a synonym of var. *alpinus* by Welsh (2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 21 July 1951, *W.I. Findlay 163* (DAO-183557 barcode 01-01000619625); ibid., 20 June 1951, *W.I. Findlay 18* (DAO-183559 barcode 01-01000619624); ibid., 4 July 1951, *W.I. Findlay 92* (DAO-183560 barcode 01-01000619623); ibid., 2 July 1951, *W.I. Findlay 71* (DAO-183558 barcode 01-01000679621); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 13* (CAN-76421); Kugluktuk, along edge of Inuit St., just NW of Northern Store, 67°49'39.4"N, 115°5'41.3"W ± 5 m, 5 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3102* (CAN, UBC); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela, Sokoloff & Bull 3159* (CAN); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3378* (CAN, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela, Sokoloff & Bull 3503* (CAN, NY, O, QFA); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3656* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area,

67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3796* (ALTA, CAN); grassy sandy flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4412* (CAN).

Astragalus richardsonii E. Sheld., Fig. S30B—Richardson's milk-vetch | North American (NW)

Previously recorded from Kugluktuk (Cody, 1954b, as A. aboriginum; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This species has a fairly restricted distribution, occurring primarily on Banks and Victoria islands and adjacent Nunavut and Northwest Territories (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Elven et al. (2011) and Porsild & Cody (1980). Barneby (1964) treated the taxon as the "Mackenzie variant" of *A. aboriginum* Richardson, now recognized as a more southern and mostly non-Arctic taxon (Elven et al., 2011; Porsild & Cody, 1980). Welsh (2007) treated this taxon as a synonym of *A. australis* var. *glabriusculus* (Hook.) Isely, part of a large and variable *A. australis* (L.) Lam. species complex. Aiken et al. (2007) treated the taxon as *A. australis*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 14* (CAN-76208); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 5 July 1951, *W.I. Findlay 93* (DAO-183602 barcode 01-01000619670); ibid., 27 June 1951, *W.I. Findlay 41* (DAO-183601 barcode 01-01000619671); Coppermine [Kugluktuk], west of settlement, 06 July 1958, *R.D. Wood s.n.* (CAN-265503); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N,

115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3314* (CAN, UBC); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3330* (CAN); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'34.8"N, 115°33'27.8"W ± 20 m, 265 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3435* (CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3537* (ALA, CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3763* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3999* (CAN); S edge of Kugluktuk, 67°49'7.9"N, 115°6'4.9"W ± 10 m, 42 m, 24 July 2014, *Saarela, Sokoloff & Bull 4361* (CAN).

Hedysarum americanum (Michx. ex Pursh) Britton, Fig. 55 —Alpine sweet-vetch, Licorice root | Amphi-Beringian (E)–North American

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We collected the species at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. This is a western species recorded in the Canadian Arctic from Banks and Victoria islands and the adjacent mainland extending east to the Wager Bay and Rankin Inlet areas (Aiken et al., 2007; Bennett, 2015; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). This taxon has also been treated as *H. alpinum* var. *americanum* Michx. ex Pursh in (Porsild & Cody, 1980) and *H. alpinum* L. (Brouillet et al., 2010+). Elven et al. (2011) consider *H. americanum* and *H.*

alpinum L. to be distinct species, the latter restricted to non-Arctic parts of Siberia; we follow this treatment.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 145* (ACAD-30955, DAO-26311 barcode 01-01000619944); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 31 July 1951, *W.I. Findlay 216* (DAO-26312 barcode 01-01000619945); Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23 June 1999, *C.L. Parker & I. Jonsdottir 9103* (ALA); Kugluktuk, upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015862); Kugluktuk, upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015863); Kugluktuk, 67.820883°N, 115.087233°W, 22 July 2006, *J. Davis 637* (CAN-597641); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3173* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3532* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3821* (ALTA, CAN, O).

Hedysarum boreale subsp. ***mackenziei*** (Richardson) Welsh, Fig. 56—Mackenzie's sweet-vetch | Amphi-Beringian (E)–North American

Previously recorded from Bloody Falls and the mouth of the Rae River (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Big Creek and Kugluk (Bloody Falls)

Territorial Park. This is a primarily western species recorded in the Canadian Arctic from Banks, Eglinton and Victoria islands, the adjacent mainland extending to the western Hudson Bay shore, and in northern Quebec from a few sites barely extending into the Arctic ecozone (Aiken et al., 2007; Blondeau, 2015b; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). This taxon has also been treated as *H. mackenziei* Richardson (Elven et al., 2011; Porsild & Cody, 1980), which was described from collections made along the Coppermine River between Point Lake, Northwest Territories and the Arctic coast (type material BM000793111, GH00032387, GH00032388, NY00005596) (Richardson, 1823). Cody (1954b) also recognized a white-flowered form from Bloody Falls (*H. mackenzii* f. *niveum* Boivin) that is not currently recognized taxonomically. We did not see any white-flowered plants in the study area in 2014.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 144* (DAO-180346 barcode 01-01000619884); Rae River mouth, 02 August 1955, *R.E. Miller 315* (CAN-241994); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3377* (CAN, UBC); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3540* (ALTA, CAN, MO, O); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3966* (CAN, MT, UBC, US); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, just above Bloody Falls, 67°44'22.6"N, 115°22'52"W ± 20 m, 40 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4110* (ALA, CAN).

Lathyrus japonicus Willd., Fig. 57—Beach pea | Amphi-Pacific/Beringian–North American–amphi-Atlantic–European

Previously recorded from Kugluktuk, as *L. japonicus* var. *aleuticus* (Greene) Fern. (Cody, 1954b; Porsild & Cody, 1980). We collected the species along the beach west of Kugluktuk and on an island at the mouth of the Coppermine River. The species is at the edge of its range in the study area. Elsewhere on the mainland Canadian Arctic it is known from a few collections between the study area and Bathurst Inlet, the Mackenzie Delta area and a few sites along the eastern shore of Hudson Bay in northern Quebec (Blondeau, 2015b; Porsild & Cody, 1980). It is not recorded from the Canadian Arctic Archipelago. Taxonomy here follows Elven et al. (2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 15* (CAN-77945); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1981, *W.I. Findlay 179* (DAO-180402 barcode 01-01000619940); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 94* (LEA); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3713* (ALA, ALTA, CAN, UBC); sandy beach along Coronation Gulf, 3.9 km W of mouth of Coppermine River, 67°49'37.8"N, 115°10'31.8"W ± 50 m, 9 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4336* (CAN).

Lupinus arcticus S. Watson subsp. ***arcticus***, Fig. 58—Arctic lupine | North American (NW)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This is a northwestern North American species recorded in the Canadian Arctic from Victoria Island and

scattered sites on adjacent mainland Nunavut and Northwest Territories (Aiken et al., 2007; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a). A second subspecies, subsp. *subalpinus* (Piper & B.L. Rob.) D.B. Dunn, occurs in non-Arctic parts of western North America (Brouillet et al., 2010+; Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 19* (DAO-2039 barcode 01-01000619951); ibid., 3 July 1951, *W.I. Findlay 75* (ACAD-30953, DAO-2040 barcode 01-01000619652); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 16* (CAN-75112); Coppermine [Kugluktuk], Coronation Gulf, at mouth of Coppermine River, [67.822146°N, 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3337-a* (CAN-200207); Kugluktuk, rocky outcrop, overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 21 June 2000, *L.K. Benjamin s.n.* (ACAD-ECS015875); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3054* (ALTA, CAN, O); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3125* (CAN, UBC); ridge N of Fockler Creek, ca. 2.1 km SSE of Sandstone Rapids, Coppermine River, 67°25'54"N, 115°37'30"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3206* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3922* (ALA, CAN).

Oxytropis arctica R. Br., Fig. S31A—Arctic oxytrope (locoweed) | Asian (N) & North American (NW)

Previously recorded from an island in the mouth of the Coppermine River (Cody, 1954b; Porsild & Cody, 1980). We collected this species at Fockler Creek, Melville Creek and Coppermine Mountains. Elsewhere in the Canadian Arctic it is recorded from the western Arctic islands and the adjacent mainland (Aiken et al., 2007; Cody et al., 2003; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: sandy island in Coppermine River at Coppermine [Kugluktuk], 67°50'N, 115°9'W, 30 June 1951, *W.I. Findlay 56* (DAO-25890 barcode 01-01000619675, UBC-V196643); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3177* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3538* (ALA, ALTA, CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3764* (CAN).

Oxytropis arctobia Bunge, Fig. S31B—Blackish oxytrope (locoweed) | North American (N)

Several collections along the Arctic coast in the vicinity of the study area are mapped in Porsild & Cody (1980). Of these, we located one specimen from Rae River. The species is rare in the study area. We made collections at two small populations in Kugluk (Bloody Falls) Territorial Park and one on the east side of Bloody Falls outside of the park. There is a recent collection from a site to the east of the Coppermine River, outside of the study area (66°44'0"N, 114°47'0"W, *Reading 533*, DAO-788054 barcode 01-01000619678). Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Eglinton, King William, Melville,

Southampton and Victoria islands and some mainland Nunavut and Northwest Territories sites (Aiken et al., 2007; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a). The taxonomy of the *Oxytropis nigrescens* aggregate, which includes *O. arctobia* and *O. bryophila*, is problematic, as discussed by Elven et al. (2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Rae River, west bank, 6 August 1955, *R.E. Miller 317* (CAN-241996); Kugluk (Bloody Falls) Territorial Park, top of sandy ridge, ca. 0.75 km W of Bloody Falls, 67°44'45.7"N, 115°23'4.6"W ± 25 m, 56 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4044* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, along ATV trail atop sand hill just below picnic bench/lookout area, 67°45'15.5"N, 115°22'31.9"W ± 3 m, 73 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4150* (CAN); top of hill on E side of Bloody Falls, across Coppermine River from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'0.3"W ± 50 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4178* (CAN).

Oxytropis deflexa subsp. ***foliolosa*** (Hook.) Cody, Fig. S32—Pendent pod oxytrope, locoweed | Amphi-Beringian–North American (W)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This taxon has a scattered distribution in the Canadian Arctic, recorded from southern Baffin Island, Victoria Island, Tuktut Nogait National Park and vicinity, and mainland sites (Aiken et al., 2007; Blondeau, 2015b; Cody & Reading, 2005; Gillespie et al., 2015; Porsild & Cody, 1980; Saarela et al., 2013a; L.J. Gillespie and J.M. Saarela, unpubl. data). This subspecies may be synonymous

with subspecies *dezhnevii* (Jurtz.) Jurtz. from Far East Russia; if so the latter name would have priority (Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 21 July 1951, *W.I. Findlay 160* (DAO-180161 barcode 01-01000619667); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3366* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3967* (ALA, CAN).

Oxytropis maydelliana Trautv., Fig. 59A—Maydell's oxytrope (locoweed), Inuit carrot | Amphi-Beringian–North American (N)

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. This species is distributed throughout the Canadian Arctic, excluding the high Arctic islands (Aiken et al., 2007; Blondeau, 2015b; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Two subspecies (subsp. *maydelliana* and subsp. *melanocephala* (Hook.) A.E. Porsild) are recognized in Porsild & Cody (1980) but not in Elven et al. (2011), whom we follow.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 147* (DAO-18227); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 106* (DAO-180242 barcode 01-01000619942); ibid., 30 July 1951, *W.I. Findlay 211* (DAO-180244 barcode 01-01000619941,

UBC-V196642); Kugluktuk, well drained upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015864); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3154* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3527* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3920* (CAN); NW-facing moist to wet sedge meadow, drainage running into Coppermine River above Bloody Falls on SE side, 67°44'26.2"N, 115°22'11.8"W ± 15 m, 47 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4194* (CAN).

Oxytropis varians (Rydb.) K. Schum., Fig. 59B—Late yellow locoweed | North American

The current concept of *O. varians* (Aiken et al., 2007) includes the more northern species *O. hyperborea* Porsild, which has been reported from the study area (Porsild, 1943; Porsild & Cody, 1980) although we were unable to locate a voucher specimen for confirmation. We made collections at Fockler Creek, Big Creek and Bloody Falls. There are few collections of this species from elsewhere in the Canadian Arctic. It is recorded from Banks and Victoria islands, Tuktut Nogait National Park and vicinity, and near Tuktoyaktuk (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). The species is at the eastern edge of its range in the study area. Welsh (1991) treated *O. varians* (as a variety of *O. campestris* (L.) DC.) and *O. hyperborea* as distinct taxa. The name *O. hyperborea* is apparently not treated in Elven et al. (2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: second ridge N of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3209* (CAN, UBC); N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3329* (ALA, CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3557* (ALTA, CAN); S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull* 4212 (CAN).

Gentianaceae [4/4]

The generic classification here follows recent treatments of Gentianaceae (Elven et al., 2011; Pringle, in press; Struwe et al., 2002).

Comastoma tenellum (Rottb.) Toyok.—Slender gentian | Circumpolar-alpine

Previously recorded from Kugluktuk as *Gentiana tenella* Rottb. but we were unable to locate the voucher specimen at DAO (*Findlay 242*) to confirm (Cody, 1954b; Porsild & Cody, 1980). This is apparently a rare species throughout its range (Gillett, 1963; Porsild & Cody, 1980). Taxonomy follows Pringle (in press), who does not recognize infraspecific taxa as in Gillett (1957). Our single collection of this species was gathered in Kugluktuk, where we encountered a substantial population in disturbed areas along a roadside and between buildings, associated with *Artemisia tilesii*, *Hordeum jubatum*, *Poa pratensis* subsp. *alpigena* and *Salix glauca*. Elsewhere in the Canadian Arctic it is known only from Banks and Southampton islands, northern Quebec

and a few sites on mainland Nunavut (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, roadside and flats between buildings, 67°49'27.4"N, 115°5'26.2"W ± 25 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4397* (CAN, UBC).

Gentianella propinqua (Richardson) J.M. Gillett subsp. ***propinqua***, Fig. 60A—Small-flowered gentian, four-parted gentian | Amphi-Beringian (E)–North American (N)

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We were unable to locate the voucher for *Findlay 240* which was reported in Cody (1954b) as *Gentiana propinqua* Richardson. We made collections at Fockler Creek, Kendall River, Bigtree River, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This amphi-Beringian taxon is recorded from Banks and Victoria islands and the adjacent mainland, approximately as far east as Bathurst Inlet (Aiken et al., 2007; Cody et al., 2003; Porsild & Cody, 1980; Saarela et al., 2013a). Species level taxonomy here follows Pringle (in press) who recognizes two subspecies, the widespread nominate one and subsp. *aleutica* (Cham. & Schltdl.) J.M. Gillett, which is endemic to the Aleutian Islands and mainland Alaska. Elven et al. (2011), with some hesitation, recognized two sympatric infraspecific taxa, subsp. *propinqua* and subsp. *arctophila* (Griseb.) Tzvelev, the latter recognized at species level (as *Gentiana arctophila* Griseb., distinct from *Gentiana propinqua* Richardson) in Porsild & Cody (1980) and treated as a synonym of subsp. *propinqua* by Pringle (in press). Subspecies *propinqua* is defined by having corolla lobes with bristle-tips and subsp. *arctophila* is defined by having corolla lobes without bristle tips (Porsild & Cody, 1980). The

two forms are often found in the same population (Pringle, in press), as was the case in our collection no. 4396. All of our other collections are bristle-tipped.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3391* (CAN); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3407* (CAN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3573* (CAN, UBC); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3695* (CAN); flats atop and upper slopes of Coppermine Mountains, NW side of Coppermine River, 67°14'53.6"N, 115°38'37.9"W ± 15 m, 401 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3757* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, upper pond just W of Bloody Falls, 67°44'39.5"N, 115°22'28.9"W ± 10 m, 15 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3898* (CAN); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4031* (CAN); SW-facing slopes of shallow gully in sand hills above Bloody Falls, SE side of Coppermine River across river from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4188* (ALA, CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N,

115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4254* (CAN); grassy vacant lot in Kugluktuk, 67°49'30.5"N, 115°5'29.3"W ± 15 m, 21 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4343* (CAN); Kugluktuk, roadside and flats between buildings, 67°49'27.4"N, 115°5'26.2"W ± 25 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4396* (ALTA, CAN).

Gentianopsis detonsa (Rottb.) Ma subsp. ***detonsa***—Sheared gentian | Amphi-Atlantic

Previously recorded from Kugluktuk and the mouth of the Rae River, as *Gentianella detonsa* subsp. *detonsa* (Gillett, 1963), *Gentiana detonsa* Rottb. (Cody, 1954b) and *Gentiana richardsonii* (Porsild & Cody, 1980). We were unable to locate the specimens from Kugluktuk at DAO (*Findlay 240, 241*). We collected this coastal taxon on an unnamed island at the mouth of the Coppermine River. This species is not recorded from the Canadian Arctic Archipelago and is at the edge of its range in the study area. Taxonomy here follows Pringle (in press) who recognizes four subspecies in *G. detonsa*, of which only the nominate one and subsp. *yukonensis* (J.M. Gillett) J.M. Gillett are recorded for the Arctic, the latter restricted to Alaska and Yukon. *Gentiana richardsonii* A.E. Porsild, a taxon recorded for the study area in Porsild & Cody (1980) and also recognized by Elven et al. (2011), is treated as a synonym of *Gentianopsis detonsa* subsp. *detonsa* in Pringle (in press).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Rae River, mouth, 01 August 1955, *R.E. Miller 297* (CAN-242008); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3728* (CAN).

Lomatogonium rotatum (L.) Fr. subsp. ***rotatum***—Marsh felwort | European (NE) & Asian (C-NE) & North American–amphi-Atlantic (W)

Previously recorded from the mouth of the Rae River (Porsild & Cody, 1980). We did not encounter this species in 2014. This species is known from only a few collections in the Canadian Arctic (Aiken et al., 2007; Cody et al., 2003; Porsild & Cody, 1980; Saarela et al., 2013a). The other subspecies, subsp. *tenuifolium* (Griseb.) A.E. Porsild, is a western taxon that reaches the Arctic in Alaska and Yukon (Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Rae River mouth, [67.919444°N, 115.525°W], 01 August 1955, *R.E. Miller 296* (CAN-242010).

Haloragaceae [1/1]

Myriophyllum sibiricum Kom.—Northern water milfoil | Circumboreal–polar | Noteworthy Record

Our collection from Kugluk (Bloody Falls) Territorial Park is the first for the study area and fills in a distribution gap between Victoria Island to the north, the Lower Brock River to the west and the eastern shore of Great Slave Lake (Porsild & Cody, 1980; Saarela et al., 2013a). This is the second collection of the species from mainland Nunavut, the other one being from the extreme southeast (Porsild & Cody, 1980). Elsewhere in the Canadian Arctic this species is known from southern Baffin Island, Southampton Island, Tuktut Nogait National Park and vicinity, and coastal areas of western Northwest Territories and northern Quebec (Aiken et al., 2007; Garneau, 2015b; Porsild & Cody, 1980; Saarela et al., 2013a). Our material is vegetative and identification is difficult, but the plants are tentatively referred to this species which is the most northerly ranging one in North America, occurring at a few sites in the Canadian Arctic Archipelago (Aiken et al., 2007). The plants were uncommon, submersed in one foot of water along the rocky edge of a small pond, growing with *Utricularia vulgaris* and *Equisetum fluviatile*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4170* (CAN).

Lentibulariaceae [2/4]

Pinguicula villosa L., Fig. 60B—Hairy butterwort | Circumpolar-alpine | Noteworthy Record

Our two collections of this insectivorous species are the first ones for the study area and close a gap between Great Bear Lake (Porsild, 1943; Porsild & Cody, 1980), Bathurst Inlet (Cody et al., 1984) and Hood River (Gould & Walker, 1997). At a Subarctic site near Tundra Lake, in the vicinity of Fockler Creek, the species was scattered on hummocks of the moss *Sphagnum magellanicum* within a wet sedge meadow with *Carex aquatilis* var. *minor*, *Carex capillaris* subsp. *fuscidula*, *Carex chordorrhiza*, *Equisetum arvense* subsp. *alpestre*, *Pinguicula vulgaris* and *Triglochin maritimum*. Further north, in the Arctic portion of the study area, we encountered it growing on similar mossy hummocks in wet tundra around small ponds, growing with *Andromeda polifolia*, *Betula glandulosa*, *Carex membranacea* and *Rubus chamaemorus*. It is not recorded for the Canadian Arctic Archipelago (Aiken et al., 2007), and the study area is its known northern limit in the Central Arctic and Subarctic. Elsewhere in Nunavut this tiny circumpolar species has been recorded from Chesterfield Inlet, Baker Lake (*Ohenoja 107*, CAN-588143; *Wood s.n.*, CAN-265461), Rankin Inlet (*Brunton & McIntosh 10495*, CAN-565030, *10512*, CAN-565186), Bathurst Inlet (Cody et al., 1984) and a few other sites on the eastern mainland (Gussow, 1933; Porsild, 1950b; Porsild & Cody, 1980; Savile & Calder, 1952). It also reaches the Arctic in the Mackenzie River Delta area (Porsild, 1943; Porsild & Cody, 1980). It is

easily distinguished from *P. vulgaris* (Crow), which is much more common and widespread in the Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: tundra below Tundra Lake and Fockler Creek, ca. 4.1 km SE of Sandstone Rapids, Coppermine River, 67°25'20.7"N, 115°34'17.2"W ± 25 m, 271 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3426* (CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4278* (CAN).

Pinguicula vulgaris L. subsp. ***vulgaris***, Fig. S33—Common butterwort | Amphi-Pacific–North American–amphi-Atlantic–European

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This insectivorous species was recently recorded from sites to the north of the study area on Victoria Island, the first records for the western Canadian Arctic Archipelago and a major northern range extension (Gillespie et al., 2015). Elsewhere in the Canadian Arctic this species is known from southern Baffin Island and some mainland sites (Aiken et al., 2007; Gillespie et al., 2015; Porsild & Cody, 1980; Saarela et al., 2013a). Arctic plants are subsp. *vulgaris* (Elven et al., 2011). *Pinguicula vulgaris* subsp. *macroceras* (Link) Calder & R.L. Taylor is a non-Arctic taxon distributed in western North America.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 31 July 1951, *W.I. Findlay 214* (DAO-11141 barcode 000456648, QFA0274611); sedge meadow at S end of small lake, on flats NW of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'1.8"N, 115°37'30.5"W ± 20 m, 170 m, 02

July 2014, *Saarela*, *Sokoloff & Bull 3233* (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3541* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3867* (CAN); SW-facing slopes of shallow gully in sand hills above Bloody Falls, SE side of Coppermine River across river from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4190* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4266* (CAN).

Utricularia intermedia Hayne—Flat-leaved bladderwort | Circumboreal | Noteworthy Record

Newly recorded for the study area. Our collection from the Fockler Creek area represents a northeastern range extension from the nearest sites along eastern Great Bear Lake. Elsewhere in Nunavut this species is recorded from the southeastern mainland (Cody, 1996a; Porsild & Cody, 1980) and Akimiski Island (Blaney & Kotanen, 2001). The species was found submerged in shallow water in a small pool along a creek, where it was uncommon.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3275* (CAN, UBC).

Utricularia vulgaris L., Fig. 61—Common bladderwort | Circumboreal | Noteworthy Record

Newly recorded for the study area. Our collection from Kugluk (Bloody Falls) Territorial Park represents a northeastern range extension from the nearest sites along eastern Great Bear Lake. Elsewhere in Nunavut this species is recorded from the southeastern mainland (Porsild & Cody, 1980) and Akimiski Island (Blaney & Kotanen, 2001). The species was found submerged in shallow water along rocky edges of a small still pond, where it was locally common in 1–1.5 feet of water, growing with *Equisetum fluviatile*. Our collection is likely referable to *U. vulgaris* subsp. *vulgaris*, the more widely distributed taxon in North America, but the plants did not have flowers, which are needed to identify the infraspecific taxa (Crow, 2014)

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3877* (CAN, UBC).

Linaceae [1/1]

Linum lewisii Pursh subsp. ***lewisii***—Lewis's flax | North American (W) | Noteworthy Record

This species has not previously been recorded for the study area. The species was uncommon at a site along south-facing slopes of the Coppermine River, growing with *Dasiphora fruticosa* and *Plantago canescens*. Our single collection fills in a small gap in distribution between Tuktut Nogait National Park, eastern Great Bear Lake and a site between Bathurst Inlet and the study area (Porsild & Cody, 1980; Saarela et al., 2013a). In mainland Nunavut it has been recorded as far east as Bathurst Inlet (Porsild & Cody, 1980). In the Canadian Arctic Archipelago it is known only from the Minto Inlet area of Victoria Island (Aiken et al., 2007). The other infraspecific taxon, subsp. *lepagei* (B. Boivin) Mosquin, is endemic to shores and islands along the southern

part of Hudson Bay and James Bay where it is restricted to limestone outcrops (Elven et al., 2011; Mosquin, 1971).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3634* (CAN).

Linnaeaceae [1/1]

Linnaea borealis subsp. ***americana*** (J. Forbes) Hultén, Fig. 62—Twinflower | North American | Noteworthy Record

This is the first record of this species for the study area. We made collections at Big Creek, a site north of Sandstone Rapids, Coppermine Mountains and Bloody Falls. It was recently reported from the Big Bend area of the Coppermine River, just south of the study area (Reading 17; Cody et al., 2003) and a site east of the confluence of the Coppermine and Kendall rivers (Cody & Reading, 2005). Our collections represent a minor northern range extension with respect to these earlier ones. The next-nearest records are from eastern Great Bear Lake (Porsild & Cody, 1980). Of the three subspecies recognized in *Linnaea borealis*, subsp. *borealis* and subsp. *americana* reach the Arctic in North America (Elven et al., 2011; Hultén, 1968). Subspecies *americana* is distributed across most of North America. It has previously been reported from mainland Nunavut but only in the Subarctic Nueltin Lake area (Porsild, 1950b; Porsild & Cody, 1980). This is the first Arctic record of this taxon for Nunavut. The species reaches the Arctic elsewhere in the Mackenzie Delta area and Alaska (Porsild & Cody, 1980). The northernmost collections made in the study area are from Kugluk (Bloody Falls) Territorial Park. The species is fairly common in the study area, where it grows, often in large populations, on south-facing slopes

usually under willow thickets. Common associates include *Arnica angustifolia*, *Betula glandulosa*, *Dasiphora fruticosa*, *Lupinus arcticus*, *Juniperus communis* subsp. *depressa*, *Salix glauca*, *S. reticulata*, *Vaccinium uliginosum* and *Pyrola grandiflora*.

Linnaea L. was previously included in Caprifoliaceae but is now recognized in its own family, Linnaeaceae (Backlund & Pyck, 1998). Based on the results of molecular analyses, expansion of the traditionally monotypic genus *Linnaea* was recently proposed to accommodate 17 species previously recognized in different genera (Christenhusz, 2013); none of these reach the Arctic. For an alternate taxonomic solution see Wang et al. (2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3565* (CAN, UBC); S-facing slopes above Coppermine River and below spruce forest, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3646* (CAN, MO, MT); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3781* (CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4071* (ALA, ALTA, CAN); S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4203* (CAN).

Onagraceae [2/6]

Chamerion angustifolium (L.) Holub subsp. ***angustifolium***, Fig. 63—Fireweed | Circumboreal–polar

Recorded previously for the area (Mosquin, 1966; Porsild & Cody, 1980), but we were unable to locate a voucher specimen for verification. We made collections at Fockler Creek, Kendall River, Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. This species is at its northern limit along the mainland coast. It is not recorded in the western Canadian Arctic Archipelago, but is known in the East from southern Baffin Island (Aiken et al., 2007). This common boreal-Subarctic species was previously recognized as *Epilobium angustifolium* L. subsp. *angustifolium* (Porsild & Cody, 1980). It flowers much later than other species in the study area. It was similarly reported to be a late-flowering species in the Nueltin Lake area of southeastern mainland Nunavut (Porsild, 1950b). The other infraspecific taxon, subsp. *circumvagum* (Mosquin) Hoch, is reported for the Arctic (Elven et al., 2011) in Canada but its exact Arctic distribution is unclear.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3204* (CAN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3575* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4038* (ALA, CAN);

Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4081* (CAN, MO, MT); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4256* (ALTA, CAN); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine River, 67°48'33.8"N, 115°12'52.9"W ± 15 m, 39 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4317* (CAN, O).

Chamerion latifolium (L.) Holub, Fig. S34—Arctic fireweed, dwarf fireweed, river beauty, broad-leaved willow-herb | Circumpolar–alpine

Recorded previously from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections of this common species at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). White-flowered forms of the species were scattered amongst normal-flowered individuals (pers. obs.) in a population growing on the southern sandy shores of Heart Lake and at Bigtree River; we did not document this variation with our collections. This species was previously recognized as *Epilobium latifolium* (L.) Holub (Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 27 July 1951, *W.I. Findlay 202* (ACAD-30945, DAO-133011 barcode 01-01000619653); ibid., 18 July 1951, *W.I. Findlay 153* (DAO-133012 barcode 01-01000619654); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 July 1951, *W.I. Findlay 156* (DAO-

133038 barcode 01-01000619657); Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23 June 1999, *C.L. Parker & I. Jonsdottir 9100* (ALA, as *Epilobium latifolium*); Kugluktuk, rocky slope at base of rock outcrop, [67°49'36"N, 115°5'36"W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015861); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3169* (CAN, NY, QFA); Coppermine River, confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3488* (CAN, US); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3961* (CAN, WIN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, just above Bloody Falls, 67°44'22.6"N, 115°22'52"W ± 20 m, 40 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4109* (CAN).

Epilobium* cf. *anagallidifolium Lam.—Alpine willowherb | Asian (C-NE)–amphi-Pacific/Beringian & North American (NE)–amphi-Atlantic–European (N/C) | Noteworthy Record

Our collection from Kugluktuk, tentatively identified as this taxon, represents the first record for Nunavut and a range extension from the nearest site on western Great Bear Lake (Porsild & Cody, 1980). The plants grew in moist to wet cracks along rocky cliffs just above the Coppermine River. The taxon was treated in Aiken et al. (2007) as occurring on "Nunavut Islands…range in the Canadian Arctic Archipelago not yet recorded" but no evidence that it actually occurs there is provided: a specimen previously identified as this species from that area is noted and no distribution is given. The taxon is widespread in eastern and western North

America, with a large gap in distribution in Central Canada (Porsild & Cody, 1980). If confirmed, this collection would be the northernmost record of the species in the Canadian Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4263* (CAN).

Epilobium arcticum Sam.—Arctic willowherb | Nearly circumpolar | Noteworthy Record

This species is newly recorded for the study area, where we made a single collection. The species was uncommon in low shrub tundra in Kugluk (Bloody Falls) Territorial Park, growing with *Betula glandulosa*, *Eriophorum vaginatum* subsp. *vaginatum*, *Rumex arcticus*, *Rhododendron lapponicum* and *Salix* spp. It is known from elsewhere on mainland Nunavut from a few collections from the Hudson Bay area, Boothia Peninsula and the Bissett Lake area (Cody et al., 2003; Porsild & Cody, 1980). The nearest collections are from Cambridge Bay and Ulukhaktok on adjacent Victoria Island (Aiken et al., 2007; Porsild & Cody, 1980), and our collection represents a southern range extension with respect to those. It is widespread throughout the Canadian Arctic Archipelago (Aiken et al., 2007). This taxon differs from *E. palustre* by its remotely denticulate leaves (vs. entire), and from *E. davuricum* by its narrowly oblong leaves (vs. linear).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4052* (CAN).

Epilobium davuricum Fisch. ex Horn.—Dahurian willowherb | Circumboreal-polar | Noteworthy Record

Our collection of this species from Kugluk (Bloody Falls) Territorial Park is the first one for the study area, and represents a range extension for the species from the nearest known collections from eastern Great Bear Lake (Porsild, 1943; Porsild & Cody, 1980). The study area is the known northern limit of the species in the Central Arctic. It is not recorded for the Canadian Arctic Archipelago (Aiken et al., 2007). Elsewhere in Nunavut, the species is recorded from the Kazan River area (Porsild, 1943; Porsild & Cody, 1980), Bissett and Bernier Lake areas (Cody et al., 2003), and T-Bone Lake (Cody & Reading, 2005). Our specimen was growing in luxuriant grass/sedge vegetation along an ATV trail, with *Arctagrostis latifolia* subsp. *latifolia*, *Bistorta vivipara*, *Juncus leucochlamys*, *Poa arctica* subsp. *arctica* and *Salix* spp. It was taken as part of a mixed collection, of which 4102a is *E. palustre*. *Epilobium davuricum* differs from *E. palustre* by its remotely denticulate leaves (vs. entire), and from *E. arcticum* by its linear leaves (vs. narrowly oblong).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, along wet, muddy, and deeply pitted ATV trail ca. 1 km W of Bloody Falls, 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4102b* (CAN).

Epilobium palustre L., Fig. 64A—Marsh willowherb | Circumboreal-polar

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. This is the most common *Epilobium* species in the study area. Elsewhere in the Canadian Arctic it is

recorded from Southampton Island and numerous mainland sites (Aiken et al., 2007; Cody & Reading, 2005; Cody et al., 2003; Korol, 1992; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 August 1951, *W.I. Findlay 248* (DAO-134304 barcode 01-01000616663); Kugluk (Bloody Falls) Territorial Park, flats above Coppermine River valley, ca. 1 .k km W of Bloody Falls, 67°44'31.8"N, 115°24'25.6"W ± 5 m, 97 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4103* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, along wet, muddy, and deeply pitted ATV trail ca. 1 km W of Bloody Falls, 67°44'33.2"N, 115°23'30"W ± 20 m, 73 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4102a* (CAN); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine River, 67°48'33.8"N, 115°12'52.9"W ± 15 m, 39 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4313* (ALTA, CAN, O); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4366* (ALA, CAN).

Orobanchaceae [2/11]

Castilleja caudata (Pennell) Rebrist., Fig. 64B—Pale paintbrush | Asian (NE)–amphi-Beringian | Noteworthy Record

This species is newly recorded for the study area, and the collections reported here close a gap in the species' distribution between the Bathurst Inlet area, Hood River, Great Bear Lake and Tuktut Nogait National Park and vicinity (Gould & Walker, 1997; Porsild & Cody, 1980; Saarela et al., 2013a). The species is widespread throughout the study area, and we made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The study area represents

its known northern limit in Nunavut. It is not recorded from the Canadian Arctic Archipelago (Aiken et al., 2007).

The Canadian Arctic *Castilleja* species are difficult to distinguish. Taxonomy here follows Porsild & Cody (1980) and Elven et al. (2011) and our identifications are based on keys and descriptions in Pennell (1934) and Porsild & Cody (1980), and study of type specimens and other material at CAN, much of which has been recently annotated by *Castilleja* authority M. Egger (WTU). *Castilleja ca*udata is part of the widespread and taxonomically challenging *C. pallida* (L.) Spreng. complex (Egger, 2008). Egger (2008) recognized the taxon as a *C. pallida* var. *caudata* (Pennell) B. Boivin, while Pennell (1934), in his taxonomic treatment of the group in Alaska and northwestern Canada, treated it as *C. pallida* subsp. *caudata* Pennell. Two of our collections (*4418*, *4419*) are unusual in having branched stems; both were gathered on a sandy floodplain of the Coppermine River. No. *4418* was recorded as being uncommon in large stand of "typical" (unbranched) *C. caudata*. A specimen from Bloody Falls (*Findlay 200*) identified as *C. pallida* subsp. *mexiae* Pennell var. *elegans* (Malte) Boivin (=*Castilleja elegans*) by W.J. Cody in 1952 (Cody, 1954b) and as *C. pallida* subsp. *pallida* by Cody and A.E.Porsild in 1967, is placed here.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 27 July 1951, *W.I. Findlay 200* (DAO-179175 barcode 01-01000620019); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3183* (CAN, UBC); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3240* (CAN, US, WIN); Kugluk (Bloody Falls)

Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3819a* (CAN, MT); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3977* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4073* (CAN); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4074* (CAN); SW-facing slopes of shallow gully in sand hills above Bloody Falls, SE side of Coppermine River across river from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4187* (ALTA, CAN); SW-facing slopes of shallow gully in sand hills above Bloody Falls, SE side of Coppermine River across river from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4189* (CAN, O); grassy sandy flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4418* (CAN); grassy sandy flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4419* (CAN, O)**.**

Castilleja elegans Malte, Fig. 65—Elegant paintbrush | Amphi-Beringian–North American (NW)

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Heart Lake and Kugluktuk. Elsewhere in the Canadian Arctic this species is recorded from Banks and Victoria islands and numerous sites on mainland Nunavut (Aiken et al., 2007; Porsild & Cody, 1980). In the course of examining material in CAN, a previously unrecorded isotype for the name *C. elegans* was found (*Cox & O'Neill 433*, CAN-504545) where the holotype is also housed (*Cox & O'Neill 433*, CAN-96165). Taxonomy here follows numerous authors who have recognized this taxon at the species level (Egger, 2008; Elven et al., 2011; Malte, 1934; Porsild & Cody, 1980). Pennell (1934) recognized the taxon as *C. pallida* subsp. *elegans* (Malte) Pennell.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, 67.8272°N, 115.113617°W, 03 July 2006, *J. Davis 615* (CAN-597638); Coppermine [Kugluktuk], vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17184* (CAN-128080); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 21* (CAN-96166); Coppermine [Kugluktuk], rocky ledge overlooking Coppermine River, [67.816375°N, 115.1002722°W ± 350 m], 11 July 1958, *R.D. Wood s.n.* (CAN-265479); Coppermine [Kugluktuk], [67°49'36"N, 115°5'36"W ± 1.5 km], 08 July 1955, *R.E. Miller 51* (CAN-242011); Heart Lake, SW of Kugluktuk, 6.4 km SW of mouth of Coppermine River, 67°48'7.8"N, 115°13'22.7"W ± 350 m, 33 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4298* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4381* (CAN, UBC).

Castilleja raupii Pennell—Raup's paintbrush | North American (N) | Noteworthy Record

This species is newly recorded for the study area. Our collections from Melville Creek and Kugluk (Bloody Falls) Territorial Park, together with one from Kugluktuk gathered by B. Bennett in 2013, represent a range extension from the nearest collection from Great Bear Lake (*Porsild & Porsild 5184*, CAN-96181, det. M. Egger 2000-2001). The study area represents the known northern limit of the species in Nunavut. Elsewhere in Nunavut it is known from a few Arctic locations on the mainland (Korol, 1992; Porsild & Cody, 1980; specimens at CAN) and Akimiski Island (Blaney & Kotanen, 2001). One of our collections was taken as part of a mixed collection with *C. caudata* (no. 3819a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0332* (BABY, det. B.A. Bennett, July 2013); Kitikmeot Region: confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3502* (CAN, K, UBC, US); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3819b* (CAN).

Pedicularis albolabiata (Hultén) Kozhevn., Fig. S35—Sudetic lousewort, white-lipped lousewort | Asian (N)–amphi-Beringian–North American (N)

Recorded previously from Bloody Falls and Kugluktuk as *P. sudetica* (Cody, 1954b; Porsild & Cody, 1980). We made collections of this species at Fockler Creek, Big Creek, Kendall River, Kugluk (Bloody Falls) Territorial Park and on an island in the mouth of the Coppermine River. *Pedicularis albolabiata* is widespread throughout the Canadian Arctic Archipelago and the adjacent mainland Arctic (Aiken et al., 2007; Porsild & Cody, 1980). *Pedicularis albolabiata*

and P. *arctoeuropaea* (see next species) were previously treated as *P. sudetica* Willd., sometimes as subspecies. Molau & Murray (1996) revised the Arctic-alpine *P. sudetica* complex and recognized these taxa as species. A key to the group in Arctic Canada is given in Saarela et al. (2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 152* (DAO-179476 barcode 01-01000619959); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 174* (DAO-179506 barcode 01-01000619960); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 80* (DAO-179477 barcode 01-01000619958); Kugluktuk, upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015871); sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3230a* (CAN, O); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3252* (CAN, UBC); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3556* (CAN); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3580* (ALA, CAN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3719* (CAN, MO, MT); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N,

115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3917* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, along Portage Trail at top of ridge on W bank of Coppermine River, near start of Bloody Falls rapids, 67°44'22.5"N, 115°22'40.6"W ± 10 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3930* (CAN).

Pedicularis arctoeuropaea (Hultén) Molau & D.F. Murray—Sudetic lousewort, arctoeuropean lousewort | European (N)– Asian (N)–amphi-Beringian | Noteworthy Record

This is the first report of the species from the study area, based on the re-determination of a specimen (*Wood s.n.*) previously identified as *P. sudetica* (see above) and our new collection from Richardson Bay. At that site, the species was scattered along the upper edges of the estuary, growing with *Carex subspathacea*, *Stellaria humifusa*, *Potentilla anserina* and *Puccinellia phryganodes*. These two records close a gap between the vicinity of the mouth of the Brock River, Northwest Territories (Saarela et al., 2013a), and an island in Coronation Gulf northeast of the study area (Aiken et al., 2007). Elsewhere in the Canadian Arctic, *P. arctoeuropaea* is recorded from a few sites on mainland Nunavut as well as Banks, Coats, Melville and Victoria islands (Aiken et al., 2007). All of these are further east than the distribution given for the species in Molau & Murray (1996).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], near school in settlement., [67°49’36”N, 115°5’36”W ± 1.5 km], 12 July 1958, *R.D. Wood s.n.* (CAN-265464); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3676* (CAN).

Pedicularis capitata Adams, Fig. 66A —Capitate lousewort, Bananas | Asian (N)–amphi-Beringian–North American (N)

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections of this species at Fockler Creek, along the Coppermine River between Escape Rapids and Muskox River and at Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic Archipelago and the mainland Arctic (Aiken et al., 2007; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 76* (DAO-179303 barcode 01-01000620142); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 30 June 1951, *W.I. Findlay 56* (DAO-179304 barcode 01-01000620143); Kugluktuk, upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015874); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3145* (CAN); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3624* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3924* (CAN).

Pedicularis flammea L., Fig. 66B—Red-tipped lousewort | North American (N)–amphi-Atlantic (W) | Noteworthy Record

Newly recorded for the study area. Our collection closes a gap between Bathurst Inlet, Tuktut Nogait National Park and vicinity, and eastern Great Bear Lake (Porsild & Cody, 1980; Saarela et al., 2013a). The species was uncommon in a Subarctic mesic meadow along a creek near Fockler Creek growing with *Arctous rubra*, *Betula glandulosa*, *Carex scirpoidea* subsp. *scirpoidea*, *Hedysarum americanum*, *Lupinus arcticus*, *Luzula confusa*, *L. nivalis* and *Vaccinium uliginosum*. Elsewhere in the Canadian Arctic it is recorded from the eastern Arctic Archipelago, mainland Nunavut and northern Quebec (Aiken et al., 2007; Cody et al., 2003; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). In the western portion of its range, it is not recorded from north of the mainland.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3242* (CAN).

Pedicularis labradorica Wirsing, Fig. S36A—Labrador lousewort | Asian (N/C)–amphi-Beringian–North American (N)

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980) but we were unable to locate the voucher specimen (*Findlay 136*) for confirmation. We made collections at Fockler Creek, Melville Creek and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic it is recorded from Banks Island, southern Baffin Island and several sites on mainland Nunavut and Northwest Territories (Aiken et al., 2007; Bennett, 2015; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3239* (CAN); S side of Fockler Creek, ca. 2.7 SE of Sandstone Rapids, Coppermine River, 67°25'38.2"N, 115°36'54.9"W ± 50 m, 128 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3408* (CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3529* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3950* (ALA, CAN).

Pedicularis lanata Willd. ex Cham. & Schltdl., Fig. S36B—Woolly lousewort | Amphi-Beringian–North American (N)

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek, and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Cody et al., 2003; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 14 June 1951, *W.I. Findlay 13* (DAO-179422 barcode 01-01000622681); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 81* (DAO-179423 barcode 01-01000622684); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3058* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids,

Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3279* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3528* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4067* (CAN); Kugluk (Bloody Falls) Territorial Park, wet meadow between Coppermine River and large sand hills on W side of river, 0.5 km W of Bloody Falls, 67°44'44.8"N, 115°22'48.3"W ± 15 m, 33 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4051* (CAN).

Pedicularis langsdorffii subsp. ***arctica*** (R. Br.) Pennell ex Hultén, Fig. S37—Arctic lousewort | Asian (NE)–Amphi-Beringian–North American (N)

Recorded previously from Kugluktuk as *P. arctica* R. Br. (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, along the Coppermine River between Muskox Rapids and Escape Rapids, and in Kugluk (Bloody Falls) Territorial Park. The taxon is now recognized as a subspecies of *P. langsdorffii* Fisch. ex Steven (Elven et al., 2011). It is widespread throughout the central and western Canadian Arctic Archipelago, and is recorded from Arctic sites on mainland Nunavut and Northwest Territories (Aiken et al., 2007; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a). Elven et al. (2011) recognized one other subspecies and one variety in the Panarctic flora, but only subsp. *arctica* occurs in the Canadian Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 78* (DAO-179263 barcode 01-01000620014); Coppermine [Kugluktuk], Cemetery Island, 67°50'N, 115°7'W, 14 July 1951,

W.I. Findlay 123 (DAO-179262 barcode 01-01000616607); sedge meadow at S end of small lake, on flats NW of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'1.8"N, 115°37'30.5"W ± 20 m, 170 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3235* (CAN, UBC); sedge meadow adjacent to small lake on flats N of Fockler Creek, ca. 1.5 km SSE of Sandstone Rapids, Coppermine River, 67°26'8.8"N, 115°37'35.9"W ± 20 m, 168 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3230b* (CAN); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3618* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, along ATV trail below slope of sand hill just below picnic bench/lookout area, 67°44'41.5"N, 115°22'14.9"W ± 15 m, 15 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4152* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4154* (CAN).

Pedicularis lapponica L.—Lapland lousewort | Circumpolar-alpine

Recorded previously from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic *P. lapponica* is recorded from Southampton Island, southern Baffin Island, mainland Nunavut and Northwest Territories, and northern Quebec and Labrador (Aiken et al., 2007; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980). The species is not recorded from beyond the mainland in the western Canadian Arctic.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 134* (DAO-179454 barcode 01-01000619948);

Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 13 July 1951, *W.I. Findlay 116* (DAO-179452 barcode 01-01000619949, QFA0274332); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 79* (DAO-179453 barcode 01-01000619947); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 20* (DAO-179451 barcode 01-01000619950); Kugluktuk, upper tundra slope overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July 2000, *L.K. Benjamin s.n.* (ACAD-ECS015869); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3056* (CAN, UBC); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3135* (CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3837* (ALA, CAN).

Papaveraceae [1/1]

Papaver hultenii Knaben, Fig. S38—Hulten’s poppy | Beringian American (or amphi-Beringian)

Recorded previously from Kugluktuk as *P. radicatum* Rottb. (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, south of Escape Rapids along the Coppermine River, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The taxonomy of Arctic poppies is notoriously difficult (Elven et al., 2011; Solstad, 2009). Porsild & Cody (1980) recognized two species in the study area, *P. hultenii* and *P. radicatum* Rottb. s.l. Kiger & Murray (1997) treated *P. hultenii* as a synonym of *P. lapponicum* (Tolm.) Nordh. Solstad (2009) recognized *P. hultenii* as the major Beringian component of North American

Arctic poppies previously recognized as *P. lapponicum* or *P. radicatum*, based primarily on AFLP data which did not support a close relationships between *P. hultenii* and *P. lapponicum*. According to their circumscription, *P. hultenii* is the dominant poppy in the western Canadian Arctic, distributed at least as far east as Bathurst Inlet and Cambridge Bay, Nunavut (specimens at CAN, det. Solstad and Elven, 2009). *Papaver hultenii* was described from plants grown from seed collected in the study area at "outlet of Copper Mine River" by M. Hammer in 1948 (holotype O) (Knaben, 1959). The locality was erroneously recorded in the protologue as being in Alaska. The type specimen (not seen) is a luxurious specimen and apparently does not resemble wild plants (Solstad, 2009), probably because it is was cultivated rather than wild-collected. Despite apparent molecular differences, distinguishing characters between *P. hultenii* and *P. lapponicum* are unclear. The characters in the key in Solstad (2009) leading to *P. lapponicum* s.l. (blades not divided to mid axis; stigmatic papillae short, little conspicuous) and *P. hultenii* (blades divided to or nearly to mid axis; stigmatic papillae usually long, conspicuous) are difficult to apply. They appear to be highly variable within and among each taxon, based on examination of CAN specimens identified as each taxon by H. Solstad and R. Elven, and do not seem to reliably distinguish them (J.M. Saarela, personal obs.). Two previous collections from the study area were determined as *P. hultenii* by H. Solstad and R. Elven (det. 2009), and we tentatively include all of our poppy collections here. Definitive identification awaits a full taxonomic treatment with keys and morphological descriptions for all North American Arctic poppies.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, near houses, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17175* (CAN-127777); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N,

115.2037222°W ± 7.5 km], 1931, *A.M. Berry 7* (CAN-59606); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 6* (CAN-59607); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 117* (DAO-184610, det. R. Elven & H. Solstad); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 88* (DAO-184611, det. R. Elven & H. Solstad); old riverbed of Fockler Creek, E side of Coppermine River, ca. 2.3 SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3451* (ALTA, CAN, MO, MT, O); S of Fockler Creek, above small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 100 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3454* (CAN, UBC); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3630* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3777* (CAN); Kugluk (Bloody Falls) Territorial Park, N-facing slopes of large mountain just S of start of Bloody Falls, W side of Coppermine River, 67°44'7.7"N, 115°23'30.4"W ± 15 m, 90 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4005* (CAN); grassy vacant lot in Kugluktuk, 67°49'30.5"N, 115°5'29.3"W ± 15 m, 21 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4345* (ALA, CAN).

Parnassiaceae [1/2]

Parnassia kotzebuei Cham. ex Spreng., Fig. S39—Kotzebue's grass-of-Parnassus | Amphi-Beringian–North American (N)

Recorded previously from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park, Escape Rapids and Richardson Bay. This species is widespread across the mainland Canadian Arctic, and in the Arctic Archipelago is known from Banks and Victoria islands, and southern Baffin Island (Aiken et al., 2007; Blondeau, 2015c; Cody et al., 2003; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 142* (DAO-76873 barcode 01-01000619906); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 107a* (DAO-76872 barcode 01-01000619903); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 172* (ALTA-VP-10154, DAO-76874 barcode 01-01000619905, UBC-V40781); Coppermine [Kugluktuk], Cemetery Island, 67°50'N, 115°7'W, 14 July 1951, *W.I. Findlay 120* (DAO-76871 barcode 01-01000619914); Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 10 July 1958, *R.D. Wood s.n.* (CAN-265526); Coronation Gulf Region, Coppermine River, east bank, 10 July 1955, *R.E. Miller 90* (CAN-241984); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 93* (LEA); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3260* (CAN); S-facing slopes above Coppermine River and below spruce forest, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3650* (CAN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3680* (CAN, UBC); SE-facing slopes above Escape

Rapids, W side of Coppermine River, 67°36'58.7"N, 115°29'18.3"W ± 99 m, 50 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3733* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3869* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3970* (CAN).

Parnassia palustris subsp. ***neogaea*** Hultén, Fig. 67—Grass-of-Parnassus | Amphi-Beringian–North American

Recorded previously from the mouth of the Rae River (Porsild & Cody, 1980). We collected the taxon in Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This is primarily a boreal taxon known from some other Arctic sites on mainland Nunavut and Northwest Territories, and northern Quebec and Labrador, but it is not recorded from the Canadian Arctic Archipelago (Aiken et al., 2007; Blondeau, 2015c; Cody et al., 2003; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). The species is at the edge of its known range in the study area. Taxonomy follows Elven et al. (2011), who recognize two subspecies; the other one, subsp. *palustris*, is not recorded for Canada. Porsild & Cody (1980) treated the taxon as *P. palustris* var. *neogaea* Fern.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Rae River mouth, [67.919444°N, 115.525°W ±], 02 August 1955, *R.E. Miller 307* (CAN 241985); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3862* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky beach above

Bloody Falls, W bank of Coppermine River, 67°44'18"N, 115°22'57.3"W ± 250 m, 34 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3968* (CAN); Kugluk (Bloody Falls) Territorial Park, sandy NE-facing slope above small creek in deep gully, about 0.5 km W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 41 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4017* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky sandy beach just below Bloody Falls, W side of Coppermine River, vicinity of confluence with small creek, beach seasonally flooded, 67°44'54.5"N, 115°22'17.2"W ± 75 m, 9 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4115* (ALTA, CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4246* (CAN); grassy sand flats on extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'54.3"N, 115°6'9.1"W ± 20 m, 5 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4414* (CAN, MO, O).

Plantaginaceae [2/3]

Hippuris lanceolata Retz.—Lance-leaved mare's-tail | Circumpolar | Noteworthy Record

This emergent aquatic species is newly recorded for the study area based on a single collection from an unnamed island at the mouth of the Coppermine River. The plants were growing in 1–1.5 ft. of water in a small pond. *Hippuris* taxonomy follows Elven et al. (2011) and Elven et al. (2012). Given previous misunderstanding of species limits in this genus, earlier range maps of the taxa in the Arctic are unreliable (Elven et al., 2011) with the exception of those in Aiken et al. (2007) based upon taxon records from Coats, Baffin, Banks, Ellesmere, Southampton and Victoria islands, as well as one mainland site along Hudson Bay south of Wager Bay. The

species is also recorded on the mainland from Tuktut Nogait National Park and vicinity (Saarela et al., 2013a). No *Hippuris* taxa were reported for the study area in Porsild & Cody (1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3721* (CAN).

Hippuris vulgaris L. Common mare's-tail | Circumboreal | Noteworthy Record

This emergent aquatic taxon is newly recorded for the study area. We made collections at a site between Escape Rapids and Muskox Rapids, as well as Kugluk (Bloody Falls) Territorial Park and Kugluktuk. See additional comments re: taxonomy under *H. lanceolata*. Elsewhere in the Canadian Arctic, Aiken et al. (2007) recorded this species on Baffin, Devon, Ellesmere, Southampton and Victoria islands, and across the mainland.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3616* (ALA, ALTA, CAN, MO, O, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3902* (CAN); flats below large overhanging cliffs above Coppermine River, just S of Kugluktuk, 67°48'56.7"N, 115°6'22.6"W ± 10 m, 2 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4410* (CAN).

Plantago canescens subsp. ***richardsonii*** (Decne) Tzvelev.—Hairy plantain, grey-pubescent plantain, arctic plantain | American Beringian

Previously reported from Kugluktuk (Bassett, 1967; Cody, 1954b; Porsild & Cody, 1980). We made collections at Tundra Lake in the Fockler Creek area, Melville Creek, Richardson Bay and Kugluk (Bloody Falls) Territorial Park. Elven et al. (2011) recognize three subspecies; only subsp. *richardsonii* is present in North America. Elsewhere in the Canadian Arctic this species is recorded from Banks and Victoria islands, sites on mainland Northwest Territories, a site in Nunavut west of the study region, and Bathurst Inlet, where the species reaches its known eastern limit (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 178B* (ALTA-VP-15952, DAO-179628 barcode 01-01000620139); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'34.8"N, 115°33'27.8"W ± 20 m, 265 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3433* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3508* (CAN); S-facing sandstone cliffs above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'15.1"N, 115°36'19.1"W ± 50 m, 106 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3637* (ALA, CAN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3666* (CAN, MT, O); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3810* (ALTA, CAN).

7536 **Plumbaginaceae [1/1]**

7537 ***Armeria maritima*** subsp. ***sibirica*** (Turcz. ex Boiss.) Nyman, Fig. S40—Arctic thrift, sea pink |
7538 Circumpolar

7539 Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made
7540 collections at Fockler Creek, Big Creek, Richardson Bay, Kugluk (Bloody Falls) Territorial Park
7541 and near Heart Lake. Taxonomy follows Lefèbvre & Vekemans (1995); Lefèbvre & Vekemans
7542 (2005), who recognize four subspecies in *A. maritima* (Mill.) Willd. s.l. in North America, of
7543 which two occur in the Arctic. Subsp. *sibirica* is widely distributed in the Canadian Arctic, while
7544 subsp. *maritima* is restricted to Greenland. Elven et al. (2011) recognized the taxon at the species
7545 level, as *A. scabra* Pall. ex Roem. & Schult. Porsild and Cody (1980) recognized two subspecies
7546 in *A. maritima*, the Amphi-Beringian subsp. *arctica* (Cham.) Hultén and the Amphi-Atlantic
7547 subsp. *labradorica* (Wallr.) Hultén. Both of these were included in subsp. *sibirica* by Lefèbvre &
7548 Vekemans (1995); Lefèbvre & Vekemans (2005).

7549 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort
7550 Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 20* (CAN-
7551 91995); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 3 July 1951, *W.I. Findlay 77*
7552 (DAO1178656 barcode 01-01000619661); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W,
7553 4 August 1951, *W.I. Findlay 249* (ACAD-30916, ALTA-VP-14343, DAO-178655 barcode 01-
7554 01000619660); Coppermine [Kugluktuk], Cemetery Island, [67.834275°N, 115.0671833°W ±
7555 0.8 km], 09 July 1955, *R.E. Miller 64* (CAN-242003); Coppermine [Kugluktuk], vic. of hamlet
7556 and airstrip, 67.78°N, 115.5°W ± 3615 m , 23 June 1999, *C.L. Parker & I. Jonsdottir 9097*
7557 (ALA); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of

Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela, Sokoloff & Bull 3110* (ALA, CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3186* (CAN); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3251* (ALTA, CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3559* (CAN, O); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3690* (CAN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3709* (CAN, UBC, US); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3988* (CAN, MO); hummocky tundra just SW of sewage retaining pond, N side of road to Heart Lake cemetery, 5.4 km SW of mouth of Coppermine River, 67°48'44.6"N, 115°12'27.2"W ± 3 m, 35 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4327* (CAN, MT).

Polygonaceae [5/5]

Bistorta vivipara (L.) Delarbre, Fig. 68A—Alpine bistort | Circumboreal–polar

Recorded previously from Kugluktuk as *Polygonum viviparum* L. (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kendall River, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. The species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015d; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 171* (DAO-189356 barcode 01-01000677353); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3269* (CAN); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3379* (CAN, UBC); confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3579* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3926* (CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'17.6"N, 115°22'14.2"W ± 20 m, 76 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4141* (CAN); Kugluktuk, roadside and flats between buildings, 67°49'27.4"N, 115°5'26.2"W ± 25 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4395* (ALTA, CAN).

Koenigia islandica L., Fig. 68B—Iceland purslane | Circumpolar-alpine

Previously recorded from Kugluktuk (Hedberg, 1997; Porsild & Cody, 1980). We collected it only along the northern shore of Heart Lake southwest of Kugluktuk, where it was locally common. This diminutive taxon has a scattered distribution across mainland Nunavut (Cody et al., 2003; Cody et al., 1989; Porsild & Cody, 1980), but is likely more common than existing collections suggest. Elsewhere in the Canadian Arctic it is recorded from Baffin, Devon and Southampton islands, and northern Quebec and Labrador (Aiken et al., 2007; Blondeau, 2015d).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 10 July 1955, *R.E. Miller 80* (CAN-241968); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine River, 67°48'33.4"N, 115°12'38.8"W ± 25 m, 31 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4311* (CAN); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine River, 67°48'33.8"N, 115°12'52.9"W ± 15 m, 39 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4315* (CAN, UBC).

Oxyria digyna (L.) Hill—Mountain sorrel, alpine sorrel | Circumpolar–alpine

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections of this common species at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This species is widely distributed throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015d; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 2 July 1951, *W.I. Findlay 67* (DAO-186198 barcode 01-01000677369); Kugluktuk, 67.798017°N, 115.23075°W, 22 June 2006, *J. Davis 605* (CAN-597645); Kugluktuk, disturbed rocky/gravelly ground around house, top of NW-facing gravel

slope, just SE of Igalik Building, 67°49'29.6"N, 115°6'31"W ± 10 m, 13 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3100* (ALA, ALTA, CAN); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3189* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3888* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4162* (CAN); N-facing slope on high terrace above Bloody Falls rapids, SE side of Coppermine River, 67°44'16.2"N, 115°22'1.8"W ± 25 m, 91 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4227* (CAN, MO, MT); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4353* (CAN, UBC).

Polygonum aviculare L. s.l.—Prostrate knotweed | Noteworthy Record

Our collection is the first report of *P. aviculare* s.l. for the study area and for Nunavut. The species was found growing in patches on disturbed ground along the roadside in Kugluktuk. The introduced *P. aviculare* is difficult to distinguish from the native *P. humifusum* subsp. *caurianum* (B.L. Rob.) Costea & Tardif [as *P. caurianum* B.L. Rob. in Porsild & Cody (1980)], as the ranges of most characteristics used to distinguish the species overlap (Costea & Tardif, 2003). The main character used to distinguish the taxa in the taxonomic key in Costea et al. (2003) deals with the morphology of the achene (striate-tubercled, uniformly tubercled, or obscurely tubercled vs. smooth or roughened; these character states are illustrated in Wolf & McNeill (1986)), which must be observed at very high magnification. The character states can be

7646 difficult to discern (J.M. Saarela, pers. obs.). We tentatively assign this collection to *P. aviculare*,
7647 on the basis of its minutely papillate achenes (visible at 100x) [vs. smooth or roughened], green
7648 blades [vs. usually reddish or purple tinged], perianth 2.7–3.2(–3.4) mm [vs. 1.5–2.3(–3) mm],
7649 achenes ≥ 2.3 mm long [vs. 1.4–1.6(–2.2) mm], leaves alternate at proximal nodes [vs. often
7650 opposite at proximal nodes], leaves ocrea usually ≥4 mm [vs. 2–3(–4) mm], pedicels ocrea ca. 4
7651 mm [vs. 0.5–1.5 mm].

7652 Six subspecies are recognized in *Polygon aviculare* (Costea et al., 2003). None of these
7653 are reported for Nunavut in Costea et al. (2003) and Costea & Tardif (2005), and subsp.
7654 *aviculare*, subsp. *buxiforme* (Small) Costea & Tardif, and subsp. *depressum* (Meisner) Arcangeli
7655 are recorded for Northwest Territories (the latter not recorded for Northwest Territories in Costea
7656 & Tardif (2005)). There is a single record of subsp. *depressum* recorded from Arctic Quebec
7657 (Blondeau, 2015d). Our plants fit subsp. *buxiforme* in most characteristics, but do not have outer
7658 tepals pouched at the base, a characteristic of this taxon. Subspecies *buxiforme* is thought to be of
7659 North American origin, i.e. native (Costea & Tardif, 2003). *Polygonum aviculare* was treated but
7660 not mapped or illustrated in Porsild & Cody (1980). Subspecies *buxiforme* is the northernmost
7661 infraspecific taxon in Canada, known from as far north as the Mackenzie Delta, Northwest
7662 Territories, and the nearest location to our Kugluktuk collection is from western Great Bear Lake
7663 (Costea & Tardif, 2005). If confirmed, this would be the first report of *P. aviculare* subsp.
7664 *buxiforme* for Nunavut.

7665 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: dry roadside in Kugluktuk and
7666 in wet ditch, 67°49'29.3"N, 115°5'25.3"W ± 3 m, 29 m, 26 July 2014, *Saarela*, *Sokoloff & Bull*
7667 *4391* (ALA, ALTA, CAN, UBC).

7668 ***Rumex arcticus*** Trautv., Fig. 69—Arctic dock | European (NE)–Asian (N)–amphi-Beringian

Recorded previously from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and Heart Lake. This is a fairly common species in the study area. In Nunavut this species reaches its eastern limit at Bathurst Inlet (Porsild & Cody, 1980) and along the Hood River (Gould & Walker, 1997). A more easterly collection recorded from Churchill requires confirmation (Mosyakin, 2005; Porsild & Cody, 1980). Elsewhere in the Canadian Arctic this species is recorded from Banks Island, Tuktut Nogait National Park and vicinity, and sites on the northwestern mainland (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 3* (CAN-43376); Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 12 July 1958, *R.D. Wood s.n.* (CAN-265577); Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 146* (DAO-186080 barcode 01-01000677365); W shore of Tundra Lake, ca. 4.3 km SE of Sandstone Rapids, Coppermine River, 67°25'39.2"N, 115°33'11.5"W ± 5 m, 252 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3440* (CAN, UBC); S of Fockler Creek, above small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 100 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3452* (ALA, ALTA, CAN); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3622* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3925* (CAN, MO, O); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine

River, 67°48'33.4"N, 115°12'38.8"W ± 25 m, 31 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4312* (CAN).

Primulaceae [2/4]

Androsace chamaejasme subsp. ***andersonii*** (Hultén) Hultén, Fig. S41—Rock jasmine | Asian (N/C)–amphi-Beringian–North American (NW)

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We collected the taxon only along Richardson Bay. The species is at its eastern limit on mainland Nunavut in the study area. Elsewhere in the Canadian Arctic it is recorded from Banks and Victoria islands and mainland sites west of the study area (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Elven et al. (2011). Most authors have recognized the taxon as subsp. *lehmanniana* (Spreng.) Hultén (Hultén, 1968; Kelso, 2009). Application of the name *lehmanniana* is problematic because the type specimen, from the Caucasus and housed at B, was destroyed. Elven et al. (2011) argued that the information in the protologue is insufficient to be certain the Caucasus plants are the same race as the Arctic ones, and thus applied the name *andersonii* (type from Alaska). However, the name *lehmanniana* may ultimately prove to be the correct one at subspecific rank for this taxon (Elven et al., 2011). The other northern subspecies, subsp. *capitata* (Willd. ex Roem. & Schult.) Korobkov, is restricted to the Russian Far East (Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 29 June 1958, *R.D. Wood s.n.* (CAN-265489); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of

Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull* 3679 (CAN, UBC).

Androsace septentrionalis L.—Northern fairy-candelabra | Circumboreal-polar

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Kugluktuk, Fockler Creek, near Heart Lake cemetery and on an island at the mouth of the Coppermine River. Elsewhere in the Canadian Arctic it is recorded from Axel Heiberg, (northern) Baffin, Banks, Ellesmere, King William, Melville, Southampton and Victoria islands and some mainland sites to western Hudson Bay (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Numerous infraspecific taxa have been recognized in this widespread species, but none are recognized in recent treatments (Elven et al., 2011; Kelso, 2009).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17183* (CAN-128061); above Coppermine River, 03 July 1958, *R.D. Wood s.n.* (CAN-265487); Kugluktuk, disturbed rocky/gravelly ground around house, top of NW-facing gravel slope, just SE of Igalik Building, 67°49'29.6"N, 115°6'31"W ± 10 m, 13 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3095* (CAN, UBC); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3274* (CAN); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'21.4"N, 115°38'54"W ± 5 m, 140 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3358* (CAN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N,

115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3711* (ALA, CAN); gravel roadside SW of Kugluktuk, S side of road to Heart Lake cemetery, just beyond sewage retention pond, 5.59 km SW of mouth of Coppermine River, 67°48'39"N, 115°12'38.7"W ± 25 m, 46 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4320* (CAN).

Primula egaliksensis Wormsk., Fig. S42—Greenland primrose | Amphi-Beringian–North American (N)–amphi-Atlantic

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). Our five collections, from Fockler Creek and Kugluk (Bloody Falls) Territorial Park and vicinity, fill in a short distributional gap along the Coppermine River between Kugluktuk and Great Bear Lake, where collections have been made previously (Porsild & Cody, 1980). Kelso (1991) reported the habitat for this species as damp silt along stream banks. Indeed, four of the five populations we encountered occurred along the banks of the Coppermine River or its tributaries; the fifth was found on the banks of a small pond adjacent to the Coppermine River. Elsewhere in the Canadian Arctic this species is known from mainland Northwest Territories, Nunavut and northern Quebec (Cody et al., 1984; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). This species may be mistaken for the superficially similar *P. stricta*, which also occurs in the western Canadian Arctic (Gillespie et al. 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 13 July 1951, *W.I. Findlay 118* (DAO-178772 barcode 000457230); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 110* (DAO-178474 barcode 000457229); Coppermine [Kugluktuk], along small stream flowing into Coppermine River, [67°49’36”N, 115°5’36”W ± 1.5 km], 10 July 1958, *R.D. Wood s.n.* (CAN-

265486); sedge meadow at S end of small lake, on flats NW of Fockler Creek, ca. 1.9 km SSE of Sandstone Rapids, Coppermine River, 67°26'1.8"N, 115°37'30.5"W ± 20 m, 170 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3234* (CAN); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3254* (CAN); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3394* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3865* (ALA, CAN); wet seepy area above start of Bloody Falls, SE side of Coppermine River, 67°44'17.1"N, 115°22'31"W ± 20 m, 67 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4225* (ALTA, CAN).

Primula stricta Wormsk.—Coastal primrose, Strict primrose | North American (N)–amphi-Atlantic–European (N)

Recorded previously for the study area (Porsild & Cody, 1980) but we were unable to locate a voucher specimen for confirmation. We collected the species only once, on an unnamed island at the mouth of the Coppermine River. This species is primarily found in coastal areas (where we encountered it) but sometimes occurs inland along rivers (Kelso, 1991). Elsewhere in the Canadian Arctic this species is known from Banks and Victoria islands, mainland Northwest Territories, a few mainland Nunavut sites and northern Quebec (Aiken et al., 2007; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River, 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3716* (CAN, UBC).

Ranunculaceae [5/11]

Anemone parviflora Michx., Fig. S43A, B —Northern white anemone, large-flowered anemone | Amphi-Beringian (E)–North American (N)

Recorded previously from Kugluktuk (Cody, 1954b) but not mapped in Porsild & Cody (1980). We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this western species is recorded from Banks and Victoria islands and some adjacent mainland sites (Aiken et al., 2007; Blondeau, 2015e; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 7 June 1951, *W.I. Findlay 6* (ALTA-VP-8704, DAO-184189 barcode 01-01000619894); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3157* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3890* (ALA, ALTA, CAN, UBC).

Anemone richardsonii Hook., Fig. S43C, D —Yellow anemone, Richardson's anemone | Asian (NE)–amphi-Beringian–North American (N)

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections in Kugluktuk and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this yellow-flowered species is recorded from Banks Island and across the mainland (Aiken et al., 2007; Blondeau, 2015e; Cody & Reading, 2005; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 21* (DAO-184281 barcode 01-01000619895); Kugluktuk, damp tundra slope above Coppermine River, [67°49'36”N, 115°5'36”W], 14 June 2000, *L.K. Benjamin s.n.* (ACAD-ECS015893); Kugluktuk, NW-facing slope across road from coast, 67°49'41.2"N, 115°6'0.7"W ± 5 m, 1 m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3103* (CAN, UBC); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3155* (CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3833* (CAN); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4349* (CAN).

Caltha palustris subsp. ***radicans*** (T.F. Forst.) Syme, Fig. 70—Marsh marigold | European (N)–Asian (N)–amphi-Beringian–North American (NW)

Recorded previously from Kugluktuk as var. *arctica* (R. Br.) Huth. (Cody, 1954b; Porsild & Cody, 1980), a heterotypic synonym of subsp. *radicans* (Elven et al., 2011). Ford (1997) did not recognize infraspecific taxa, while Elven et al. (2011) recognized subsp. *radicans* as the main

Arctic race of *Caltha palustris* L.; we follow this treatment. We made two collections and the species was never abundant where we found it. At one site, plants grew along the edges of a small pond near the airport terminal in Kugluktuk, and at the other, plants grew in a marshy area along a creek in Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from a few sites on mainland Nunavut, on Banks, King William, Melville and Victoria islands, and some mainland Northwest Territory sites (Aiken et al., 2007; Cody, 1996a; Cody & Reading, 2005; Cody et al., 2003; Gould & Walker, 1997; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], between R.C. Mission and DOT, [67.826667°N, 115.09333°W ± 1.5 km], 01 July 1958, *R.D. Wood s.n.* (CAN-265556); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 112* (ACAD-30932, ALTA-VP-8815, DAO-183976 barcode 01-01000616658); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 28 June 1951, *W.I. Findlay 45* (DAO-183977 barcode 01-01000616659); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 254* (DAO-184499 barcode 01-01000616602); Kugluktuk, across Coronation Street from coast, 67°49'42"N, 115°6'6.6"W ± 2 m, 1m, 30 June 2014, *Saarela*, *Sokoloff & Bull 3104* (ALA, CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, head of small unnamed pond just W of falls, 67°44'42.8"N, 115°22'29.2"W ± 10 m, 9 m, 13 July 2014, *Saarela*, *Sokoloff & Bull* 3901 (ALTA, CAN, O); flats below large overhanging cliffs above Coppermine River, just S of Kugluktuk, 67°48'56.7"N, 115°6'22.6"W ± 10 m, 2 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4407* (CAN, US).

Coptidium pallasii (Schlect.) Tzvelev—Pallas' buttercup | European (N)–Asian (N)–amphi-Beringian–North American (N)

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980) and noted to be rare there by Cody (1954b). We did not encounter this conspicuous emergent aquatic species in 2014. Elsewhere on mainland Nunavut it is known from several sites (Cody, 1996a; Cody et al., 2003; Korol, 1992; Savile & Calder, 1952), and elsewhere in the Canadian Arctic it is known from southern Baffin Island, northern Quebec and Labrador, and some northwestern Northwest Territory sites (Aiken et al., 2007; Blondeau, 2015e; Cody, 1996a; Porsild & Cody, 1980; Saarela et al., 2013a). The species was previously recognized as *Ranunculus pallasii* Schlect.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 254* (DAO-184499 barcode 01-01000616602).

Halerpestes cymbalaria (Pursh) Greene, Fig. 71—Northern seaside buttercup | Asian (N/C) & North American

Recorded previously for the study area (Cody, 1954b; Porsild & Cody, 1980) but we were unable to locate a voucher specimen for confirmation. We made collections at Richardson Bay, Bloody Falls (outside the park boundary), and near Heart Lake cemetery. Previously treated as *Ranunculus cymbalaria* Pursh (Porsild & Cody, 1980; Whittemore, 1997), molecular evidence strongly supports recognition of this taxon in the separate genus *Halerpestes* Greene (Emadzade et al., 2010; Hörandl et al., 2005; Paun et al., 2005). On mainland Nunavut this species is recorded from Bathurst Inlet and a site to the west (Bennett, 2015; Porsild & Cody, 1980; Whittemore, 1997), Rankin Inlet (Korol, 1992), and Chesterfield Inlet (Cody, 1996a). Elsewhere

in the Canadian Arctic, it is known from northwestern Victoria Island, Tuktut Nogait National Park and vicinity, other Northwest Territory sites, and a few sites in northern Quebec and Labrador (Aiken et al., 2007; Blondeau, 2015e; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3669* (ALA, ALTA, CAN, O); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4220* (CAN); gravel roadside SW of Kugluktuk, S side of road to Heart Lake cemetery, just beyond sewage retention pond, 5.59 km SW of mouth of Coppermine River, 67°48'39"N, 115°12'38.7"W ± 25 m, 46 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4325* (CAN, UBC).

Ranunculus arcticus Richardson, Fig. S44—Birdfoot buttercup | Circumpolar–alpine

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Coppermine Mountains, Expeditor Cove and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Coats, Ellesmere, Melville, Southampton and Victoria islands, and across the mainland (Aiken et al., 2007; Blondeau, 2015e; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). This taxon was treated as *R. pedatifidus* var. *affinis* (R.B.) L.D. Benson by Whittemore (1997, who did not consider the name *R. arcticus*) and *R. pedatifidus* var. *leiocarpus* (Trautv.) Fern. by Cody (1954b). Elven et al. (2011) argued that *R. arcticus* is distinct from the Central Asian *R. pedatifidus* Sm.; we follow this taxonomy here.

7884 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
7885 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 85* (DAO-138206 barcode 01-
7886 01000620026); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 23 June 1951, *W.I. Findlay*
7887 *32* (ALTA-VP-9117, DAO-138208 barcode 01-01000620025); Coronation Gulf, NW peninsula
7888 of Expeditor Cove, ca. 9.5 km NW of Kugluktuk, 67°52'40.4"N, 115°16'38.3"W ± 10 m, 15 m,
7889 08 July 2014, *Saarela*, *Sokoloff & Bull 3706* (CAN, UBC); flats atop and upper slopes of
7890 Coppermine Mountains, N/W side of Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m,
7891 422 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3750* (ALA, CAN); Kugluk (Bloody Falls)
7892 Territorial Park, W side of Coppermine River, along ATV trail below slope of sand hill just
7893 below picnic bench/lookout area, 67°44'41.5"N, 115°22'14.9"W ± 15 m, 15 m, 17 July 2014,
7894 *Saarela*, *Sokoloff & Bull 4153* (ALTA, CAN).

7895 ***Ranunculus confervoides*** (Fr.) Fr.—Thread-leaved water buttercup | Amphi-Atlantic–European–
7896 Asian (N)–amphi-Beringian | Noteworthy Record

7897 This taxon is widespread in the Canadian Arctic but has not previously been recorded for the
7898 study area. Our collections represent a minor range extension from a site west of the study area
7899 (67°32'50"N 116°13'00", *Reading 75*, DAO) (Cody & Reading, 2005). Elsewhere in the
7900 Canadian Arctic this taxon is recorded from Baffin, Eglinton, Southampton and Victoria islands,
7901 and several sites across the mainland (Aiken et al., 2007; Blondeau, 2015e; Porsild & Cody,
7902 1980). The water crowfoots (*Ranunculus* subgenus *Batrachium* (D.C.) A. Gray) are a
7903 taxonomically complex group of plants that have been variously treated taxonomically (reviewed
7904 in Elven et al. 2011; general discussion for the group is [erroneously] listed on the page for
7905 *Ranunculus hyperboreus* subsp. *tricrenatus* (Rupr.) Á. Löve & D. Löve, accessed 8 April 2015).
7906 Taxonomy here for this group follows Elven et al. (2011). In other floras, the taxon is treated as

7907 *Ranunculus aquatilis* var. *eradicatus* Laest. (Porsild & Cody, 1980) or *R. aquatilis* var. *diffusus*
7908 Withering (Aiken et al., 2007; Whittemore, 1997), the latter name treated as a synonym of *R.*
7909 *trichophyllus* Chaix in Elven et al. (2011). *Ranunculus confervoides* can be difficult to
7910 distinguish from *R. subrigidus* W.B. Drew (treated as *R. aquatilis* var. *subrigidus* (W.B. Drew)
7911 Breitung in Porsild & Cody (1980), and Whittemore (1997) treated them as a single taxon, *R.*
7912 *aquatilis* var. *diffusus*; the two differ primarily in the stiffness of their leaves (Porsild and Cody
7913 1980).

7914 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls)
7915 Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of
7916 Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull*
7917 *4166* (ALA, ALTA, CAN, UBC).

7918 ***Ranunculus gmelinii*** DC**.** subsp. ***gmelinii***, Fig. 72A**—**Gmelin's buttercup | European (NE)–
7919 Asian (N/C)–amphi-Beringian–North American (NW)

7920 Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made
7921 collections of this white-flowered, aquatic buttercup at Expeditor Cove, on an island at the mouth
7922 of the Coppermine River and in Kugluktuk. Elsewhere in the Canadian Arctic this taxon is
7923 recorded from Banks, Prince Patrick, Melville and Victoria islands and scattered sites across the
7924 mainland (Aiken et al., 2007; Blondeau, 2015e; Cody, 1996a; Korol, 1992; Porsild & Cody,
7925 1980; Saarela et al., 2013a). Taxonomy follows Elven et al. (2011). The other infraspecific
7926 taxon, subsp. *purshii* (Richardson) Hultén, was recognized as a species (*R. purshii* Richardson)
7927 by Porsild & Cody (1980) and as a synonym of *R. gmelinii* by Whittemore (1997); it is not

7928 known from the study area. *Ranunculus gmelinii* and *R. hyperboreus* are known to hybridize
7929 (Cayouette et al., 1997).

7930 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
7931 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 255A* (DAO-184406 barcode 01-
7932 01000620033); Coronation Gulf, NW peninsula of Expeditor Cove, ca. 9.6 km NW of
7933 Kugluktuk, 67°52'47.2"N, 115°16'40.3"W ± 3 m, 17 m, 08 July 2014, *Saarela*, *Sokoloff & Bull*
7934 *3697* (CAN); unnamed island just E (ca. 3.3 km) of Kugluktuk at mouth of Coppermine River,
7935 67°49'29.2"N, 115°1'3.2"W ± 50 m, 1 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3718* (CAN);
7936 flats below large overhanging cliffs above Coppermine River, just S of Kugluktuk,
7937 67°48'56.7"N, 115°6'22.6"W ± 10 m, 2 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4406* (ALA,
7938 CAN, UBC).

7939 ***Ranunculus hyperboreus*** Rottb. subsp. ***hyperboreus***, Fig. 72B, C—Far-northern buttercup |
7940 Circumpolar-alpine

7941 This widespread Arctic species was previously recorded from the study area (Porsild & Cody,
7942 1980) but we were unable to locate a voucher specimen for confirmation. We made collections at
7943 Expeditor Cove and Kugluktuk. This species is widespread throughout the Canadian Arctic
7944 (Aiken et al., 2007; Blondeau, 2015e; Cody et al., 1984; Cody et al., 1989; Korol, 1992; Porsild
7945 & Cody, 1980; Saarela et al., 2013a). In the Panarctic flora Elven et al. (2011) recognize three
7946 subspecies, of which only subsp. *hyperboreus* is recorded for Canada.

7947 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coronation Gulf, NW
7948 peninsula of Expeditor Cove, ca. 9.8 km NW of Kugluktuk, 67°52'44.7"N, 115°16'58.4"W ± 5
7949 m, 18 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3696* (CAN); W of Kugluktuk on tundra flats

7950 above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N,
7951 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4364* (CAN).

7952 ***Ranunculus nivalis*** L. —Snow buttercup | Circumpolar

7953 Previously recorded from the study area (Porsild & Cody, 1980) but we were unable to locate a
7954 voucher specimen for confirmation. We made collections only at Fockler Creek. Although
7955 uncommon in the study area, this species is widespread throughout the Canadian Arctic (Aiken
7956 et al., 2007; Blondeau, 2015e; Cody et al., 2003; Porsild & Cody, 1980; Saarela et al., 2013a).

7957 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats on W side of Fockler
7958 Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River,
7959 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3137* (CAN,
7960 UBC); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids,
7961 Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff*
7962 *& Bull 3294* (ALA, CAN).

7963 ***Ranunculus pygmaeus*** Wahlenb.—Pygmy buttercup | Circumpolar–alpine

7964 This taxon has been recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made
7965 two collections in the vicinity of Fockler Creek. Both of our collections are further inland than
7966 indicated on the range map in Whittemore (1997) for the vicinity of the study area. This species
7967 is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015e; Cody et al.,
7968 2003; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a).

7969 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
7970 67°49'36"N, 115°5'36"W, 22 July 1951, *W.I. Findlay 167* (DAO-184514 barcode 01-

01000620035); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3136* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3293* (CAN, UBC).

Rosaceae [5/14]

Comarum palustre L.—Marsh cinquefoil | Circumboreal–polar | Noteworthy Record

This circumboreal taxon (syn. *Potentilla palustris* (L.) Scop.) has not previously been recorded for the study area. Our collections close a distribution gap between Bathurst Inlet, Hood River, Great Bear Lake, and Tuktut Nogait National Park and vicinity (Gould & Walker, 1997; Porsild & Cody, 1980; Saarela et al., 2013a). We made three collections of this prostrate shrub in the northern portion of the study area. It was growing in wet hummocky tundra around small ponds near Heart Lake with *Andromeda polifolia*, *Betula glandulosa*, *Carex membranacea* and *Rubus chamaemorus*; along the lower banks of a small stream running into Coronation Gulf; and along the edge of a wet sedge meadow with *Carex aquatilis* subsp. *stans* and *Caltha palustris* subsp. *radicans* near Kugluktuk. Taxonomy here follows Elven et al. (2011) and Ertter & Reveal (2014a). This species occurs across most of the Nunavut mainland (Bennett, 2015; Cody & Reading, 2005; Cody et al., 1989; Gussow, 1933; Korol, 1992; Porsild, 1950b; Porsild & Cody, 1980) and is recorded from Arctic sites in Northwest Territories and across northern Quebec and Labrador (Bailleul, 2015; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ±

350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4286* (CAN); sandy beach along Coronation Gulf, 3.9 km W of mouth of Coppermine River, 67°49'37.8"N, 115°10'31.8"W ± 50 m, 9 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4338* (CAN); wetland at edge of extensive sandy floodplain of Coppermine River, below steep cliff above river and S of Kugluktuk, 67°48'56.9"N, 115°6'17"W ± 3 m, 2 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4411* (CAN, UBC).

Dasiphora fruticosa (L.) Rydb., Fig. 73—Shrubby cinquefoil | Disjunct circumboreal

Recorded previously from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). The species was noted as occurring "on the Coppermine River near the sea" by Richardson (1851). We made collections at Fockler Creek, Melville Creek, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This shrub species is common along the Coppermine River valley, extending as far north as the Arctic coast. On mainland Nunavut the taxon extends as far east as Bathurst Inlet (Porsild & Cody, 1980) and Hood River (Gould & Walker, 1997), and it is recorded across Arctic mainland Northwest Territories (Porsild & Cody, 1980; Saarela et al., 2013a). It is not known from the Canadian Arctic Archipelago. This circumboreal and variable shrub species (syn. *Potentilla fruticosa* L.) has been variously treated as one or more taxa (Klackenberg, 1983). Authors have recognized North American plants as a species, *D. floribunda* Pursh, distinct from the Old World *D. fruticosa* s.s. (Klackenberg, 1983); as a subspecies, *D. fruticosa* subsp. *floribunda* (Pursh) Kartesz (Cody, 2000; Elven et al., 2011); or as a single polymorphic species without further division, *D. fruticosa* (Ertter & Reveal, 2014b). We follow the latter treatment here.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 133* (DAO-182684 barcode 01-01000619638);

8015 Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 30 July 1951, *W.I. Findlay 213* (DAO-
8016 182683 barcode 01-01000619639); Kugluktuk, 67.821267°N, 115.08535°W, 22 July 2006, *J.*
8017 *Davis 636* (CAN-597639); Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N,
8018 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 12* (CAN-71502); Coppermine [Kugluktuk],
8019 Coronation Gulf, at mouth of Coppermine River, back of the village, [67.822146°N,
8020 115.078387°W ± 0.5 km], 04 August 1948, *H.T. Shacklette 3333* (CAN-200225); Coppermine
8021 [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 00 January 1900, *R.D. Wood s.n.* (CAN-
8022 265510); Coppermine [Kugluktuk], vic. of hamlet and airstrip, 67.78°N, 115.5°W ± 3615 m, 23
8023 June 1999, *C.L. Parker & I. Jonsdottir 9099* (ALA, as *Pentaphylloides floribunda* (Pursh) Á.
8024 Löve, not seen); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km
8025 S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July
8026 2014, *Saarela*, *Sokoloff & Bull 3123* (CAN, UBC); confluence of Coppermine River and
8027 Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-
8028 190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3492* (ALA, CAN); Kugluk (Bloody Falls)
8029 Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily
8030 used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*,
8031 *Sokoloff & Bull 3817* (ALTA, CAN); W of Kugluktuk on tundra flats above Coppermine River,
8032 S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25
8033 July 2014, *Saarela*, *Sokoloff & Bull 4383* (CAN, O).

8034 ***Dryas integrifolia*** subsp. ***integrifolia***, Fig. S45—Mountain avens | Amphi-Beringian–North
8035 American (N)

8036 Recorded previously from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980).
8037 We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This species

8038 is widespread across the Canadian Arctic (Aiken et al., 2007; Bailleul, 2015; Cody et al., 1989;
8039 Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy here follows Elven et al.
8040 (2011) and Springer & Parfitt (2014), who recognize two subspecies in *D. integrifolia* Vahl.
8041 There is a collection of the other subspecies, the northwestern North American taxon *D.*
8042 *integrifolia* subsp. *sylvatica* (Hultén) Hultén, mapped in the study area in Porsild & Cody (1980).
8043 We were unable to locate a voucher specimen and we do not accept this record pending
8044 confirmation.

8045 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls on Coppermine
8046 River, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 140* (DAO-183098 barcode 01-
8047 01000619641); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 June 1951, *W.I. Findlay*
8048 *36* (DAO-183108 barcode 01-01000619642); Kugluktuk, upper tundra slope overlooking
8049 Coppermine River, [67°49'36”N, 115°5'36”W], 14 June 2000, *L.K. Benjamin s.n.* (ACAD-
8050 ECS015867); Kugluktuk, overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 16 July
8051 2000, *L.K. Benjamin s.n.* (ACAD-ECS015868); Kugluktuk, rocky slopes of North Hill,
8052 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3062* (ALA,
8053 ALTA, CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine
8054 River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull*
8055 *3181* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly
8056 above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N,
8057 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3832* (CAN).

8058 ***Potentilla anserina*** subsp. ***groenlandica*** Tratt.—Greenland silverweed | Amphi-Beringian–
8059 North American (N)–amphi-Atlantic–European (N) | Noteworthy Record

8060 This halophytic coastal taxon has not previously been recorded from the study area, and our
8061 collection from Richardson Bay fills a gap between sites at Paulatuk and the Lower Brock River
8062 lagoon to the west (Saarela et al., 2013a) and Bathurst Inlet (Bennett, 2015; Porsild & Cody,
8063 1980) to the east. Elsewhere in the Canadian Arctic it is recorded from Baffin and Victoria
8064 islands, the Mackenzie Delta area, along the western shore of Hudson Bay and numerous sites in
8065 northern Quebec and Labrador (Aiken et al., 2007; Bailleul, 2015; Korol, 1992; Porsild & Cody,
8066 1980; Saarela et al., 2013a). It is treated as *P. egedii* Wormsk. in Porsild & Cody (1980), a
8067 heterotypic synonym of the currently accepted name. Taxonomy follows Elven et al. (2011) and
8068 Elven & Murray (2014).

8069 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of
8070 Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N,
8071 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3665* (CAN, UBC).

8072 ***Potentilla arenosa*** (Turcz.) Juz. subsp. ***arenosa***—Bluff cinquefoil | Asian (N/C)–amphi-
8073 Beringian–North American (N) | Noteworthy Record

8074 Newly recorded for the study area. We made collections at Fockler Creek and Kugluk (Bloody
8075 Falls) Territorial Park. The species was first collected in the study area in 1949 but the specimen
8076 from Kugluktuk (*Porsild 17181*) was determined by Porsild as *P. nivea* subsp. *chamissonis*
8077 (Hultén) Hiitonen, and mapped under that name in Porsild & Cody (1980). This specimen has
8078 been re-determined to *P.* arenosa subsp. arenosa (det. R. Elven, stet! J.M. Saarela). *Findlay 86* is
8079 a mixed sheet of this species and *P. nivea*. Elsewhere in the Canadian Arctic this taxon is
8080 recorded from Axel Heiberg, Banks, Devon, Melville and Victoria islands, and mainland sites
8081 west of the study area (a western Hudson Bay record in Porsild and Cody 1980 needs

8082 confirmation) (Aiken et al., 2007; Porsild & Cody, 1980; Saarela et al., 2013a). The taxon is at
8083 the edge of its range in the study area. Taxonomy here follows Elven et al. (2014c). *Potentilla*
8084 *nivea* subsp. *chamissonis* is a synonym of *P. arenosa* subsp. *chamissonis* (Hultén) Even & D.F.
8085 Murray.

8086 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
8087 vicinity of post, [67°49'36"N, 115°5'36"W ± 1.5 km], 26 July 1949, *A.E. Porsild 17181* (CAN-
8088 127962); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 86*
8089 (DAO-182828); old riverbed of Fockler Creek, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01
8090 July 2014, *Saarela*, *Sokoloff & Bull 3147b* (CAN); second ridge N of Fockler Creek, ca. 1.9 km
8091 SSE of Sandstone Rapids, Coppermine River, 67°26'2.4"N, 115°37'26.5"W ± 25 m, 187 m, 02
8092 July 2014, *Saarela*, *Sokoloff & Bull 3211* (CAN, UBC); E side of Fockler Creek, in valley just
8093 above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids,
8094 67°26'21.4"N, 115°38'54"W ± 5 m, 140 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3359b*
8095 (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs
8096 above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N,
8097 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3940a* (ALA, CAN); S-
8098 SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N,
8099 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4210* (CAN, O).

8100 ***Potentilla arenosa*** subsp. ***chamissonis*** (Hultén) Elven & D.F. Murray—Chamisso's cinquefoil |
8101 North American (NE)–amphi-Atlantic–European (N)–Asian (NW)

8102 A collection of this taxon from the Kugluktuk area was determined and mapped (Porsild &
8103 Cody, 1980) under the name *P. nivea* subsp. *chamissonis*, now a synonym of this taxon (Elven et

al., 2014c). We did not collect this taxon in 2014. Elsewhere in the Canadian Arctic it is recorded from Baffin, Banks, Devon, Ellesmere, King William, Southampton and Victoria islands, and mainland sites (Aiken et al., 2007; Bailleul, 2015; Cody et al., 1984; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk] Dist., 01 August 1940, *L. Ross 17* (CAN-531002).

Potentilla arenosa subsp. ***chamissonis*** × ***Potentilla nivea*****—**Noteworthy Record

Plants with a combination of floccose and straight hairs on petioles are considered hybrids of *P. arenosa* subsp. *chamissonis* and *P. nivea*. These hybrid plants are newly recorded for the study area. We made collections at Fockler Creek and Kugluktuk. The name *P.* ×*prostrata* Rottb., based on plants from Greenland, has been used for such hybrids (Bailleul, 2015; Elven et al., 2011; Léveillé-Bourret et al., 2014; Soják, 1989). Elven et al. (2014c) did not include this hybrid in their key, as they did not consider it to be stabilized as a recognizable taxon. In their treatment, these collections key to *P. nivea*. Their circumscription of *P. nivea* considers it to be a species with "long hairs…sometimes sparse to common (less so than cottony hairs)". In all of the specimens determined here as putative hybrids, long hairs are less common than cottony ones.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3043a* (CAN, UBC); spruce forest along Fockler Creek, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3195a* (CAN); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'21.4"N, 115°38'54"W ± 5 m, 140 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3359a* (CAN); W shore of Tundra Lake, ca. 4.3 km SE of Sandstone Rapids, Coppermine River,

67°25'43.7"N, 115°33'6.8"W ± 4 m, 262 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3442a* (CAN, O).

Potentilla biflora Willd. ex Schltdl., Fig. 74A—Two-flower cinquefoil | Asian (C) & amphi-Beringian | Noteworthy Record

Our Subarctic collections from Fockler Creek and Big Creek are the first records of this species for the study area. This Amphi-Beringian species was previously known on the mainland as far east as Tuktut Nogait National Park and vicinity, including a site in Nunavut located just east of the territorial border (Cody et al., 1992; Porsild & Cody, 1980; Saarela et al., 2013a). A previously unpublished collection extends the range to the Burnside River, southwest of Bathurst Inlet (Nunavut: Kitikmeot Region: Burnside River Ridge above Burnside River downstream from Kathawachaga Lake, near Nadlok Island, 66°16'N, 110°14'W, 13 July 1986, M.E. *Gordon s.n.*, CAN 523650!). Four collections were recently reported from the Coppermine River but outside the study area (Reading 525, s.n. 2, 523 - DAO; Cody & Reading, 2005). A collection mapped from the Cambridge Bay area on Victoria Island (McJannet et al., 1993; Porsild & Cody, 1980) and noted in subsequent publications (Cody & Reading, 2005; Elven et al., 2014b) is a mapping error (Aiken et al., 2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3152* (CAN, UBC); S of Fockler Creek, above small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 100 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3456* (CAN, O); forest and slopes at confluence of Big Creek and Coppermine River, N side of

Coppermine River, S side of Coppermine Mountains, 67°14'29.3"N, 116°2'44.5"W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3542* (ALA, CAN).

Potentilla hyparctica Malte subsp. ***hyparctica***, Fig. 74B—Arctic cinquefoil | Circumpolar | Noteworthy Record

Our two Subarctic collections of this species from Fockler Creek are the first records of this taxon for the study area and represent a southern range extension. At one site the plants were gathered in a meadow (old riverbed) below a north-facing slope on edge of dense birch thicket adjacent to the spruce forest along Fockler Creek, growing with *Castilleja caudata*, *Chamerion latifolium*, *Dasiphora fruticosa*, *Hedysarum americanum* and *Papaver hultenii*. The other site was a nearby snowbed habitat, where the taxon grew with *Anemone parviflora*, *Arctous rubra*, *Carex podocarpa*, *Cassiope tetragona* subsp. *tetragona*, *Dasiphora fruticosa* and *Salix reticulata*. These collections fall more or less in the middle of the large gap in the species' distribution between the Adelaide Peninsula and northern Yukon. It is primarily distributed throughout the high Arctic islands (Aiken et al., 2007) and is also recorded from a small area in northern Quebec (Bailleul, 2015). Both of our collections are from Subarctic locations, an ecozone in which this subspecies has apparently not been recorded previously. Two subspecies of *P. hyparctica* are recognized in Canada: the nominal subspecies with a northern high Arctic distribution and subsp. *elatior* (Abrom.) Elven & D.F. Murray with a southern low Arctic distribution (Elven et al., 2014a; Murray & Elven, 2007). Aiken et al. (2007) mapped the infraspecific taxa as "northern race" and "southern race", with the southern race documented on the mainland of Nunavut from the Adelaide Peninsula and eastwards. A collection identified as *P. hyparctica* s.l. and recently reported from the Big Bend area of the Coppermine River (Reading 16, DAO - Cody et al., 2003), outside the study area, is subsp. *elatior*. Subspecies

elatior is also recorded to the west, from Yukon (Elven et al., 2014a; Elven et al., 2011) and Tuktut Nogait National Park (Saarela et al., 2013a); other adjacent records (e.g., Bathurst Inlet, eastern Great Bear Lake) are mapped in Aiken et al. (2007).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3178* (CAN, UBC); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3296* (CAN).

Potentilla nivea L.—Snow cinquefoil | Circumpolar-alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Fockler Creek, Expeditor Cove, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. Elsewhere in the Canadian Arctic this species is recorded from Baffin and Southampton islands and across the mainland (Aiken et al., 2007; Bailleul, 2015; Cody & Reading, 2005; Cody et al., 2003; Porsild & Cody, 1980). Taxonomy follows Elven et al. (2014c), which seems to match the circumscription of *P. nivea* subsp. *nivea* in Porsild and Cody (1980). *Findlay 86* is a mixed sheet of this species and *P. arenosa* subsp. *arenosa.*

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: bluff west of Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 07 July 1955, *R.E. Miller 25* (CAN-241991); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 July 1951, *W.I. Findlay 86* (DAO-182828); old riverbed of Fockler Creek, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3147a* (CAN); W shore of Tundra Lake, ca. 4.3 km SE of Sandstone

Rapids, Coppermine River, 67°25'43.7"N, 115°33'6.8"W ± 4 m, 262 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3442b* (ALA, ALTA, CAN); Coronation Gulf, NW peninsula of Expeditor Cove, ca. 9.5 km NW of Kugluktuk, 67°52'39.5"N, 115°16'43.8"W ± 5 m, 14 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3704* (CAN, UBC); Coronation Gulf, NW peninsula of Expeditor Cove, ca. 9.5 km NW of Kugluktuk, 67°52'39.5"N, 115°16'43.8"W ± 5 m, 14 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3705* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3940b* (CAN, MO, O); rocky cliffs on S side of Kugluktuk, 67°49'13"N, 115°5'55.8"W ± 50 m, 65 m, 26 July 2014, *Saarela*, *Sokoloff & Bull 4403* (CAN, O).

Potentilla pulchella R. Br.—Pretty cinquefoil, branching cinquefoil | Circumpolar | Noteworthy Record

This often-coastal species is newly recorded for the study area. We made a single collection near the seashore along Richardson Bay. Elsewhere on mainland Nunavut it is known from the Boothia and Melville Peninsulas, the west coast of Hudson Bay and a site just east of the study area (Porsild & Cody, 1980). To the west the species is recorded from the Paulatuk and the Brock Lagoon (Saarela et al., 2013a) and other mainland sites (Porsild & Cody, 1980). It is also recorded from northern Quebec (Bailleul, 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3691* (CAN).

Potentilla tikhomirovii Juz.—Tikhomirov's cinquefoil | Circumpolar? | Noteworthy Record

This species is newly recorded for the study area, but was first collected in the area in 1951. The collection *Findlay 12*, gathered in Kugluktuk, was identified as *P. hookeriana* Lehm. in Cody (1954b); the sheet is here re-determined as *P.* ***tikhomirovii***. A nearby collection (*Findlay* 183, DAO) from the mouth of the Nikpartoktuak River (just outside the study area) is also a mixed sheet, including this species and *P. arenosa* subsp. *arenosa*. We made collections at Fockler Creek, Kugluktuk and Kugluk (Bloody Falls) Territorial Park. Taxonomy follows Elven et al. (2011) and Elven et al. (2014c). This taxon is thought to be a hybrid of *P. arenosa* subsp. *arenosa* and *P. hyparctica*, and may have multiple origins (Elven et al., 2014c). This name has not previously been used in the North American literature, and thus its Arctic distribution is unclear at present, pending revision of herbarium material.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 14 June 1951, *W.I. Findlay 12* (DAO-182827 barcode 01-01000562765); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3043b* (CAN); Kugluktuk, along Coronation Street roadside, 67°49'42"N, 115°6'6"W ± 50 m, 1 m, 30 June 2014, *Saarela, Sokoloff & Bull 3105* (CAN, UBC); spruce forest along Fockler Creek, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3195b* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3893* (ALA, ALTA, CAN, O); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela*, *Sokoloff & Bull 4165* (CAN); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014,

Saarela, *Sokoloff & Bull 4355* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4386* (CAN, O).

Rubus arcticus subsp. ***acaulis*** (Michx.) Focke, Fig. 75—Stemless raspberry | Amphi-Beringian (E)?–North American (N) | Noteworthy Record

This species is newly recorded for the study area, and our collections represent a northeastern range extension from the nearest known sites along eastern Great Bear Lake (Porsild & Cody, 1980). We found this species growing at four sites. It grew in small patches throughout the spruce forest along Fockler Creek, with *Betula glandulosa*, *Juniperus communis* subsp. *depressa*, *Lupinus arcticus*, *Pyrola grandiflora*, *Shepherdia canadensis* and *Vaccinium vitis-idaea*. Along nearby Sleigh Creek it was locally common in the understory of a dense willow forest (*Salix alaxensis*), growing with *Carex podocarpa*, *Chamerion angustifolium* and *Dasiphora fruticosa*. We encountered one fairly large population in Kugluk (Bloody Falls) Territorial Park, the first Arctic record of this species for Nunavut. In the Park the plants grew in a fairly dense willow thicket with *Arctous rubra*, *Betula glandulosa*, *Empetrum nigrum* and *Senecio lugens*. Elsewhere in Nunavut the taxon is recorded from the southeast mainland (Cody & Reading, 2005; Cody et al., 2003; Porsild, 1950b; Porsild & Cody, 1980) and Akimiski Island (Blaney & Kotanen, 2001). The taxon is distributed across boreal North America and reaches the Arctic in the Mackenzie Delta area, Northwest Territories, northern Yukon and northern Quebec and Labrador (Bailleul, 2015; Porsild & Cody, 1980). This taxon has been variously recognized as a species, *R. acaulis* Michx. (Elven et al., 2011; Porsild & Cody, 1980), or a subspecies (Alice et al., 2014; Cody, 2000); we follow the latter approach here.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3190* (CAN, UBC); Sleigh Creek, just downstream (W) of Tundra Lake, ca. 3.7 km SE of Sandstone Rapids, Coppermine River, 67°26'2.2"N, 115°33'42.9"W ± 25 m, 229 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3447* (ALA, CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3511* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4030* (CAN, O).

Rubus chamaemorus L.—Cloudberry, bakeapple | Circumboreal–polar

Recorded previously from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and near Heart Lake. Elsewhere in the Arctic this species is recorded from Baffin, Coats, King William, Southampton and Victoria islands and across the mainland (Aiken et al., 2007; Bailleul, 2015; Bennett, 2015; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 17 July 1951, *W.I. Findlay 128* (DAO-182420 barcode 01-01000619632); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 109* (DAO-182421 barcode 01-01000619633); Kugluktuk, 67.814333°N, 115.19845°W, 23 July 2006, *J. Davis 639* (CAN-597646); flats on W side of Fockler Creek, above spruce forest in

creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3134* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3836* (ALA, CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4281* (CAN).

Salicaceae [2/17

Populus balsamifera L., Fig. 76—Balsam poplar | Amphi-Beringian (E)–North American

The distribution of this species at its northern range is summarized by Saarela et al. (2012), who reported Arctic stands of the species in Tuktut Nogait National Park, Northwest Territories. In Nunavut, extralimital balsam poplar is known from a single collection made during the Canadian Arctic Expedition, 1913–18, in the study area (Johansen, 1924). A few small twigs from "trees … about ten feet [ca. 3 m] high" with "trunks [that] attained the thickness of a finger" growing in a deep gully just above Escape Rapid in the Coppermine River valley were collected by R.M. Anderson (*Anderson 756,* CAN) in winter (February 1916) when "all but the upper twigs were hidden by snow…." Johansen (1924): 49c. This depauperate collection was originally reported as *P. tremuloides* Michx. (Johansen, 1924; Macoun & Holm, 1921), though Holm (1922) also considered it could be *P. balsamifera*. Porsild and Cody (1980) reported the collection as *P. balsamifera*, a determination that is likely correct (G.W. Argus, pers. comm. 2011). We explored the slopes above Escape Rapids on the west side of the Coppermine River but did not encounter this species or the deep gully mentioned. The gully may be on the east side of the river, or

beyond the area we explored. We did, however, encounter one small but healthy stand of balsam poplar at a different site in the vicinity of Fockler Creek. The species was growing on a sparsely vegetated, ca. south-facing slope permeated with ground-nesting wasp holes, associated with *Arctous rubra*, *Betula glandulosa*, *Dasiphora fruticosa*, *Juniperus communis* subsp. *depressa*, *Picea glauca* and *Saxifraga tricuspidata*. One ramet about 6 ft. tall had fruits, while all other ramets were sterile and many small suckers were 10-40 cm tall. The species is very rare in the study area. Elsewhere in the Canadian Arctic there are records of the species from northern Labrador (Argus, 2015).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Gully Creek just above Escape Rapids, east side of Coppermine River, [67.616667°N, 115.483333°W ± 1000 m], February 1916, *R.M. Anderson 756* (CAN-40681); S of Fockler Creek, S-facing slope on N side of small tributary of Fockler Creek, ca. 2.3 S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 5 m, 156 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3457* (ALA, ALTA, CAN, UBC, US).

Salix alaxensis (Andersson) Coville var. ***alaxensis***, Fig. 77A—Felt-leaf willow | Asian (N)–amphi-Beringian–North American (NW)

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Fockler Creek, Bigtree River and Kugluk (Bloody Falls) Territorial Park. Taxonomy follows Argus (2010) and Elven et al. (2011), who recognize two varieties in the species. The other variety, var. *longistylis* (Rydberg) C.K. Schneider, is not known from Nunavut. Porsild & Cody (1980) did not recognize infraspecific taxa. This willow is common in Bloody Falls/Kugluk Territorial Park, where it often grows as a large, upright shrub or small tree in the deep gullies of the sand hills. It

is curious that Findlay did not collect this conspicuous species in the vicinity of Bloody Falls. Elsewhere in the Canadian Arctic this taxon is recorded from Banks, Southampton and Victoria islands, mainland Nunavut and Northwest Territories, and northern Quebec (Aiken et al., 2007; Argus, 2015; Bennett, 2015; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 1962, *J.A. Larsen s.n.* (CAN-349130); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'48"N, 115°37'33"W ± 25 m, 153 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3149* (CAN, UBC); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3599* (ALA, CAN); confluence of Coppermine and Bigtree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3600* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3827* (CAN, MO, MT); SW-facing slopes of shallow gully in sand hills above Bloody Falls, SE side of Coppermine River across river from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4191* (CAN, O).

Salix arbusculoides Andersson—Little-tree willow | North American (NW) | Noteworthy Record

This primarily Subarctic species is newly recorded for the study area. Our collection was made along Sleigh Creek in the vicinity of Fockler Creek, an area just outside the range for the taxon

given in Argus (2007), from a tree ca. 20 ft. tall that grew with *Carex podocarpa*, *Chamerion angustifolium*, *Dasiphora fruticosa*, *Rubus arcticus* subsp. *acaulis* and *Salix alaxensis* var. *alaxensis*. The collection fills in a gap between Bathurst Inlet, Hood River and eastern Great Bear Lake (Gould & Walker, 1997; Porsild & Cody, 1980) and just outside Tuktut Nogait National Park, where the species was recently recorded (Saarela et al., 2013a). Elsewhere in the Canadian Arctic the species is recorded from a few mainland Nunavut sites near the treeline (Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Sleigh Creek, just downstream (W) of Tundra Lake, ca. 3.7 km SE of Sandstone Rapids, Coppermine River, 67°26'2.2"N, 115°33'42.9"W ± 25 m, 229 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3448* (CAN, UBC).

Salix arctica Pall.—Arctic willow | Circumpolar–alpine

Previously recorded from Kugluktuk (Cody, 1954b; Macoun & Holm, 1921, as S. anglorum Cham. ; Porsild & Cody, 1980). We made collections at Kugluktuk, Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Argus, 2015; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 24* (ACAD-30939, DAO-199179 barcode 01-01000677513); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 25* (DAO-199178 barcode 01-01000677978); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 15 June 1951, *W.I. Findlay 11* (DAO-199214 barcode 01-01000677962); Kugluktuk, Bloody Falls Cabin, [67.843056, -115.097222], 30 July 1962, *J.A. Larsen s.n.* (CAN-

8370 349632, det. G.W. Argus 1963); Coppermine [Kugluktuk], [67.8333, -115.1], 29 July 1962, *J.A.*
8371 *Larsen 8* (CAN-349630, det. G.W. Argus 1963), *s.n.* (CAN-349626, det. G.W. Argus 1963);
8372 Coppermine [Kugluktuk], vicinity of post, [67.8333, -115.1], 26 July 1949, *A.E. Porsild 17167*
8373 (CAN-127633); Coppermine [Kugluktuk], in settlement near R.C. Mission, [67.8333, -115.1], 4
8374 July 1958, *R.D. Wood* (CAN-265586); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N,
8375 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3050* (ALA, CAN); NW-
8376 facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids,
8377 Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff*
8378 *& Bull 3281* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of
8379 Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014,
8380 *Saarela*, *Sokoloff & Bull 3282* (CAN); meadow just S of Tundra Lake, ca. 4.2 km SE of
8381 Sandstone Rapids, Coppermine River, 67°25'29.5"N, 115°33'50.4"W ± 50 m, 266 m, 05 July
8382 2014, *Saarela*, *Sokoloff & Bull 3432a* (CAN); Kugluk (Bloody Falls) Territorial Park, slope
8383 above Bloody Falls (W side) just below Coppermine River narrows to Falls, between Portage
8384 Trail and river, 67°44'25.4"N, 115°22'31.2"W ± 25 m, 29 m, 12 July 2014, *Saarela*, *Sokoloff &*
8385 *Bull 3852* (CAN, MT, US); Kugluk (Bloody Falls) Territorial Park, N-facing slopes of large
8386 mountain just S of start of Bloody Falls, W side of Coppermine River, 67°44'7.7"N,
8387 115°23'30.4"W ± 15 m, 90 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4008* (ALTA, CAN);
8388 Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N,
8389 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4053* (CAN, QFA, WIN);
8390 Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and
8391 Bloody Falls, 67°45'13.2"N, 115°22'6.3"W ± 3 m, 21 m, 17 July 2014, *Saarela*, *Sokoloff & Bull*
8392 *4148* (CAN, O); clay slopes and beach on E side of Coppermine River, just above start of

Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4214* (CAN, MO); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4351* (CAN, K, NY).

Salix arctophila Cockerell —Northern willow | North American (N)

Previously recorded from Kugluktuk (Porsild & Cody 1980). We did not collect this species in 2014. It was recently collected from the Big Bend area of the Coppermine River, south of the study area (*Reading 39-2*, DAO). Elsewhere in the Canadian Arctic this species is recorded from Baffin, Southampton and Victoria islands and across the mainland (Aiken et al., 2007; Argus, 2015; Cody & Reading, 2005; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17168* (CAN-127634); Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17166* (CAN-127635); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 23* (DAO-199215 barcode 01-01000677979); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 2 August 1951, *W.I. Findlay 238* (DAO-199203 barcode 01-01000677515); Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 08 October 1962, *J.A. Larsen 5* (CAN-349739).

Salix arctica* × *Salix arctophila

Two collections previously identified as *S. arctica* (*Findlay 10*, *22*) (Cody, 1954b) are re-determined as this hybrid, which is newly recorded for the study area. The specimens combine morphological characteristics of both parental species, as described in Argus (2010).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 15 June 1951, *W.I. Findlay 11* (DAO-199214 barcode 01-01000677962); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 22* (DAO-199207 barcode 01-01000677963).

Salix glauca var. ***cordifolia*** (Pursh) Dorn—Beautiful willow | North American (NE) | Noteworthy Record

Previously recorded from Bloody Falls and Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). This is a common species in the study area, and we made numerous collections at Fockler Creek, Melville Creek, Big Creek, and Kugluk (Bloody Falls) Territorial Park. Porsild and Cody (1980) treated this taxon as *S. cordifolia* var. *callicarpea* (Trautv.) Fernald and recorded it as occurring as far west on the mainland as Bathurst Inlet. Argus (2010) treated the taxon as *S. glauca* var. *cordifolia*; also see Argus (1965), who treated the taxon as the "eastern phase" of *S. glauca*, corresponding to this taxon, and mapped it as far east as central Keewatin district. Our collections represent a western range extension from the nearest sites at Bathurst Inlet. Elven et al. (2011) treat the taxon as S. glauca subsp. *callicarpaea* (Trautv.) Bocher.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 150* (DAO-5643 barcode 01-01000677969); Bloody Falls, 67°44'N, 115°23'W, 18 July 1951, *W.I. Findlay 151* (DAO-5644 barcode 01-01000677505); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 218* (DAO-5642 barcode 01-

01000684838); Kugluktuk, 67.798017°N, 115.23075°W, 22 June 2006, *J. Davis 606* (CAN-597643); Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0331* (BABY, det. B.A. Bennett, July 2013); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3130* (CAN, MO, MT, O); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3131* (ALTA, CAN, O); spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3202* (CAN); S of Fockler Creek, S-facing slope on N side of small tributary flowing into Fockler Creek, ca. 2.3 km S of Sandstone Rapids, Coppermine River, 67°25'46.3"N, 115°38'2.5"W ± 25 m, 156 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3237* (CAN, MO, MT); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3373* (CAN, UBC); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3374* (ALA, CAN); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3375* (ALTA, CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3499* (CAN, O); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff &*

Bull 3509 (CAN, UBC, US); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3516* (CAN, MO); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3523* (CAN, MT); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3552* (CAN, UBC); S-facing slopes above Coppermine River, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 50 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3641* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3829* (CAN, WIN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3830* (CAN, QFA, WIN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3841* (CAN, UBC, US, WIN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3842* (CAN, QFA); Kugluk (Bloody Falls) Territorial Park, slope above Bloody Falls (W side) just below Coppermine River narrows to Falls, between Portage Trail and river, 67°44'25.4"N, 115°22'31.2"W ± 25 m, 29 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3850* (CAN, K, NY); Kugluk (Bloody Falls) Territorial Park, slope above Bloody Falls (W side) just below

Coppermine River narrows to Falls, between Portage Trail and river, 67°44'25.4"N, 115°22'31.2"W ± 25 m, 29 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3853* (ALA, ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, gentle stream in shallow valley running into Coppermine River just W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 20 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4012* (CAN, NY); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4070* (CAN, K); Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4072* (ALA, CAN); SW-facing slope above Bloody Falls, SE side of Coppermine River, across river from Kugluk (Bloody Falls) Territorial Park, 67°44'27.2"N, 115°22'58"W ± 5 m, 68 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4195* (CAN); SW-facing slope above Bloody Falls, SE side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 5 m, 68 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4198* (CAN).

Salix glauca L. var. ***glauca*****—**Grey-leaved willow | Amphi-Atlantic (?)–European (N) | Noteworthy Record

Several collections of *S. glauca* L. were reported from Kugluktuk and Bloody Falls in Cody (1954b); no infraspecific taxa were recognized there. Most collections of *Salix glauca* in the study area fall under var. *cordifolia*, but two from Kugluk (Bloody Falls) Territorial Park better fit var. *glauca*, which is newly recorded for the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, just above Bloody Falls, 67°44'22.6"N, 115°22'52"W ± 20 m, 40 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4108* (CAN); SW-facing slope above Bloody Falls, SE side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 5 m, 68 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4196* (CAN, UBC).

Salix niphoclada Rydb., Fig. 77B, C—Barren-ground willow | Amphi-Beringian (E)

Previously recorded from south of Kugluktuk (Porsild & Cody, 1980). Three collections determined as *S. glauca* in Cody (1954b) are this species. We made collections of this common species at Fockler Creek, along the Coppermine River, Richardson Bay and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic it is recorded from Banks and Victoria islands, mainland Northwest Territories and a few mainland Nunavut sites (Aiken et al., 2007; Argus, 2007; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region**:** Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 65* (DAO-5641 barcode 01-01000684852); Coppermine [Kugluktuk], Cemetery Island, 67°50'N, 115°7'W, *W.I. Findlay 121* (DAO-5646 barcode 01-01000684851); Coppermine [Kugluktuk], Cemetery Island, 67°50'N, 115°7'W, *W.I. Findlay 122* (DAO-5645 barcode 01-01000684850); Coppermine [Kugluktuk], west bank of Coppermine River, about six miles from mouth, [67.7668194°N, 115.252225°W ± 1 km], 04 July 1958, *R.D. Wood s.n.* (CAN-265585); E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3340* (CAN); E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km

S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3341* (CAN, QFA, WIN); E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'21.4"N, 115°38'54"W ± 5 m, 140 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3362* (CAN); E side of Fockler Creek, just above its confluence with Coppermine River, ca. 1.1 km SW of Sandstone Rapids, 67°26'30.6"N, 115°39'4.3"W ± 50 m, 135 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3372* (ALTA, CAN); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3387* (CAN, O); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3470* (CAN, MO); Coppermine River, sandstone cliffs above Sandstone Rapids, 67°27'29.6"N, 115°37'59.3"W ± 100 m, 110 m, 06 July 2014, *Saarela*, *Sokoloff & Bull 3472* (CAN); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3626* (CAN); S-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids, 67°31'18.2"N, 115°36'20.1"W ± 150 m, 115 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3627* (CAN, MT); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3682* (CAN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3683* (CAN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 08 July 2014, *Saarela*,

Sokoloff & Bull 3685 (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, upper pond just W of Bloody Falls, 67°44'39.5"N, 115°22'28.9"W ± 10 m, 15 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3899* (CAN); Kugluk (Bloody Falls) Territorial Park, sandy NE-facing slope above small creek in deep gully, about 0.5 km W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 41 m, 41 m, 15 July 2014, *Saarela, Sokoloff & Bull 4019* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, top of sandy ridge, ca. 0.75 km W of Bloody Falls., 67°44'45.7"N, 115°23'4.6"W ± 25 m, 56 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4043* (CAN); SW-facing slope above Bloody Falls, SE side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 5 m, 68 m, 19 July 2014, *Saarela*, *Sokoloff & Bull 4197* (CAN, US).

Salix niphoclada* × *Salix glauca

Two of our collections correspond to this hybrid, both from Kugluk (Bloody Falls) Territorial Park. The hybrid is newly recorded for the study area.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, S-facing cliff (gabbro sill) above start of Bloody Falls, W side of Coppermine River, W side of Portage Trail, 67°44'23.2"N, 115°22'54.5"W ± 50 m, 57 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4084* (CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'10.6"N, 115°22'13.1"W ± 3 m, 17 m, 17 July 2014, *Saarela*, *Sokoloff & Bull 4142* (CAN, UBC).

Salix ovalifolia var. ***arctolitoralis*** (Hultén) Argus—Arctic seashore willow | American Beringian | Noteworthy Record

Our collections are the first records of the taxon for Nunavut, and represent an eastern range extension from the Mackenzie Delta area in Northwest Territories, the previously known eastern limit for the taxon (Argus, 1969; Argus, 1973; Argus, 2004; Porsild & Cody, 1980). The same limit is recorded in Argus (2007) for *S. ovalifolia* s.l. (the limits of the infraspecific taxa are not recorded there). We made two collections of this taxon, one along the rocky shore of Tundra Lake just below a steep southeast-facing slope, the other in Kugluktuk in low shrub tundra amongst rocky outcrops. This is one of two varieties of the Amphi-Beringian *S. ovalifolia* recorded for the study area (see below).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: W shore of Tundra Lake, ca. 4.3 km SE of Sandstone Rapids, Coppermine River, 67°25'39.2"N, 115°33'11.5"W ± 5 m, 252 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3441* (CAN, UBC); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4384* (ALA, ALTA, CAN).

Salix ovalifolia Trautv. var. ***ovalifolia*****—**Oval-leaved willow | Amphi-Beringian | Noteworthy Record

Our collection is the first record for Nunavut, and represents an eastern range extension from the nearest sites in northern Yukon (Argus, 1969; Argus, 1973; Cody, 2000). We are not aware of collections from Northwest Territories. The taxon was growing near Heart Lake in wet, hummocky tundra around small ponds with *Andromeda polifolia*, *Betula glandulosa*, *Carex membranacea* and *Rubus chamaemorus*. Argus (2010) recorded *S. ovalifolia* s.l. from Northwest Territories, Yukon, Alaska and Asia (Chukotka, Russia). In addition to var. *arctolitoralis* (see above), two other varieties are recorded for North America, var. *glacialis* (Andersson) Argus

from Arctic Alaska and var. *cyclophylla* (Rydb.) C.R. Ball from Alaska and Asia (Chukotka, Russia) (Argus, 2010; Elven et al., 2011).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4285* (CAN, UBC).

Salix planifolia Pursh—Tea-leaved willow | North American (N) | Noteworthy Record

This species is new to the study area and our collections from Fockler Creek, Kugluk (Bloody Falls) Territorial Park and near Heart Lake represent a minor northern range extension with respect to the map in Argus (2007). The nearest records are from eastern Great Bear Lake (Porsild & Cody, 1980) and Bathurst Inlet (Cody et al., 1984). Elsewhere in the Canadian Arctic the species is recorded from a few mainland Nunavut sites, Baffin Island, islands in Hudson Bay, and northern Quebec and Labrador (Aiken et al., 2007; Argus, 2015; Bennett, 2015; Cody & Reading, 2005; Cody et al., 1984; Korol, 1992; Porsild & Cody, 1980).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3124* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3843* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3844* (CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of

mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4287* (ALTA, CAN).

Salix pseudomyrsinites Andersson—Tall blueberry willow | North American (N) | Noteworthy Record

Our collection from along the upper shore of the Coppermine River at the southern limit of the Arctic ecozone is a major northern range extension for the species, and is the first collection for mainland Nunavut. Our collection was taken from a low shrub ca. one foot high growing in low shrub tundra. The nearest site for the species are from southern Northwest Territories (Argus, 2007). It was included in *S. myrtillifolia* Anderss. in Porsild & Cody (1980). Elsewhere in Nunavut it is known only from Akimiski Island in James Bay (Argus, 2010).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-facing slopes above Coppermine River and below spruce forest, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3648* (CAN, UBC).

Salix pulchra Cham.—Diamond-leaved willow | European (NE)–Asian (N)–amphi-Beringian

The map in Porsild & Cody (1980) records this species as occurring across much of mainland Nunavut, and previously recorded for the study area (Cody, 1954b). Many of these mainland Nunavut specimens have been re-determined as other species. In 2007, Argus mapped this taxon as occurring as far east as the Nunavut/Northwest Territories border but not extending into Nunavut (Argus 2007, Argus in Aiken et al. 2007) but in 2010 he recorded it for Nunavut (Argus 2010). Argus (2010) noted, under the closely-related species *S. planifolia*, that specimens identified as *S. pulchra* occur as far east as northeast of Bathurst Inlet. Five collections from the

study area (*Findlay 37, 42, 43, 46, 212*) were published as *S. pulchra* (Cody, 1954b), with a comment that they are probably referable to *S. pulchra* var. *yukonensis* C.K. Schneider. In 1969 one of these collections was annotated by G.W. Argus as *S. planifolia* subsp. *pulchra* (Cham.) Argus var. *yukonensis* (Schneid.) Argus, and the other four were annotated as *S. planifolia* subsp. *pulchra* (Cham.) Argus var. *pulchra*. These names are all now considered synonyms of *S. pulchra* (Argus, 2010) as treated here. Elven et al. (2011) recognized two subspecies in *S. pulchra*.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 37* (DAO-32631 barcode 01-01000684855); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 42* (DAO-32632 barcode 01-01000684856); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 43* (DAO-32633 barcode 01-01000684853); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 46* (DAO-32634 barcode 01-01000684854); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, *W.I. Findlay 212* (DAO-32639 barcode 01-01000684857); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3548* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 20 July 2014, *Saarela*, *Sokoloff & Bull 4233* (CAN).

Salix reticulata L., Fig. S46—Net-vein willow | Circumpolar–alpine

Previously recorded from Kugluktuk (Porsild & Cody, 1980). We made collections at Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This species is widely distributed across the

8653 Canadian Arctic, excluding most of the high Arctic islands (Aiken et al., 2007; Argus, 2007;
8654 Argus, 2015; Cody & Reading, 2005; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980;
8655 Saarela et al., 2013a).

8656 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk],
8657 [67°49’36”N, 115°5’36”W ± 1.5 km], *J.A. Larsen s.n.* (CAN-353570); Coppermine
8658 [Kugluktuk], 67°49'36"N, 115°5'36"W, 29 June 1951, *W.I. Findlay 50* (DAO-185810 barcode
8659 01-01000677363) & *W.I. Findlay 51* (DAO-185811 barcode 01-01000677812); Coppermine
8660 [Kugluktuk], 67°49'36"N, 115°5'36"W, 20 June 1951, *W.I. Findlay 26* (DAO-185812 barcode
8661 01-01000677362); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 2 August 1951, *W.I.*
8662 *Findlay 237* (ACAD-30944, DAO-185809 barcode 01-01000677813); Kugluktuk, tundra slope
8663 overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 14 June 2000, *L.K. Benjamin s.n.*
8664 (ACAD-ECS015883); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50
8665 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3046* (CAN, UBC); old riverbed of Fockler
8666 Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ±
8667 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3166* (ALA, CAN); Kugluk (Bloody Falls)
8668 Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of
8669 Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull*
8670 *3863* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody
8671 Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13
8672 July 2014, *Saarela*, *Sokoloff & Bull 3864* (CAN).

8673 ***Salix richardsonii*** Hook., Fig. 78—Richardson's willow | Asian (N)–amphi-Beringian–North
8674 American (NW)

Previously recorded from Kugluktuk (Cody, 1954b; Macoun & Holm, 1921; Porsild & Cody, 1980, as S. lanata subsp. richardsonii (Hook.) Skvortson.). We made collections at Kugluktuk and Kugluk (Bloody Falls) Territorial Park. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Prince of Wales, Southampton and Victoria islands, and mainland Nunavut and Northwest Territories (Aiken et al., 2007; Argus, 2007; Cody & Reading, 2005; Cody et al., 1984; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], vicinity of post, [67°49’36”N, 115°5’36”W ± 1.5 km], 26 July 1949, *A.E. Porsild 17169* (CAN-127661); Coppermine [Kugluktuk], [67°49’36”N, 115°5’36”W ± 1.5 km], 1962, *J. A. Larsen s.n.* (CAN-352277); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 15 June 1951, *W.I. Findlay 8* (DAO-185824 barcode 01-01000677964) & *W.I. Findlay 9* (ACAD-30941, DAO-185827 barcode 01-01000677965); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 7 June 1951, *W.I. Findlay 5* (DAO-185829 barcode 01-01000677966) & *W.I. Findlay 4* (ACAD-30943, DAO-185826 barcode 01-01000677503); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 23 June 1951, *W.I. Findlay 27* (DAO-185825 barcode 01-01000677967) & *W.I. Findlay 28* (DAO-185828 barcode 01-01000677502); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3051* (CAN, MO, MT); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3052* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3297* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, slope above Bloody Falls (W side) just below Coppermine River narrows to falls, between Portage Trail and river, 67°44'25.4"N, 115°22'31.2"W ± 25 m, 29 m, 12 July 2014, *Saarela*,

Sokoloff & Bull 3851 (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3885* (ALTA, CAN); Kugluk (Bloody Falls) Territorial Park, gentle stream in shallow valley running into Coppermine River just W of Bloody Falls, 67°44'36.6"N, 115°22'59.3"W ± 20 m, 41 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4014* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4380* (CAN, O).

Saxifragaceae [3/10]

Chrysosplenium rosendahlii Packer, Fig. 79A—Rosendahl's golden-saxifrage | Amphi-Beringian–North American (N) | Noteworthy Record

This is the first report of this species from the study area. An earlier collection of the species from Kugluktuk was recognized as *C. tetrandrum* (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park, Heart Lake and Kugluktuk. *Chrysosplenium rosendahlii* Packer was described from Somerset Island, Nunavut (Packer, 1963), later reduced to synonymy (Aiken et al., 2007; Scoggan, 1978-1979) or ignored (Porsild & Cody, 1980), and more recently recognized again as a distinct species (Elven et al., 2011; Freeman & Levsen, 2007), a status supported by plastid barcode data (Saarela et al., 2013b). Packer (1963) cited and mapped collections of the species only from Boothia, Adelaide and Melville peninsulas on mainland Nunavut. All previous collections in the study area, along with our new ones, are *C. rosendahllii*. A recent collection from just outside the study area, however, is confirmed as *C. tetrandrum* (Reading 456, DAO; Cody et al., 2003), while one from

the Big Bend area of the Coppermine River, south of the study area, is *C. rosendahllii* (*Reading 22*, DAO).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 2 July 1951, *W.I. Findlay 62* (DAO-3759 barcode 01-01000619971); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 8 July 1951, *W.I. Findlay 105* (DAO-3760 barcode 01-01000619972); Coppermine [Kugluktuk], between R.C. Mission and DOT, [67°49’36”N, 115°5’36”W ± 1.5 km], 07 July 1958, *R.D. Wood s.n.* (CAN-265527); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3308* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3317* (CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3840* (CAN); N side of Heart Lake, below rocky cliff, SW of Kugluktuk, 5.64 km SW of mouth of Coppermine River, 67°48'33.4"N, 115°12'38.8"W ± 25 m, 31 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4310* (CAN, UBC); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela*, *Sokoloff & Bull 4350* (CAN).

Micranthes foliolosa (R. Br.) Gornall, Fig. 79B—Leafy-stemmed saxifrage | Circumpolar

Previously recorded from Kugluktuk as *Saxifraga foliolosa* R.Br (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, along the Coppermine River and in the vicinity of Heart Lake. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007;

Blondeau, 2015f; Cody et al., 2003; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 August 1951, *W.I. Findlay 247* (DAO-25897 barcode 01-01000619980); tundra just S of Fockler Creek and N of unnamed tributary, ca. 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°38'8.9"W ± 3 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3316* (CAN); E end of small, unnamed lake on W bank of Coppermine River, ca. 8.3 km NNE of Sandstone Rapids, 67°31'30.8"N, 115°36'16.1"W ± 50 m, 126 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3660* (CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4282* (CAN, MT); creek just N of sewage retention pond (used as sewage outlet), 5.1 km SW of Coppermine River, 67°48'59.1"N, 115°12'5.8"W ± 25 m, 34 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4335* (CAN, UBC).

Micranthes nivalis (L.) Small—Snow saxifrage | Circumpolar–alpine

Previously recorded from Kugluktuk as *Saxifraga nivalis* L. (Cody, 1954b; Porsild & Cody, 1980). We made collections at Kugluktuk, Fockler Creek and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015f; Cody et al., 2003; Cody et al., 1989; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 17 July 1951, *W.I. Findlay 126* (DAO-185686 barcode 01-01000619936); Coppermine [Kugluktuk], basalt ridge south of settlement, [67.816375°N, 115.1002722°W ± 350 m], 30 June 1958, *R.D. Wood s.n.* (CAN-265518); Coppermine

8764 [Kugluktuk], basalt ridge south of settlement, [67.816375°N, 115.1002722°W ± 350 m], 30 June
8765 1958, *R.D. Wood s.n.* (CAN-265518); Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N,
8766 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela*, *Sokoloff & Bull 3057* (CAN); N side of
8767 Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N,
8768 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3321* (CAN); E side of
8769 Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km
8770 S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 04 July 2014, *Saarela*,
8771 *Sokoloff & Bull 3337* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky
8772 (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage
8773 Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3936*
8774 (CAN); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of
8775 Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250
8776 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3995* (CAN).

8777 ***Micranthes porsildiana*** (Calder & Savile) Elven & D.F. Murray, Fig. 80—Porsild's saxifrage |
8778 Amphi-Beringian (E) | Noteworthy Record

8779 Our collection and a 1958 collection (*R.D. Wood s.n.*) that was not mapped in Calder & Savile
8780 (1960) or Porsild & Cody (1980), are the first records for the study area. Our collection was
8781 made in Kugluktuk, in a grassy meadow along an ATV trail growing with *Calamagrostis* spp.,
8782 *Chamerion angustifolium*, *Leymus mollis* subsp. *villosissimus* and *Senecio lugens*. The taxon was
8783 recently collected from three sites just outside the study area (*Reading 24-1*, *81*, *519*, DAO)
8784 (Cody et al., 2003). These collections close a gap between the Bathurst Inlet area, Hood River
8785 and the eastern shore of Great Bear Lake (Calder & Savile, 1960; Elven et al., 2011; Gould &
8786 Walker, 1997). Elsewhere in the Canadian Arctic this taxon is known only from sites on central

mainland Nunavut (Cody & Reading, 2005; Porsild & Cody, 1980). Porsild & Cody (1980) (after Calder & Savile, 1960) recognized this taxon as *Saxifraga punctata* subsp. *porsildiana* Calder & Taylor, however, the name *S. punctata* L. s.s. (syn. *Micranthes punctata* (L.) Losinsk.) has been misapplied in North America and that taxon is restricted to the Russian Far East (Elven et al., 2011). Brouillet & Elvander (2009a) recognized the taxon as *M. nelsoniana* var. *porsildiana* (Calder & Savile) Gornall & H. Ohba, while Elven et al. (2011) recognized the taxon as a separate species. We follow this taxonomy here.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], [67°49'36"N, 115°5'36"W ± 1.5 km], 05 July 1958, *R.D. Wood s.n.* (CAN-265517); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela, Sokoloff & Bull 4251* (CAN, UBC).

Saxifraga aizoides L., Fig. S47—Yellow mountain saxifrage | North American (N)–amphi-Atlantic–European

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and near Heart Lake cemetery. Elsewhere in the Canadian Arctic this species is recorded from Baffin, Banks, Coats, Ellesmere, Prince Patrick, Southampton and Victoria islands, and across the mainland (Aiken et al., 2007; Blondeau, 2015f; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 6 August 1951, *W.I. Findlay 257* (DAO-185575 barcode 01-01000620002); S of Fockler Creek, along small tributary that runs into Fockler Creek, ca. 2.3 km

S of Sandstone Rapids, Coppermine River, 67°25'44.9"N, 115°38'25.9"W ± 100 m, 152 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3266* (CAN, UBC); slopes on E side of Coppermine River, N of its confluence with Fockler Creek, ca. 0.8 km SW of Sandstone Rapids, 67°26'36.9"N, 115°38'50.1"W ± 50 m, 128 m, 04 July 2014, *Saarela*, *Sokoloff & Bull 3393* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, upper pond just W of Bloody Falls, 67°44'39.5"N, 115°22'28.9"W ± 10 m, 15 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3894* (ALA, CAN); hummocky tundra just SW of sewage retaining pond, N side of road to Heart Lake cemetery, 5.4 km SW of mouth of Coppermine River, 67°48'44.6"N, 115°12'27.2"W ± 3 m, 35 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4326* (ALTA, CAN).

Saxifraga cernua L., Fig. S48—Nodding saxifrage, bulblet saxifrage | Circumpolar–alpine

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Coppermine Mountains, Kugluk (Bloody Falls) Territorial Park and Kugluktuk. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015f; Cody et al., 2003; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 9* (CAN-65749); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 24 July 1951, *W.I. Findlay 180* (DAO-185618 barcode 01-01000619982, UBC-V40795); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 8 July 1951, *W.I. Findlay 102* (DAO-185620 barcode 01-01000619981) & *W.I. Findlay 105* (DAO-185617 barcode 01-01000619928); Coppermine [Kugluktuk], 67°49’36”N,

115°5’36’’W, 02 August 1995, *T. Dolman 92* (LEA); Kugluktuk, airport, 21 July 2013, 67.81749°N, 115.13449°W, *B.A. Bennett 13-0636* (UBC, det. B.A. Bennett, Dec. 2013); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3158* (CAN); old riverbed of Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 02 July 2014, *Saarela*, *Sokoloff & Bull 3175* (CAN); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'34.8"N, 115°33'27.8"W ± 20 m, 265 m, 05 July 2014, *Saarela*, *Sokoloff & Bull 3439* (CAN); flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'43.7"N, 115°38'51.2"W ± 150 m, 422 m, 09 July 2014, *Saarela*, *Sokoloff & Bull 3754* (CAN, UBC); Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 3993* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, N-facing slopes of large mountain just S of start of Bloody Falls, W side of Coppermine River, 67°44'7.7"N, 115°23'30.4"W ± 15 m, 90 m, 14 July 2014, *Saarela*, *Sokoloff & Bull 4007* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above Coppermine River valley, ca. 1 .k km W of Bloody Falls, 67°44'31.8"N, 115°24'25.6"W ± 5 m, 97 m, 16 July 2014, *Saarela*, *Sokoloff & Bull 4104* (CAN, MO, MT); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 22 July 2014, *Saarela*, *Sokoloff & Bull 4236* (ALTA, CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8 m, 25 July 2014, *Saarela*, *Sokoloff & Bull 4363* (CAN, O).

Saxifraga hirculus L., Fig. S49—Yellow marsh saxifrage | Circumboreal-polar

Previously recorded from Kugluktuk and the mouth of the Rae River (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Kugluk (Bloody Falls) Territorial Park and near Heart Lake. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015f; Cody et al., 2003; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Elven et al. (2011) recognized subspecies in *S. hirculus*, following Hedberg (1992), with the caveat that the diagnostic characters cannot always be applied consistently. Brouillet & Elvander (2009b) did not recognize the subspecies. Given the uncertainty we follow the latter treatment. In Hedberg (1992), most Canadian Arctic plants are mapped as *S. hirculus* subsp. *propinqua* (R. Br.) Á. Löve & D. Löve and a few low Arctic mainland collections are mapped as subsp. *hirculus*. Porsild & Cody (1980) recognized the taxon as *S. hirculus* var. *propinqua* (R. Br.) Simm.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, Fort Hearne–Bloody Falls, [67.7761972°N, 115.2037222°W ± 7.5 km], 1931, *A.M. Berry 1*0 (CAN-65528); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 30 July 1951, *W.I. Findlay 209* (DAO-9607 barcode 01-01000619918, UBC-V40785); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 108* (DAO9605 barcode 01-01000619919); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 21 July 1951, *W.I. Findlay 164* (DAO-9606 barcode 01-01000619917); Rae River mouth, 01 August 1955, *R.E. Miller 294* (CAN-241986); Coppermine [Kugluktuk], 67°49’36”N, 115°5’36’’W, 02 August 1995, *T. Dolman 91* (LEA); NW-facing slope just upstream of small tributary from its confluence with Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 200 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3306* (CAN); Kugluk (Bloody Falls) Territorial Park, gradual

slope amongst large gullies, ca. 1 km W of Bloody Falls, 67°44'43.9"N, 115°23'20.8"W ± 3 m, 58 m, 15 July 2014, *Saarela*, *Sokoloff & Bull 4040* (CAN); ca. 0.5 km SW of Heart Lake, SW of Kugluktuk, 7.5 km SW of mouth of Coppermine River, 67°47'52"N, 115°14'14.4"W ± 350 m, 66 m, 23 July 2014, *Saarela*, *Sokoloff & Bull 4283* (CAN).

Saxifraga hyperborea R. Br.—Pygmy saxifrage | Circumpolar–alpine

Recorded previously from Kugluktuk (Cody, 1954b, as S. rivularis forma hyperborea (R.Br.) Hook.; Porsild & Cody, 1980). We collected the species only once, at Fockler Creek. Until recently, *S. rivularis* L. was the name used across the Canadian Arctic (Cody, 1996b; Porsild & Cody, 1980) for what are now recognized as two species, *S. rivularis* and *S. hyperborea* (Jørgensen et al., 2006). *Saxifraga rivularis* comprises two subspecies, one with an amphi-Atlantic distribution, the other amphi-Beringian; neither are known from our region. *Saxifraga hyperborea* is more widespread, and is present throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015f; Brouillet & Elvander, 2009b; Elven et al., 2011; Jørgensen et al., 2006). A key distinguishing the two species is given in Saarela et al. (2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 10 July 1951, *W.I. Findlay 107B* (DAO-181558 barcode 01-01000619927); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3292* (CAN, UBC).

Saxifraga oppositifolia L. subsp. ***oppositifolia***, Fig. S50A—Purple saxifrage | Circumpolar–alpine

Previously recorded from Kugluktuk (Cody, 1954b; Porsild & Cody, 1980). We made collections at Fockler Creek, Expeditor Cove and Kugluk (Bloody Falls) Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015f; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a). Taxonomy follows Elven et al. (2011) and Brouillet & Elvander (2009b). The other infraspecific taxon, subsp. *smalliana* (Engl. & Irmsch.) Hultén, is restricted to Alaska and Yukon (Brouillet & Elvander, 2009b).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 4 June 1951, *W.I. Findlay 1* (DAO-185695 barcode 01-01000619908); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 162* (UBC-V151901); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 03 July 2014, *Saarela*, *Sokoloff & Bull 3280* (ALA, CAN); Kugluktuk, rocky outcrop, overlooking Coppermine River, [67°49'36”N, 115°5'36”W], 13 June 2000, *L.K. Benjamin s.n.* (ACAD-ECS015887); Coronation Gulf, NW peninsula of Expeditor Cove, ca. 9.6 km NW of Kugluktuk, 67°52'39.1"N, 115°16'43.8"W ± 10 m, 25 m, 08 July 2014, *Saarela*, *Sokoloff & Bull 3700* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela*, *Sokoloff & Bull 3892* (ALTA, CAN).

Saxifraga tricuspidata Rottb., Fig. S50B, C—Prickly saxifrage | North American (N)

Previously recorded from Kugluktuk (Cody, 1954b; Macoun & Holm, 1921; Porsild & Cody, 1980). We made collections at Fockler Creek, Melville Creek and Kugluk (Bloody Falls)

Territorial Park. This species is widespread throughout the Canadian Arctic (Aiken et al., 2007; Blondeau, 2015f; Cody et al., 1989; Korol, 1992; Porsild & Cody, 1980; Saarela et al., 2013a).

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: mouth of Coppermine River, 14 July 1928, *M. Harrington 15* (DAO-181614 barcode 01-01000620004); Coppermine [Kugluktuk], 67°49'36"N, 115°5'36"W, 22 July 1951, *W.I. Findlay 170* (ACAD-30949, DAO-181616 barcode 01-01000620006, QFA0255275, UBC-V40784); Coppermine [Kugluktuk], 67°51'N, 115°16'W, 02 July 1972, *F. Fodor N 138* (UBC-V151894); flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 01 July 2014, *Saarela*, *Sokoloff & Bull 3129* (CAN, UBC); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 07 July 2014, *Saarela*, *Sokoloff & Bull 3530* (ALA, CAN); Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela*, *Sokoloff & Bull 3808* (ALTA, CAN, O).

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8953 **References**

8954 Adams RP. 1993. *Juniperus* Linnaeus. In: Flora of North America Editorial Committee, ed.
8955 *Flora of North America North of Mexico 2 Pteridophytes and Gymnosperms*. Oxford and
8956 New York: Oxford University Press, 412–420.
8957 Adams RP. 2008. *Juniperus* of Canada and the United States: taxonomy, key and distribution.
8958 *Phytologia* 90:255–314.
8959 Aiken SG. 2007. *Arctagrostis* Griseb. In: Barkworth ME, Capels KM, Long S, Anderton LK,
8960 and Piep MB, eds. *Flora of North America North of Mexico 24 Magnoliophyta:*
8961 *Commelinidae (in part): Poaceae, part 1*. Oxford and New York: Oxford University
8962 Press, 676–678.
8963 Aiken SG, Dallwitz MJ, Consaul LL, McJannet CL, Boles RL, Argus GW, Gillett JM, Scott PJ,
8964 Elven R, LeBlanc MC, Gillespie LJ, Brysting AK, Solstad H, and Harris JG. 2007. Flora
8965 of the Canadian Arctic Archipelago: Descriptions, Illustrations, Identification, and
8966 Information Retrieval [CD-ROM]. *Available at http://nature.ca/en/research-*
8967 *collections/our-research/areas-expertise/botany/flora-canadian-arctic-archipelago*
8968 (accessed 27 January 2016).
8969 Aiken SG, and Darbyshire SJ. 1990. *Fescue grasses of Canada*: Research Branch, Agriculture
8970 Canada.
8971 Aiken SG, and Lefkovitch LP. 1990. *Arctagrostis* (Poaceae, tribe Pooideae) in North America
8972 and Greenland. *Canadian Journal of Botany* 68:2422–2432. 10.1139/b90-308
8973 Al-Shehbaz IA. 2010a. *Erysimum* Linnaeus. In: Flora of North America Editorial Committee, ed.
8974 *Flora of North America North of Mexico 7 Magnoliophyta: Salicaceae to Brassicaceae*.
8975 Oxford and New York: Oxford University Press, 534–545.
8976 Al-Shehbaz IA. 2010b. *Transberingia* Al-Shehbaz & O'Kane. In: Flora of North America
8977 Editorial Committee, ed. *Flora of North America North of Mexico 7 Magnoliophyta:*
8978 *Salicaceae to Brassicaceae*. Oxford and New York: Oxford University Press, 456–457.

8979 Al-Shehbaz IA, and German DA. 2014. A synopsis of the genus *Braya* (Brassicaceae). *Harvard*
8980 *Papers in Botany* 19:161–174. 10.3100/hpib.v19iss2.2014.n1
8981 Al-Shehbaz IA, Marhold K, and Lihová J. 2010a. *Cardamine* Linnaeus. In: Flora of North
8982 America Editorial Committee, ed. *Flora of North America North of Mexico 7*
8983 *Magnoliophyta: Salicaceae to Brassicaceae*. Oxford and New York: Oxford University
8984 Press, 464–484.
8985 Al-Shehbaz IA, and O'Kane SL, Jr. 2003. *Transberingia*, a new generic name replacing the
8986 illegitimate *Beringia* (Brassicaceae). *Novon* 13:396.
8987 Al-Shehbaz IA, Windham MD, and Elven R. 2010b. *Draba* Linnaeus. In: Flora of North
8988 America Editorial Committee, ed. *Flora of North America North of Mexico 7*
8989 *Magnoliophyta: Salicaceae to Brassicaceae*. Oxford and New York: Oxford University
8990 Press, 269–347.
8991 Alice LA, Goldman DH, Macklin JA, and Moore G. 2014. *Rubus* Linnaeus. In: Flora of North
8992 America Editorial Committee, ed. *Flora of North America North of Mexico 9*
8993 *Magnoliophyta: Picraminaceae to Rosaceae*. Oxford and New York: Oxford University
8994 Press, 28–56.
8995 Allred KW, and Barkworth ME. 2007. *Anthoxanthum* L. In: Barkworth ME, Capels KM, Long
8996 S, Anderton LK, and Piep MB, eds. *Flora of North America North of Mexico 24*
8997 *Magnoliophyta: Commelinidae (in part): Poaceae, part 1*. Oxford and New York:
8998 Oxford University Press, 758–764.
8999 Alsos IG, Ehrich D, Eidesen PB, Solstad H, Westergaard KB, Schonswetter P, Tribsch A,
9000 Birkeland S, Elven R, and Brochmann C. 2015. Long-distance plant dispersal to North
9001 Atlantic islands: colonization routes and founder effect. *AoB Plants* 7.
9002 10.1093/aobpla/plv036
9003 Alsos IG, Engelskjøn T, Gielly L, Taberlet P, and Brochmann C. 2005. Impact of ice ages on
9004 circumpolar molecular diversity: insights from an ecological key species. *Molecular*
9005 *Ecology* 14:2739–2753. 10.1111/j.1365-294X.2005.02621.x
9006 Alverson ER. 1993. *Cryptogramma* R. Brown. In: Flora of North America Editorial Committee,
9007 ed. *Flora of North America North of Mexico 2 Pteridophytes and Gymnosperms*. Oxford
9008 and New York: Oxford University Press, 137–139.

9009 Anderson RM. 1917. Recent explorations on the Canadian Arctic Coast. *Geographical Review*
9010 4:241–266. 10.2307/207437
9011 Angiosperm Phylogeny Group III. 2009. An update of the Angiosperm Phylogeny Group
9012 classification for the orders and families of flowering plants: APG III. *Botanical Journal*
9013 *of the Linnean Society* 161:105–121. 10.1111/j.1095-8339.2009.00996.x
9014 Anonymous. 1935. Father Dutilly's botanical investigations in the Canadian Arctic, 1934. *Polar*
9015 *Record* 2:52–53. http://www.dx.doi.org/10.1017/S0032247400033520
9016 Anonymous. 1949. Arctic Institute Research Program. *Arctic* 2:71–73.
9017 Anonymous. 2015a. Bloody Falls National Historic Site of Canada. *Available at*
9018 *http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=1167* (accessed 26 October
9019 2015).
9020 Anonymous. 2015b. *Botrychium tunux.* E-Flora BC: Electronic Atlas of the Plants of British
9021 Columbia [eflora.bc.ca]. B. Klinkenberg (ed.). *Available at*
9022 *http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Botrychium%20tunux* (accessed 3
9023 June 2015).
9024 Argus GW. 1965. The taxonomy of the *Salix glauca* complex in North America. *Contributions*
9025 *from the Gray Herbarium of Harvard University* 196:1–142.
9026 Argus GW. 1969. New combinations in the *Salix* of Alaska and Yukon. *Canadian Journal of*
9027 *Botany* 47:795–801.
9028 Argus GW. 1973. The genus *Salix* in Alaska and Yukon. *Publications in Botany, National*
9029 *Museum of Natural Sciences* 2:1–279.
9030 Argus GW. 2004. A guide to the identification of *Salix* (willows) in Alaska, the Yukon Territory
9031 and adjacent regions. July 2004 workshop on willow identification. *Available at*
9032 *http://accs.uaa.alaska.edu/files/botany/publications/2004/GuideSalixAlaskaYukon.pdf*
9033 (accessed 30 June 2016).
9034 Argus GW. 2007. *Salix* (Salicaceae) distribution maps and a synopsis of their classification in
9035 North America, north of Mexico. *Harvard Papers in Botany* 12:335–368.
9036 http://dx.doi.org/10.3100/1043-4534(2007)12[335:SSDMAA]2.0.CO;2
9037 Argus GW. 2010. *Salix* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of*
9038 *North America North of Mexico 7 Magnoliophyta: Salicaceae to Brassicaceae*. Oxford
9039 and New York: Oxford University Press, 23–162.

9040 Argus GW. 2015. Salicaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 2*.
9041 Québec, Québec: Presses de l'Université Laval, 333–414.
9042 Backlund A, and Pyck N. 1998. Diervillaceae and Linnaeaceae, two new families of
9043 caprifolioids. *Taxon* 47:657–661. 10.2307/1223583
9044 Bailleul SM. 2015. Rosaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 2*.
9045 Québec, Québec: Presses de l'Université Laval, 471–570.
9046 Ball PM, and Wujek DE. 2002. *Eriophorum* Linnaeus. In: Flora of North America Editorial
9047 Committee, ed. *Flora of North America North of Mexico 23 Magnoliophyta:*
9048 *Commelinidae (in part): Cyperaceae*. Oxford and New York: Oxford University Press,
9049 21–31.
9050 Ball PW, and Mastrogiuseppe J. 2002. *Carex* Linnaeus sect. *Aulocystis* Dumortier. In: Flora of
9051 North America Editorial Committee, ed. *Flora of North America North of Mexico 23*
9052 *Magnoliophyta: Commelinidae (in part): Cyperaceae*. Oxford and New York: Oxford
9053 University Press, 477–482.
9054 Ball PW, and Zoladz M. 1994. The taxonomy of *Carex petricosa* (Cyperaceae) and related
9055 species in North America. *Rhodora* 96:295–310.
9056 Banaev EV, and Adel'shin RV. 2009. Structure of *Alnus fruticosa* Rupr. s. l. and its relationships
9057 with other taxa of subgenus *Alnobetula* (Ehrhart) Peterman. *Contemporary Problems of*
9058 *Ecology* 2:601–610. 10.1134/s1995425509060186
9059 Barkley TM. 2006. *Senecio* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora*
9060 *of North America North of Mexico 20 Magnoliophyta: Asteridae (in part): Asteraceae,*
9061 *part 2*. Oxford and New York: Oxford University Press, 544–570.
9062 Barkley TM, and Murray DM. 2006. *Tephroseris* (Reichenbach) Reichenbach. In: Flora of North
9063 America Editorial Committee, ed. *Flora of North America North of Mexico 20*
9064 *Magnoliophyta: Asteridae (in part): Asteraceae, part 2*. Oxford and New York: Oxford
9065 University Press, 541–548.
9066 Barkworth ME. 2007. *Deschampsia* P. Beauv. In: Barkworth ME, Capels KM, Long S, Anderton
9067 LK, and Piep MB, eds. *Flora of North America North of Mexico 24 Magnoliophyta:*
9068 *Commelinidae (in part): Poaceae, part 1* Oxford and New York: Oxford University
9069 Press, 624–633.

9070 Barkworth ME, and Atkins RJ. 1984. *Leymus* Hochst. (Gramineae: Triticeae) in North America:
9071 taxonomy and distribution. *American Journal of Botany* 71:609–625.
9072 Barkworth ME, Campbell JJN, and Saloman B. 2007. *Elymus* L. In: Barkworth ME, Capels KM,
9073 Long S, Anderton LK, and Piep MB, eds. *Flora of North America North of Mexico 24*
9074 *Magnoliophyta: Commelinidae (in part): Poaceae, part 1*. Oxford and New York:
9075 Oxford University Press, 288–343.
9076 Barneby RC. 1964. Atlas of North American *Astragalus*. *Memoirs of the New York Botanical*
9077 *Garden* 13:1–1188.
9078 Barr W. 2002. *From Barrow to Boothia: The Arctic Journal of Chief Factor Peter Warren*
9079 *Dease, 1836-1839*: McGill-Queen's Press.
9080 Bassett I, and Crompton C. 1978. The genus *Suaeda* (Chenopodiaceae) in Canada. *Canadian*
9081 *Journal of Botany* 56:581–591. 10.1139/b78-067
9082 Bassett IJ. 1967. Taxonomy of *Plantago* L. in North America: Sections *Holopsyllium* Pilger,
9083 *Palaeopsyllium* Pilger, and *Lamprosantha* Decne. *Botany* 45:565–577. 10.1139/b67-063
9084 Bateman RM, James KE, Luo Y-B, Lauri RK, Fulcher T, Cribb PJ, and Chase MW. 2009.
9085 Molecular phylogenetics and morphological reappraisal of the *Platanthera* clade
9086 (Orchidaceae: Orchidinae) prompts expansion of the generic limits of *Galearis* and
9087 *Platanthera*. *Annals of Botany* 104:431–445. 10.1093/aob/mcp089
9088 Bayer RJ. 1993. A taxonomic revision of the genus *Antennaria* (Asteraceae: Inuleae:
9089 Gnaphaliinae) of Alaska and Yukon Territory, Northwestern North America. *Arctic and*
9090 *Alpine Research* 25:150–159. 10.2307/1551552
9091 Bayer RJ. 2006. *Antennaria* Gaertner. In: Flora of North America Editorial Committee, ed. *Flora*
9092 *of North America North of Mexico 19 Magnoliophyta: Asteridae (in part): Asteraceae,*
9093 *part 1*. Oxford and New York: Oxford University Press, 388–415
9094 Bayer RJ, Bogle AL, and Cherniawsky DM. 2006. *Petasites* Miller. In: Flora of North America
9095 Editorial Committee, ed. *Flora of North America North of Mexico 20 Magnoliophyta:*
9096 *Asteridae (in part): Asteraceae, part 2*. Oxford and New York: Oxford University Press,
9097 635–640.
9098 Bayer RJ, and Stebbins GL. 1993. A synopsis with keys for the genus *Antennaria* (Asteraceae:
9099 Inuleae: Gnaphaliinae) of North America. *Canadian Journal of Botany* 71:1589–1604.
9100 10.1139/b93-194

9101 Bennett B. 2013. Vascular plants of Nahanni National Park Reserve: Results of a survey August
9102 7-12, 2012. Report for Parks Canada.
9103 Bennett B. 2015. Vascular plants of eastern Victoria Island and adjacent mainland Nunavut:
9104 Results of field studies, summer 2014. In: Anonymous, ed. *Towards the Development of*
9105 *the Canadian High Arctic Research Station (CHARS) as a Centre for Science and*
9106 *Technology in Canada and the Circumpolar North: Regional Social and Ecological*
9107 *Context, Baseline Studies, and Monitoring Pilots*, 47–81.
9108 Bennett BA. 2008. An inventory of vascular plants of Ivvavik National Park.
9109 Bennett BA, Catling PM, Cody WJ, and Argus GW. 2010 [2011]. New records of vascular plants
9110 in the Yukon Territory VIII. *Canadian Field-Naturalist* 124:1–27.
9111 Blaney CS, and Kotanen PM. 2001. The vascular flora of Akimiski Island, Nunavut Territory,
9112 Canada. *Canadian Field-Naturalist* 115:88–98.
9113 Bliss LC. 1997. Arctic ecosystems of North America. In: Wielgolaski FE, ed. *Polar and Alpine*
9114 *Tundra Vol 3*. Amsterdam: Elsevier, 551–684.
9115 Blondeau M. 1989a. La flore vasculaire de la région d'Ivujivik incluant Wolstenholme (Nouveau
9116 Québec) et les îles Digges (T. N.-O.). *Provancheria* 22:1–102.
9117 Blondeau M. 1989b. La flore vasculaire des environs d'Akulivik, Nouveau-Québec.
9118 *Provancheria* 23:1–80.
9119 Blondeau M. 1990. La flore vasculaire de la Baie Diana, Détroit d'Hudson, Nouveau-Québec.
9120 *Provancheria* 24:1–68.
9121 Blondeau M. 2015a. Caryophyllaceae. In: Payette S, ed. *Flore nordique du Québec et du*
9122 *Labrador 2*. Québec, Québec: Presses de l'Université Laval, 123–193.
9123 Blondeau M. 2015b. Fabaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 2*.
9124 Québec, Québec: Presses de l'Université Laval, 295–327.
9125 Blondeau M. 2015c. Parnassiaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9126 *2*. Québec, Québec: Presses de l'Université Laval, 289–293.
9127 Blondeau M. 2015d. Polygonaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9128 *2*. Québec, Québec: Presses de l'Université Laval, 87–116.
9129 Blondeau M. 2015e. Ranunculaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9130 *2*. Québec, Québec: Presses de l'Université Laval, 27–80.

9131 Blondeau M. 2015f. Saxifragaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9132 *2*. Québec, Québec: Presses de l'Université Laval, 227–260.
9133 Blondeau M, and Cayouette J. 2002. La flore vasculaire de la Baie Wakeham et du havre
9134 Douglas, détroit d'Hudson, Nunavik, Québec. *Provancheria* 28:1–184.
9135 Blondeau M, and Louis-Marie H. 1985. La flore vasculaire d'Inukjuak, Nouveau-Québec.
9136 *Provancheria* 19:1–68.
9137 Bogler DJ. 2006. *Crepis* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of*
9138 *North America North of Mexico 19 Magnoliophyta: Asteridae (in part): Asteraceae, part*
9139 *1*. Oxford and New York: Oxford University Press, 222–239.
9140 Boivin B. 1983. Ernest Lepage and Artheme Dutilly, their travels and herbaria. *Taxon* 32:92–96.
9141 Bowden WM. 1957. Cytotaxonomy of section *Psammelymus* of the genus *Elymus*. *Canadian*
9142 *Journal of Botany* 35:951–993.
9143 Brand MJ. 1992. Samuel Hearne and the massacre at Bloody Falls. *Polar Record* 28:229–232.
9144 doi:10.1017/S0032247400020696
9145 Bremer K, and Humphries CJ. 1993. Generic monograph of the Asteraceae–Anthemideae.
9146 *Bulletin of the British Museum (Natural History) Botany* 23:71–177.
9147 Brooks RE, and Clemants SE. 2002. *Juncus* Linnaeus. In: Flora of North America Editorial
9148 Committee, ed. *Flora of North America North of Mexico 22 Magnoliophyta: Alismatidae,*
9149 *Arecidae, Commelinidae (in part), and Zingiberidae*. Oxford and New York: Oxford
9150 University Press, 211–255.
9151 Brouillet L. 2006a. *Eurybia* (Cassini) Cassini. In: Flora of North America Editorial Committee,
9152 ed. *Flora of North America North of Mexico 20 Magnoliophyta: Asteridae (in part):*
9153 *Asteraceae, part 2*. Oxford and New York: Oxford University Press, 365–382.
9154 Brouillet L. 2006b. *Hulteniella* Tzvelev. In: Flora of North America Editorial Committee, ed.
9155 *Flora of North America North of Mexico 19 Magnoliophyta: Asteridae (in part):*
9156 *Asteraceae, part 1*. Oxford and New York: Oxford University Press, 534–535.
9157 Brouillet L. 2006c. *Taraxacum* F.H. Wiggers. In: Flora of North America Editorial Committee,
9158 ed. *Flora of North America North of Mexico 19 Magnoliophyta: Asteridae (in part):*
9159 *Asteraceae, part 1*. Oxford and New York: Oxford University Press, 239–252.

9160 Brouillet L. 2006d. *Tripleurospermum* Schultz-Bipontinus. In: Flora of North America Editorial
9161 Committee, ed. *Flora of North America North of Mexico 19 Magnoliophyta: Asteridae*
9162 *(in part): Asteraceae, part 1*. Oxford and New York: Oxford University Press, 549–550.
9163 Brouillet L, Coursol F, Meades SJ, Favreau M, Anions M, Bélisle P, and Desmet P. 2010+.
9164 VASCAN, the Database of Vascular Plants of Canada. *Available at*
9165 *http://data.canadensys.net/vascan/*.
9166 Brouillet L, and Elvander PE. 2009a. *Micranthes* Haworth. In: Flora of North America Editorial
9167 Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae*
9168 *to Ericaceae*. Oxford and New York: Oxford University Press, 49–70.
9169 Brouillet L, and Elvander PE. 2009b. *Saxifraga* Linnaeus. In: Flora of North America Editorial
9170 Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae*
9171 *to Ericaceae*. Oxford and New York: Oxford University Press, 132–146.
9172 Brouillet L, and Selliah S. 2004. *Symphyotrichum pygmaeum*: transfer of *Eurybia pygmaea* from
9173 the euryboid grade to the subtribe Symphyotrichinae (Asteraceae: Asterae). *SIDA,*
9174 *contributions to botany* 21:1633–1635.
9175 Brouillet L, Semple JC, Allen GA, Chambers KL, and Sundberg SD. 2006. *Symphyotrichum*
9176 Nees. In: Flora of North America Editorial Committee, ed. *Flora of North America North*
9177 *of Mexico 20 Magnoliophyta: Asteridae (in part): Asteraceae, part 2*. Oxford and New
9178 York: Oxford University Press, 465–539.
9179 Bruneau HC. 1985. Séquence sédimentaire du secteur aval de la Rivière Coppermine, Territoires
9180 du Nord-Ouest. *Géographie physique et Quaternaire* 29:315–322.
9181 Brysting AK, Aiken SG, Lefkovitch LP, and Boles RL. 2003. *Dupontia* (Poaceae) in North
9182 America. *Canadian Journal of Botany* 81:769–779. 10.1139/b03-067
9183 Brysting AK, and Elven R. 2000. The *Cerastium alpinum-C. arcticum* complex
9184 (Caryophyllaceae): numerical analyses of morphological variation and a taxonomic
9185 revision of *C. arcticum* Lange s.l. *Taxon* 49:189–216. 10.2307/1223835
9186 Brysting AK, Fay MF, Leitch IJ, and Aiken SG. 2004. One or more species in the arctic grass
9187 genus *Dupontia*? - a contribution to the Panarctic Flora project. *Taxon* 53:365–382.
9188 http://dx.doi.org/10.2307%2F4135615

9189 Caccianiga M, and Payette S. 2006. Recent advance of white spruce (Picea glauca) in the coastal
9190 tundra of the eastern shore of Hudson Bay (Québec, Canada). *Journal of Biogeography*
9191 33:2120–2135. 10.1111/j.1365-2699.2006.01563.x
9192 Calder JA, and Savile DBO. 1960. Studies in Saxifragaceae. III. *Saxifraga odontoloma* and *lyalli*
9193 and North American subspecies of *S. punctata*. *Canadian Journal of Botany* 38:409–435.
9194 Callaghan TV, Björn LO, Chernov Y, Chapin T, Christensen TR, Huntley B, Ims RA, Johansson
9195 M, Jolly D, and Jonasson S. 2004. Biodiversity, distributions and adaptations of Arctic
9196 species in the context of environmental change. *AMBIO: A Journal of the Human*
9197 *Environment* 33:404–417.
9198 Cameron E. 2015. *Far Off Metal River: Inuit Lands, Settler Stories, and the Making of the*
9199 *Contemporary Arctic*. Vancouver: UBC Press.
9200 Canadian Geographical Names. 2015. Geographical Names Search. *Available at*
9201 *http://www.nrcan.gc.ca/earth-sciences/geography/place-names/search/9170*.
9202 CAVM Team. 2003. Circumpolar Arctic Vegetation Map. (1:7,500,000 scale). Conservation of
9203 Arctic Flora and Fauna (CAFF) Map No 1. Anchorage, Alaska: U.S. Fish and Wildlife
9204 Service.
9205 Cayouette J. 2004. A taxonomic review of the *Eriophorum russeolum–E. scheuchzeri* complex
9206 (Cyperaceae) in North America. *Sida* 21:791–814.
9207 Cayouette J, Blondeau M, and Catling PM. 1997. Pollen abortion in the *Ranunculus gmelinii—*
9208 *hyperboreus* group (Ranunculaceae, section *Hecatonia*) and its taxonomic implications.
9209 *Rhodora* 99:263-274. 10.2307/23313323
9210 Cayouette J, and Darbyshire S. 2007. *Arctophila* (Rupr.) Andersson. In: Barkworth ME, Capels
9211 KM, Long C, Anderton LK, and Piep MB, eds. *Flora of North America North of Mexico*
9212 *24 Magnoliophyta: Commelinidae (in part): Poaceae, part 1*. Oxford and New York:
9213 Oxford University Press, 605–607.
9214 Chambers KL, and Meyers SC. 2011. Nomenclatural changes for some taxa in the Oregon flora.
9215 *Journal of the Botanical Research Institute of Texas* 5:619–623.
9216 Cherniawsky DM, and Bayer RJ. 1998a. Systematics of North American *Petasites* (Asteraceae:
9217 Senecioneae). I. Morphometric analyses. *Canadian Journal of Botany* 76:23–36.
9218 10.1139/b97-152

9219 Cherniawsky DM, and Bayer RJ. 1998b. Systematics of North American *Petasites* (Asteraceae:
9220 Senecioneae). II. Isozyme analysis and population genetic structure. *Canadian Journal of*
9221 *Botany* 76:1476–1487. 10.1139/b98-151
9222 Cherniawsky DM, and Bayer RJ. 1998c. Systematics of North American *Petasites* (Asteraceae:
9223 Senecioneae). III. A taxonomic revision. *Canadian Journal of Botany* 76:2061–2075.
9224 doi:10.1139/b98-222
9225 Chery J. 2015. New nomenclature combinations in the green alder species complex (Betulaceae).
9226 *Phytokeys* 56:1–6. 10.3897/phytokeys.56.5225
9227 Chiapella JO, DeBoer VL, Amico GC, and Kuhl JC. 2011. A morphological and molecular study
9228 in the *Deschampsia cespitosa* complex (Poaceae; Poeae; Airinae) in northern North
9229 America. *American Journal of Botany* 98:1366–1380. 10.3732/ajb.1000495
9230 Chinnappa CC, and Morton JK. 1991. Studies on the *Stellaria longipes* complex
9231 (Caryophyllaceae) – Taxonomy. *Rhodora* 93:129–135.
9232 Chmielewski JG. 1994. The *Antennaria frieseana* (Asteraceae: Inuleae) polyploid complex:
9233 morphological variation in sexual and agamospermous taxa. *Canadian Journal of Botany*
9234 72:1018–1026. 10.1139/b94-128
9235 Chmielewski JG. 1997. A taxonomic revision of the *Antennaria media* (Asteraceae: Inuleae)
9236 polyploid species complex in western North America. *Brittonia* 49:309–327.
9237 10.2307%2F2807831
9238 Chmielewski JG. 1998. *Antennaria alpina* (Asteraceae: Inuleae): Revision of a misunderstood
9239 arctic-alpine polyploid species complex. *Rhodora* 100:39–68.
9240 Chmielewski JG, and Chinnappa CC. 1991. Gender dependent and independent morphological
9241 dimorphism in sexual and apomictic *Antennaria monocephala* sensu lato. *Canadian*
9242 *Journal of Botany* 69:1433–1448. 10.1139/b91-186
9243 Choi HJ, and Cota-Sánchez JH. 2010. A taxonomic revision of *Allium* (Alliaceae) in the
9244 Canadian prairie provinces. *Botany* 88:787–809.
9245 Christenhusz MJM. 2013. Twins are not alone: a recircumscription of *Linnaea* (Caprifoliaceae).
9246 *Phytotaxa* 125:25–32. 10.11646/phytotaxa.125.1.4
9247 Christenhusz MJM, Reveal JL, Farjon A, Gardner MF, Mill RR, and Chase MW. 2011a. A new
9248 classification and linear sequence of extant gymnosperms. *Phytotaxa* 19:55–70.
9249 10.11646/phytotaxa.19.1.3

9250 Christenhusz MJM, Zhang Z-C, and Schneider H. 2011b. A linear sequence of extant families
9251 and genera of lycophytes and ferns. *Phytotaxa* 19:7–54. 10.11646/phytotaxa.19.1.2
9252 Cody WJ. 1954a. New plant records from Bathurst Inlet, N.W.T. *Canadian Field-Naturalist*
9253 68:40.
9254 Cody WJ. 1954b. Plant records from Coppermine, Mackenzie District, N.W.T. *Canadian Field-*
9255 *Naturalist* 68:110–117.
9256 Cody WJ. 1978. Range extensions and comments on the vascular flora of the continental
9257 Northwest Territories. *Canadian Field-Naturalist* 92:144–150.
9258 Cody WJ. 1996a. Additions and range extensions to the vascular plant flora of the Northwest
9259 Territories. *Canadian Field-Naturalist* 110:260–270.
9260 Cody WJ. 1996b. *Flora of the Yukon Territory*. Ottawa, Ontario, Canada: National Research
9261 Councial (NRC) Press.
9262 Cody WJ. 2000. *Flora of the Yukon Territory. Second Edition*. Ottawa: NRC Research Press.
9263 Cody WJ, and Britton DM. 1989. *Ferns and Fern Allies of Canada*. Ottawa: Research Branch,
9264 Agriculture Canada.
9265 Cody WJ, and Johnston V. 2003. *Malaxis monophyllos* var. *brachypoda*, One-leaved Malaxis,
9266 new to the Northwest Territories, Canada. *Canadian Field-Naturalist* 117:302–303.
9267 Cody WJ, MacInnes J, Cayouette J, and Darbyshire SJ. 2000. Alien and invasive native vascular
9268 plants along the Norman Wells Pipeline, District of Mackenzie, Northwest Territories.
9269 *Canadian Field-Naturalist* 114:126–137.
9270 Cody WJ, and Porsild AE. 1968. Additions to the flora of continental Northwest Territories,
9271 Canada. *Canadian Field-Naturalist* 82:263–275.
9272 Cody WJ, and Reading KL. 2005. Additions and range extensions to the vascular plant flora of
9273 the continental Northwest Territories and Nunavut, Canada III. *Canadian Field-*
9274 *Naturalist* 119:276–290.
9275 Cody WJ, Reading KL, and Line JM. 2003. Additions and range extensions to the vascular plant
9276 flora of the continental Northwest Territories. *Canadian Field-Naturalist* 117:448–465.
9277 Cody WJ, Scotter GW, and Zoltai SC. 1984. Additions to the vascular plant flora of Bathurst
9278 Inlet, Northwest Territories. *Canadian Field-Naturalist* 98:171–177.
9279 Cody WJ, Scotter GW, and Zoltai SC. 1989. Vascular plant flora of the Wager Bay region,
9280 District of Keewatin, Northwest Territories. *Canadian Field-Naturalist* 103:551–559.

9281 Cody WJ, Scotter GW, and Zoltai SC. 1992. Vascular plant flora of the Melville Hills Region,
9282 Northwest Territories. *Canadian Field-Naturalist* 106:87–99.
9283 Cody WJ, and Talbot SS. 1978. Vascular plant range extensions to the Heart Lake Area, District
9284 of Mackenzie, Northwest Territories. *Canadian Field-Naturalist* 92:137–143.
9285 Consaul LL, and Aiken SG. 2007. *Phippsia* R.Br. In: Flora of North America Editorial
9286 Committee, ed. *Flora of North America North of Mexico 24 Magnoliophyta:*
9287 *Commelinidae (in part): Poaceae, part 1*. Oxford and New York: Oxford University
9288 Press, 478–480.
9289 Consaul LL, and Gillespie LJ. 2001. A re-evaluation of species limits in Canadian Arctic Island
9290 *Puccinellia* (Poaceae): resolving key characters. *Canadian Journal of Botany* 79:927–
9291 956.
9292 Cook MB, and Roland CA. 2002. Notable vascular plants from Alaska in Wrangle-St. Elias
9293 National Park and Preserve with comments on floristics *Canadian Field-Naturalist*
9294 116:192–304.
9295 Costea M, and Tardif FJ. 2003. Nomenclatural changes in the genus *Polygonum* section
9296 *Polygonum* (Polygonaceae). *SIDA, contributions to botany* 20:987–997.
9297 10.2307/41968137
9298 Costea M, and Tardif FJ. 2005. The biology of Canadian weeds. 131. *Polygonum aviculare* L.
9299 *Canadian Journal of Plant Science* 85:481–506.
9300 Costea M, Tardif FJ, and Hinds HR. 2003. *Polygonum* Linnaeus. In: Flora of North America
9301 Editorial Commitee, ed. *Flora of North America North of Mexico 5 Magnoliophyta:*
9302 *Caryophyllidae, part 2*. Oxford and New York: Oxford University Press, 547–571.
9303 Crins WJ. 2007. *Alopecurus* L. In: Barkworth ME, Capels KM, Long S, Anderton LK, and Piep
9304 MB, eds. *Flora of North America North of Mexico 24 Magnoliophyta: Commelinidae (in*
9305 *part): Poaceae, part 1*. Oxford and New York: Oxford University Press, 780–788.
9306 Crow GE. 2005. *Sagina* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of*
9307 *North America North of Mexico 5 Magnoliophyta: Caryophyllidae, part 2*. Oxford and
9308 New York Oxford University Press, 140–147.
9309 Crow GE. 2014. Lentibulariaceae. Flora of North America. Provisional Publication. Flora of
9310 North America Association. 27 October 2014. Available from

http://floranorthamerica.org/files/Lentibulariaceae%20provisional.pdf [accessed 29 January 2016].

Crow GF. 1978. A taxonomic revision of *Sagina* (Caryophyllaceae) in North America. *Rhodora* 80:1–91.

Czerepanov SK. 2007. *Vascular plants of Russia and adjacent states (the former USSR)*: Cambridge University Press.

Daniëls FJA, Bültmann H, Lünterbusch C, and Wilhelm M. 2000. Vegetation zones and biodiversity of the North-American Arctic. *Berichte der Reinhold-Tüxen-Gesellschaft* 12:131–151.

Darbyshire SJ, and Pavlick LE. 2007. *Festuca* L. In: Barkworth ME, Capels KM, Long S, Anderton LK, and Piep MB, eds. *Flora of North America North of Mexico 24 Magnoliophyta: Commelinidae (in part): Poaceae, part 1*. Oxford and New York: Oxford University Press, 389–443.

Dauphin B, Vieu J, and Grant JR. 2014. Molecular phylogenetics supports widespread cryptic species in moonworts (*Botrychium* s.s., Ophioglossaceae). *American Journal of Botany* 101. 10.3732/ajb.1300154

Davis JA, and Consaul LL. 2007. *Puccinellia* Parl. In: Barkworth ME, Capels KM, Long S, Anderton LK, and Piep MB, eds. *Flora of North America North of Mexico 24 Magnoliophyta: Commelinidae (in part): Poaceae, part 1*. Oxford and New York: Oxford University Press, 459–477.

Davis JD, and Banack SA. 2012. Ethnobotany of the Kiluhikturmiut Inuinnait of Kugluktuk, Nunavut, Canada. *Ethnobiology Letters* 3:78–90.

de Groot WJ, Thomas PA, and Wein RW. 1997. *Betula nana* L. and *Betula glandulosa* Michx. *Journal of Ecology and Field Biology* 85:241–264.

Deshaye J. 1983. La flore vasculaire de l'Île Ivik, Baie d'Ungava (T.N.-O). *Provancheria* 15:1–31.

Deshaye J, Cayouette J, and Louis-Marie H. 1988. La flore vasculaire des îles et de la presqu'île de Manitounuk, baie d'Hudson: structure phytogéographique et interprétation bioclimatique. *Provancheria* 21:1–74.

Dignard N. 2013a. Cystopteridaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 1*. Québec, Québec: Presses de l'Université Laval, 175–184.

9342 Dignard N. 2013b. Dryopteridaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9343 *1*. Québec, Québec: Presses de l'Université Laval, 209–221.
9344 Dignard N. 2013c. Equisetaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 1*.
9345 Québec, Québec: Presses de l'Université Laval, 157–170.
9346 Dignard N. 2013d. Lycopodiaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9347 *1*. Québec, Québec: Presses de l'Université Laval, 109–130.
9348 Dignard N. 2013e. Ophioglossaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9349 *1*. Québec, Québec: Presses de l'Université Laval, 141–156.
9350 Dignard N. 2013f. Pinaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 1*.
9351 Québec, Québec: Presses de l'Université Laval, 227–243.
9352 Dignard N. 2013g. Woodsiaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 1*.
9353 Québec, Québec: Presses de l'Université Laval, 193–200.
9354 Dillenberger MS, and Kadereit JW. 2014. Maximum polyphyly: Multiple origins and
9355 delimitation with plesiomorphic characters require a new circumscription of *Minuartia*
9356 (Caryophyllaceae). *Taxon* 63:64–88. 10.12705/631.5
9357 Dion L, Cayouette J, and Deshaye J. 1999. La flore vasculaire de la région des monts d'Youville
9358 et de Puvirnituk, Nunavik, Québec Nordique. *Provancheria* 27:1–72.
9359 Douglas GM. 1914. *Lands Forlorn: A story of an expedition to Hearne's Coppermine River*.
9360 New York and London: G.P. Putnam's Sons.
9361 Dredge LA. 2001. Where the river meets the sea: Geology and landforms of the lower
9362 Coppermine River valley and Kugluktuk, Nunavut. *Geological Survey of Canada*
9363 *Miscellaneous Report* 69:1–76.
9364 Dugle JR. 1966. A taxonomic study of western Canadian species in the genus *Betula*. *Canadian*
9365 *Journal of Botany* 44:929–1066. 10.1139/b66-106
9366 Dunlop DA. 2002. *Carex* Linnaeus sect. *Scirpinae* (Tuckerman) Kükenthal. In: Flora of North
9367 America Editorial Committee, ed. *Flora of North America North of Mexico 23*
9368 *Magnoliophyta: Commelinidae (in part): Cyperaceae*. Oxford and New York: Oxford
9369 University Press, 549–553.
9370 Dunlop DA, and Crow GE. 1999. The taxonomy of *Carex* section *Scirpinae* (Cyperaceae).
9371 *Rhodora* 101:163–199.

9372 Ebihara A, Nitta JH, and Ito M. 2010. Molecular species identification with rich floristic
9373 sampling: DNA barcoding the pteridophyte flora of Japan. *PLoS ONE* 5:e15136.
9374 10.1371/journal.pone.0015136
9375 Ecological Stratification Working Group. 1995. A National Ecological Framework for Canada.
9376 Agriculture and Agri-Food Canada, Research Branch, Centre for Land and Biological
9377 Resources Research and Environment Canada, State of the Environment Directorate,
9378 Ecozone Analysis Branch, Ottawa/Hull. Report and national map at 1:7 500 000 scale.,
9379 125.
9380 Edlund S. 1990. Bioclimatic zones in the Canadian Arctic archipelago. In: Harrington CR, ed.
9381 *Canada's missing dimension: science and history in the Canadian Arctic Islands*.
9382 Ottawa: Canadian Museum of Nature, 421–441.
9383 Egger JM. 2008. Nomenclatural changes and selected lectotypifications in *Castilleja*
9384 (Orobanchaceae). *Phytologia* 90:63–82.
9385 Eidesen PB, Alsos IG, Popp M, Stensrud Ø, Suda J, and Brochmann C. 2007. Nuclear vs. plastid
9386 data: complex Pleistocene history of a circumpolar key species. *Molecular Ecology*
9387 16:3902–3925. 10.1111/j.1365-294X.2007.03425.x
9388 Eidesen PB, Ehrich D, Bakkestuen V, Alsos IG, Gilg O, Taberlet P, and Brochmann C. 2013.
9389 Genetic roadmap of the Arctic: plant dispersal highways, traffic barriers and capitals of
9390 diversity. *New Phytologist* 200:898-910. 10.1111/nph.12412
9391 Elvebakk A. 1999. Delimitation, zonal and sectorial subdivision of the Arctic for the Panarctic
9392 Flora project. In: Nordal I, and Razzhivin VY, eds. *The Species Concept in the High*
9393 *North – A Panarctic Flora Initiative*. Oslo: The Norwegian Academy of Science and
9394 Letters, 375–386.
9395 Elven R, and Al-Shehbaz IA. 2008. *Draba simmonsii* (Brassicaceae), a new species of the *D.*
9396 *micropetala* complex from the Canadian Arctic Archipelago. *Novon: A Journal for*
9397 *Botanical Nomenclature* 18:325–329. doi:10.3417/2007178
9398 Elven R, Ertter B, Murray DF, and Reveal JL. 2014a. *Potentilla* Linnaeus sect. *Aureae*
9399 (Rydberg) Juzepczuk. In: Flora of North America Editorial Committee, ed. *Flora of*
9400 *North America North of Mexico 9 Magnoliophyta: Picramniaceae to Rosaceae*. Oxford
9401 and New York: Oxford University Press, 188–195.

9402 Elven R, and Murray DF. 2008. New combinations in the Panarctic vascular plant flora. *Journal*
9403 *of the Botanical Research Institute of Texas* 2:433–446.
9404 Elven R, and Murray DF. 2014. *Potentilla* Linnaeus sect. *Pentaphylloides* Tausch. In: Flora of
9405 North America Editorial Committee, ed. *Flora of North America North of Mexico 9*
9406 *Magnoliophyta: Picramniaceae to Rosaceae*. Oxford and New York: Oxford University
9407 Press, 126–130.
9408 Elven R, Murray DF, and Ertter B. 2014b. *Potentilla* Linnaeus sect. *Biflorae* (Rydberg) O.
9409 Stevens. In: Flora of North America Editorial Committee, ed. *Flora of North America*
9410 *North of Mexico 9 Magnoliophyta: Picramniaceae to Rosaceae*. Oxford and New York:
9411 Oxford University Press, 130–131.
9412 Elven R, Murray DF, and Ertter B. 2014c. *Potentilla* Linnaeus sect. *Niveae* (Rydberg) A. Nelson.
9413 In: Flora of North America Editorial Committee, ed. *Flora of North America North of*
9414 *Mexico 9 Magnoliophyta: Picramniaceae to Rosaceae*. Oxford and New York: Oxford
9415 University Press, 195–205.
9416 Elven R, Murray DF, Razzhivin VY, and Yurtsev BA. 2011. Annotated checklist of the
9417 Panarctic Flora (PAF): Vascular plants version 1.0. *Available at http://nhm2.uio.no/paf*.
9418 Elven R, Murray DF, and Solstad H. 2010. To arter av kastanjesiv (*Juncus castaneus* or *Juncus*
9419 *leucochlamys*), begge i Europa. *Blyttia* 68:128–131.
9420 Elven R, Murray DF, and Solstad H. 2012. *Hippuris* Linnaeus (Plantaginaceae). Flora of North
9421 America, Provisional Publication. Flora of North America Association. 12 March 2012.
9422 *Available at*
9423 *http://floranorthamerica.org/files/Hippuris03h.CH%20for%20Prov%20Pub.pdf*
9424 (accessed 15 April 2015).
9425 Emadzade K, Lehnebach C, Lockhart P, and Hörandl E. 2010. A molecular phylogeny,
9426 morphology and classification of genera of Ranunculeae (Ranunculaceae). *Taxon*
9427 59:809–828.
9428 Enke N. 2009. Contributions towards a revised infrageneric classification of *Crepis* (Cichorieae,
9429 Compositae). *Willdenowia* 39:229–249. http://dx.doi.org/10.3372%2Fwi.39.39202
9430 Environment Canada. 2015. Historical Climate Data. *Available at*
9431 *http://climate.weather.gc.ca/index_e.html#access* (accessed 24 November 2015).

9432 Ertter B, and Reveal JL. 2014a. *Comarum* Linnaeus. In: Flora of North America Editorial
9433 Committee, ed. *Flora of North America North of Mexico 9 Magnoliophyta:*
9434 *Picramniaceae to Rosaceae*. Oxford and New York: Oxford University Press, 300–301.
9435 Ertter B, and Reveal JL. 2014b. *Dasiphora* Rafinesque. In: Flora of North America Editorial
9436 Committee, ed. *Flora of North America North of Mexico 9 Magnoliophyta:*
9437 *Picramniaceae to Rosaceae*. Oxford and New York: Oxford University Press, 295–297.
9438 Farjon A, and Filer D. 2013. *An Atlas of the World's Conifers: An Analysis of their Distribution,*
9439 *Biogeography, Diversity and Conservation Status. Third edition*: Brill.
9440 Farrar DR. 2011. Moonwort (*Botrychium*) systematics. *Available at*
9441 *www.public.iastate.edu/~herbarium/botrychium.html* (accessed 28 January 2016).
9442 Farrar JL. 1995. *Trees in Canada*. Markham, Ottawa: Fitzhenry & Whiteside Limited and
9443 Natural Resources Canada.
9444 Ferren Jr. WR, and Schenk HJ. 2004. *Suaeda* Forsskål ex J. F. Gmelin In: Flora of North
9445 America Editorial Committee, ed. *Flora of North America North of Mexico 4*
9446 *Magnoliophyta: Caryophyllidae, part 1*. Oxford and New York: Oxford University Press,
9447 390–398.
9448 Ford BA. 1997. *Caltha* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of*
9449 *North America North of Mexico 3 Magnoliophyta: Magnoliidae and Hamamelidae*.
9450 Oxford and New York: Oxford University Press, 187–189.
9451 Ford BA, and Ball PW. 1992. The taxonomy of the circumpolar short-beaked taxa of *Vesicariae*
9452 (Cyperaceae). *Systematic Botany* 17:620–639. 10.2307%2F2419731
9453 Franklin J. 1823. *Narrative of a journey to the shores of the polar sea in the years 1819, 20, 21*
9454 *and 22, with an appendix on various subjects relating to science and natural history*.
9455 London: John Murray.
9456 Franklin J. 1828. *Narrative of a second expedition to the shores of the polar sea, in the years*
9457 *1825, 1826, and 1827, by John Franklin ... , including an account of the progress of a*
9458 *detachment to the eastward by John Richarson ... surgeon and naturalist to the*
9459 *expedition*. Philadelphi: Carey, Lea, and Carey.
9460 Freeman CC. 2009a. *Orthilia* Rafinesque. In: Flora of North America Editorial Committee, ed.
9461 *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae to Ericaceae*.
9462 Oxford and New York: Oxford University Press, 388–389.

9463 Freeman CC. 2009b. *Pyrola* Linnaeus. In: Flora of North America Editorial Committee, ed.
9464 *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae to Ericaceae*.
9465 Oxford and New York: Oxford University Press, 378–384.
9466 Freeman CC, and Levsen N. 2007. *Chrysosplenium* Linnaeus. In: Flora of North America
9467 Editorial Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta:*
9468 *Paeoniaceae to Ericaceae*. Oxford and New York: Oxford University Press, 70–75.
9469 Friesen N. 1996. A taxonomic and chorological revision of the genus *Allium* sect.
9470 *Schoenoprasum* Dumort. *Candollea* 51:461–473.
9471 Funk V, Hollowell T, Berry P, Kelloff C, and Alexander SN. 2007. Checklist of the plants of the
9472 Guiana Shield (Venezuela: Amazonas, Bolivar, Delta Amacuro; Guyana, Surinam,
9473 French Guiana). *Contributions from the United States National Herbarium* 55:1–584.
9474 Furlow JJ. 1979. The systematics of the American species of *Alnus* (Betulaceae). *Rhodora* 81:1–
9475 121, 151–248.
9476 Furlow JJ. 1997. Betulaceae Gray. In: Flora of North America Editorial Committee, ed. *Flora of*
9477 *North America North of Mexico 3 Magnoliophyta: Magnoliidae and Hamamelidae*.
9478 Oxford and New York: Oxford University Press, 507–538.
9479 Garneau M. 2013a. Potamogetonaceae. In: Payette S, ed. *Flore nordique du Québec et du*
9480 *Labrador 1*. Québec, Québec: Presses de l'Université Laval, 281–305.
9481 Garneau M. 2013b. Sparganiaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador*
9482 *1*. Québec, Québec: Presses de l'Université Laval, 369–379.
9483 Garneau M. 2015a. Betulaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 2*.
9484 Québec, Québec: Presses de l'Université Laval, 429–463.
9485 Garneau M. 2015b. Haloragaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 2*.
9486 Québec, Québec: Presses de l'Université Laval, 269–283.
9487 Garon-Labrecque M-E, Léveillé-Bourret É, Higgins K, and Sonenetag O. 2015 [2016]. Additions
9488 to the boreal flora of the Northwest Territories with a preliminary vascular flora of Scotty
9489 Creek. *Canadian Field-Naturalist* 129:349–367.
9490 Gauthier R. 2013. Tofieldiaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 1*.
9491 Québec, Québec: Presses de l'Université Laval, 259–266.

9492 Gebauer S, Röser M, and Hoffmann MH. 2015. Molecular phylogeny of the species-rich *Carex*
9493 sect. *Racemosae* (Cyperaceae) based on four nuclear and chloroplast markers. *Systematic*
9494 *Botany* 40:433–447. 10.1600/036364415X688303
9495 Geurts M-A. 1983. Relations entre spectres polliniques contemporains et topographie dans la
9496 vallée de la Coppermine, Territoires du Nord-Ouest. *Canadian Journal of Botany*
9497 61:586–593.
9498 Gillespie LJ, Saarela JM, Sokoloff PC, and Bull RD. 2015. New vascular plant records for the
9499 Canadian Arctic Archipelago. *Phytokeys* 52:23–79. 10.3897/phytokeys.52.8721
9500 Gillett JM. 1957. A revision of the North American species of *Gentianella* Moench. *Annals of*
9501 *the Missouri Botanical Garden* 44:195–269.
9502 Gillett JM. 1963. *The gentians of Canada, Alaska, and Greenland*. Ottawa: Research Branch,
9503 Canada Department of Agriculture.
9504 Global *Carex* Group. 2015. Making *Carex* monophyletic (Cyperaceae, tribe Cariceae): a new
9505 broader circumscription. *Botanical Journal of the Linnean Society* 179:1–42.
9506 10.1111/boj.12298
9507 Gould WA, and Walker MD. 1997. Landscape-scale patterns in plant species richness along an
9508 arctic river. *Canadian Journal of Botany* 75:1748–1765. 10.1139/b97-889
9509 Gould WA, and Walker MD. 1999. Plant communities and landscape diversity along a Canadian
9510 Arctic river. *Journal of Vegetation Science* 10:537–548. 10.2307/3237188
9511 Greuter W, and Raab-Straube EV. 2011. Euro+Med Notulae, 5. *Willdenowia* 41:129–138.
9512 10.3372/wi.41.41117
9513 Gussow WC. 1933. Contributions to the knowledge of the flora of North Manitoba and the
9514 North-Western Territories, Dominion of Canada. *Canadian Field-Naturalist* 47:116–119.
9515 Haines A, Farnsworth E, Morrison G, and New England Wild Flower Society. 2011. *New*
9516 *England Wild Flower Society's Flora Novae Angliae: A manual for the identification of*
9517 *native and naturalized higher vascular plants of New England*: Yale University Press.
9518 Hämet-Ahti L. 1980a. *Juncus alpinoarticulatus* subsp. *fischeranus*, an overlooked plant in boreal
9519 Eurasia. *Memoranda Societatis pro Fauna et Flora Fennica* 56:97–102.
9520 Hämet-Ahti L. 1980b. *Juncus alpinoarticulatus:* The legitimate name for *Juncus alpinus*.
9521 *Annales Botanici Fennici* 17:341–342.

9522 Hämet-Ahti L. 1986. North American races of *Juncus alpinoarticulatus* (Juncaceae). *Annales*
9523 *Botanici Fennici* 23:277-281. 10.2307/23726196
9524 Hanbury DT. 1904. *Sport and Travel in the Northland of Canada*. London: Edward Arnold.
9525 Harbaugh-Reynaud D, Nepokroeff M, Rabeler RK, McNeill J, Zimmer EA, and Wagner WL.
9526 2010. A new lineage-based tribal classification of the family Caryophyllaceae.
9527 *International Journal of Plant Sciences* 171:185–198. 10.1086/648993
9528 Hardle DC, and Hutchings JA. 2010. Evolutionary ecology at the extremes of species' ranges.
9529 *Environmental Reviews* 18. 10.1139/A09-014
9530 Harris JG. 1985. A revision of the genus *Braya* (Cruciferae) in North AmericaPh.D. thesis.
9531 University of Alberta.
9532 Harris JG. 2006. Five new subspecies of *Braya* (Brassicaceae) from Canada. *Novon* 16:344–353.
9533 10.3417/1055-3177(2006)16[344:FNSOBB]2.0.CO;2
9534 Harris JG. 2010. *Braya* Sternberg & Hoppe. In: Flora of North America Editorial Committee, ed.
9535 *Flora of North America North of Mexico 7 Magnoliophyta: Salicaceae to Brassicaceae*.
9536 Oxford and New York: Oxford University Press, 546–552.
9537 Harrison K, and Hebda RJ. 2011. A morphometric analysis of variation between *Elymus*
9538 *alaskanus* and *Elymus violaceus* (Poaceae): implications for recognition of taxa.
9539 *Madrono* 58:32–49. 10.3120/0024-9637-58.1.32
9540 Hartman RL, Rabeler RI, and Utech FH. 2005. *Eremogone* Fenzl. In: Flora of North America
9541 Editorial Committee, ed. *Flora of North America North of Mexico 5 Magnoliophyta:*
9542 *Caryophyllidae, part 2*. Oxford and New York: Oxford University Press, 56–70.
9543 Harvey MJ. 2007. *Agrostis* L. In: Barkworth ME, Capels KM, Long S, Anderton LK, and Piep
9544 MB, eds. *Flora of North America North of Mexico 24 Magnoliophyta: Commelinidae (in*
9545 *part): Poaceae, part 1*. New York: Oxford University Press, 633–662.
9546 Hauk WD. 1995. A molecular assessment of relationships among cryptic species of *Botrychium*
9547 subgenus *Botrychium* (Ophioglossaceae). *American Fern Journal*:375–394.
9548 Hauk WD, Kennedy L, and Hawke HM. 2012. A phylogenetic investigation of *Botrychium* s. s.
9549 (Ophioglossaceae): Evidence from three plastid DNA sequence datasets. *Systematic*
9550 *Botany* 37:320–330. 10.1600/036364412X635377

9551 Hauke R. 1993. *Equisetum* Michaux ex DeCandolle. In: Flora of North America Editorial
9552 Commitee, ed. *Flora of North America North of Mexico 2 Pteridophytes and*
9553 *Gymnosperms*. Oxford and New York: Oxford University Press, 76–84.
9554 Hay SG. 2013. Juncaginaceae. In: Payette S, Garneau M, and Damboise K, eds. *Flore nordique*
9555 *du Québec et du Labrador 1*. Québec: Presses de l'Université Laval, 275–279.
9556 Hay SG, and Payette S. 2013. Juncaceae. In: Payette S, ed. *Flore nordique du Québec et du*
9557 *Labrador 1*. Québec, Québec Presses de l'Université Laval, 381–421.
9558 Haynes RR, and Hellquist CB. 2000a. Juncaginaceae Richard. In: Flora of North America
9559 Editorial Committee, ed. *Flora of North America North of Mexico 22 Magnoliophyta:*
9560 *Alismatidae, Arecidae, Commelinidae (in part), and Zingiberidae*. Oxford and New
9561 York: Oxford University Press, 43–46.
9562 Haynes RR, and Hellquist CB. 2000b. Potamogetonaceae Dumortier. In: Flora of North America
9563 Editorial Committee, ed. *Flora of North America North of Mexico 22 Magnoliophyta:*
9564 *Alismatidae, Arecidae, Commelinidae (in part), and Zingiberidae*. Oxford and New
9565 York: Oxford University Press, 47–74.
9566 Hearne S. 1795. *A journey from Prince of Wales's Fort in Hudson's Bay, to the Northern Ocean.*
9567 *Undertaken by order of the Hudson's Bay Company, for the discovery of copper mines, a*
9568 *northwest passage, &c., in the years 1769, 1770, 1771, & 1772*. London: A. Strahan and
9569 T. Cadell.
9570 Hedberg KO. 1992. Taxonomic differentiation in *Saxifraga hirculus* L. (Saxifragaceae)–a
9571 circumpolar Arctic-Boreal species of Central Asiatic origin. *Botanical Journal of the*
9572 *Linnean Society* 109:377–393. 10.1111/j.1095-8339.1992.tb00280.x
9573 Hedberg O. 1997. The genus *Koenigia* L. emend. Hedberg (Polygonaceae). *Botanical Journal of*
9574 *the Linnean Society* 124:295–330. 10.1111/j.1095-8339.1997.tb01999.x
9575 Hodgins BW, and Hoyle G. 1997. *Canoeing north into the unknown: A record of river travel,*
9576 *1874 to 1974*: Dundurn.
9577 Holm T. 1922. Contributions to the morphology, synonymy, and geographical distribution of
9578 arctic plants. *Report of the Canadian Arctic Expedition 1913-18 Volume 5, Botany: Part*
9579 *B*:1B–135B.
9580 Hooker WJ. 1840. *Flora boreali-americana, or, the botany of the northern parts of British*
9581 *America: compiled principally from the plants collected by Dr. Richardson & Mr.*

Drummond on the late northern expeditions, under command of Captain Sir John Franklin, R.N. To which are added (by permission of the Horticultural society of London,) those of Mr. Douglas, from north-west America, and of other naturalists. Volume 2, Part 12. London: H.G. Bohn.

Hörandl E, Paun O, Johansson JT, Lehnebach C, Armstrong T, Chen L, and Lockhart PJ. 2005. Phylogenetic relationships and evolutionary traits in *Ranunculus* s.l. (Ranunculaceae) inferred from ITS sequence analysis. *Molecular Phylogenetics and Evolution* 36:305–327. http://dx.doi.org/10.1016/j.ympev.2005.02.009

Houle G. 2013. Orchidaceae. In: Payette S, ed. *Flore nordique du Québec et du Labrador 1*. Québec, Québec: Presses de l'Université Laval, 321–343.

Houston CS. 1984. Arctic Ordeal: The journal of John Richardson surgeon-naturalist with Franklin 1820-1822. Kingston and Montreal: McGill-Queen's University Press. p 349.

Hultén E. 1968. *Flora of Alaska and neighbouring territories: a manual of the vascular plants*. Stanford, California: Stanford University Press.

Hultén E. 1971. The circumpolar plants. II. Dicotyledons. *Kongliga Svenska Vetenskaps-Akademiens Handlingar* 13:1–463.

Jacobs JD, Headley AN, Maus LA, Mode WN, and Sinmms EL. 1997. Climate and vegetation of the interior lowlands of southern Baffin Island: Long-term stability at the Low Arctic limit. *Arctic* 50:167–177.

Järvinen P, Palmé A, Orlando Morales L, Lännenpää M, Keinänen M, Sopanen T, and Lascoux M. 2004. Phylogenetic relationships of *Betula* species (Betulaceae) based on nuclear ADH and chloroplast *matK* sequences. *American Journal of Botany* 91:1834–1845. 10.3732/ajb.91.11.1834

Jenness SE. 2011. *Stefansson, Dr. Anderson and the Canadian Arctic Expedition, 1913-1918: A story of exploration, science and sovereignty*: Canadian Museum of Civilization.

Johansen F. 1919. The forest's losing fight in Arctic Canada. *Canadian Forestry Journal* 15:303–306.

Johansen F. 1924. General observations on the vegetation. *Report of the Canadian Arctic Expedition 1913-18, Volume V: Botany, Part C*:1c–85c.

9611 Jørgensen MH, Elven R, Tribsch A, Gabrielsen TM, Stedje B, and Brochmann C. 2006.
9612 Taxonomy and evolutionary relationships in the *Saxifraga rivularis* complex. *Systematic*
9613 *Botany* 31:702–729.
9614 Judd WS, and Kron KA. 2009. *Rhododendron* Linnaeus. In: Flora of North America Editorial
9615 Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae*
9616 *to Ericaceae*. Oxford and New York: Oxford University Press, 455–473.
9617 Jukonienė I, Dobravolskaitė R, and Sendžikaitė J. 2012. Characteristics of atypical *Huperzia*
9618 *selago* subsp. *arctica* habitats to the south of distribution area. *Acta Societatis*
9619 *Botanicorum Poloniae* 18. http://dx.doi.org/10.5586/asbp.2012.016
9620 Kalela A. 1944. Systematische und pflanzengeographische studien an der *Carex* Subsektion
9621 *Alpinae* Kalela. *Annales Botanici Societatis Zoologicae-Botanicae Fennicae "Vanamo"*
9622 19:1–218.
9623 Kaplan DR. 2008. A taxonomic revision of *Stuckenia* (Potamogetonaceae) in Asia, with notes on
9624 the diversity and variation of the genus on a worldwide scale. *Folia Geobotanica* 43:159–
9625 234. 10.1007/s12224-008-9010-0
9626 Kaul RB. 1997. Sparganiaceae. In: Flora of North America Editorial Committee, ed. *Flora of*
9627 *North America North of Mexico 22 Magnoliophyta: Alismatidae, Arecidae,*
9628 *Commelinidae (in part), and Zingiberidae*. Oxford and New York: Oxford University
9629 Press, 271–277.
9630 Keil DJ. 2006. *Saussurea* de Candolle. In: Flora of North America Editorial Committee, ed.
9631 *Flora of North America North of Mexico 19 Magnoliophyta: Asteridae (in part):*
9632 *Asteraceae, part 1*. Oxford and New York: Oxford University Press, 165–168.
9633 Kelso S. 1991. Taxonomy of *Primula* sects. *Aleuritia* and *Armerina* in North America. *Rhodora*
9634 93.
9635 Kelso S. 2009. *Androsace* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora*
9636 *of North America North of Mexico 8 Magnoliophyta: Paeoniaceae to Ericaceae*. Oxford
9637 and New York: Oxford University Press, 259–263.
9638 Kirschner J. 2002a. Species Plantarum. Flora of the World. Part 7. Juncaceae 2: *Juncus* subg.
9639 *Juncus*. Canberra, Australia: ABRS. p 1–336.
9640 Kirschner J. 2002b. *Species Plantarum: Flora of the World. Part 8. Juncaceae: Juncus subg.*
9641 *Agathryon*. Canberra, Australia: ABRS.

9642 Klackenberg J. 1983. The holarctic complex *Potentilla fruticosa*. *Nordic Journal of Botany*
9643 3:181–191. 10.1111/j.1756-1051.1983.tb01061.x
9644 Knaben G. 1959. On the evolution of the *radicatum*-group of the Scapiflora Papavers as studied
9645 in 70 and 56 chromosome species. Part B. Experimental studies. *Opera Botanica* 3:1–96.
9646 Korol JB. 1992. The vascular plant flora of Rankin Inlet, District of Keewatin, Northwest
9647 Territories. *Canadian Field-Naturalist* 106:342–347.
9648 Kress WJ, Erickson DL, Jones FA, Swenson NG, Perez R, Sanjur O, and Bermingham E. 2009.
9649 Plant DNA barcodes and a community phylogeny of a tropical forest dynamics plot in
9650 Panama. *Proceedings of the National Academy of Sciences* 106:18621–18626.
9651 10.1073/pnas.0909820106
9652 Kuzmina ML, Johnson KL, Barron HR, and Hebert PDN. 2012. Identification of the vascular
9653 plants of Churchill, Manitoba, using a DNA barcode library. *BMC Ecology* 12.
9654 10.1186/1472-6785-12-25
9655 Kwiatkowski P. 1999. The distribution of *Allium schoenoprasum* L. subsp. *sibiricum* (L.) Hartm.
9656 in Poland. *Acta Societatis Botanicorum Poloniae* 68:149–156. 10.5586/asbp.1999.021
9657 Lefèbvre C, and Vekemans X. 1995. A numerical taxonomic study of *Armeria maritima*
9658 (Plumbaginaceae) in North America and Greenland. *Canadian Journal of Botany*
9659 73:1583–1595. 10.1139/b95-171
9660 Lefèbvre C, and Vekemans X. 2005. *Armeria* Willdenow. In: Flora of North America Editorial
9661 Committee, ed. *Flora of North America North of Mexico 5 Magnoliophyta:*
9662 *Caryophyllidae, part 2*. Oxford and New York: Oxford University Press, 603–605.
9663 Legler BS. 2010. Additions to the vascular flora of New Mexico. *Journal of the Botanical*
9664 *Research Institute of Texas* 4:777–784.
9665 Léveillé-Bourret É, Bailleul SM, Cayouette J, and Joly S. 2014. Testing hybridization
9666 hypotheses with morphometry: The case of eastern american arctic species of *Potentilla*
9667 sect. *Niveae* (Rosaceae). *Systematic Botany* 39:193–204. 10.1600/036364414x678017
9668 Levin RA, Wagner WL, Hoch PC, Nepokroeff M, Pires JC, Zimmer EA, and Sytsma KJ. 2003.
9669 Family-level relationships of Onagraceae based on chloroplast *rbcL* and *ndhF* data.
9670 *American Journal of Botany* 90:107–115. 10.3732/ajb.90.1.107
9671 Li J, Shoup S, and Chen Z. 2005. Phylogenetics of *Betula* (Betulaceae) inferred from sequences
9672 of nuclear ribosomal DNA. *Rhodora* 107:69–86. 10.3119/04-14.1

9673 Li J, Shoup S, and Chen Z. 2007. Phylogenetic relationships of diploid species of *Betula*
9674 (Betulaceae) inferred from DNA sequences of nuclear nitrate reductase. *Systematic*
9675 *Botany* 32:357–365. 10.1600/036364407781179699
9676 Linnaeus C. 1771. *Mantissa plantarum: Generum editionis VI. et specierum editionis II*.
9677 Stockholm: Laurentius Salvius.
9678 Macoun JM, and Holm T. 1921. Report of the Canadian Arctic Expedition 1913-18, Volume V:
9679 Botany, Part A: Vascular Plants.1A–50A.
9680 Malte MO. 1934. Critical notes on plants of Arctic America. *Rhodora* 36:172–193.
9681 Marr KL, Hebda RJ, and Greene CW. 2007. *Calamagrostis* Adans. In: Barkworth ME, Capels
9682 KM, Long S, Anderton LK, and Piep MB, eds. *Flora of North America North of Mexico*
9683 *24 Magnoliophyta: Commelinidae (in part): Poaceae, part 1*. Oxford and New York:
9684 Oxford University Press, 706–732.
9685 McGhee R. 1970. Excavations at Bloody Falls, N.W.T., Canada. *Arctic Anthropology* 6:53–72.
9686 10.2307/40315704
9687 McJannet CL, Argus GW, Edlund SA, and Cayouette J. 1993. Rare vascular plants in the
9688 Canadian Arctic. *Syllogeus* 72:1–79.
9689 McNeal DW, and Jacobsen TD. 2002. *Allium* Linnaeus. In: Flora of North America Editorial
9690 Commitee, ed. *Flora of North America Volume 26*. Oxford and New York: Oxford
9691 University Press, 224–276.
9692 McNeill J, Barrie FR, Burdet HM, Demoulin V, Greuter W, Hawksworth DL, Herendeen PS,
9693 Knapp S, Marhold K, Prado J, Prud'homme van Reine WF, Smith GF, Wiersema JH, and
9694 Turland NJ. 2012. International Code of Nomenclature for algae, fungi, and plants
9695 (Melbourne Code). Regnum Vegetabile 154. Koeltz Scientific Books. p 208.
9696 Mincemoyer S. 2013. Checklist of Montana Vascular Plants: Dated June 3, 2013. *Available at*
9697 *http://mtnhp.org/docs/060313_MT_Plant_List.pdf* (accessed 6 March 2015).
9698 Molau U, and Murray DF. 1996. Taxonomic revision of the *Pedicularis sudetica* complex
9699 (Scrophulariaceae): the Arctic species. *Symbolae Botanicae Upsalienses* 31:33–46.
9700 Morrison D. 1981. A preliminary statement on Neo-Eskimo occupations in western Coronation
9701 Gulf, N.W.T. *Arctic* 34:261–269.

9702 Morton JK. 2005a. *Cerastium* Linnaeus. In: Flora of North America Editorial Committee, ed.
9703 *Flora of North America North of Mexico 5 Magnoliophyta: Caryophyllidae, part 2*.
9704 Oxford and New York: Oxford University Press, 74–93.
9705 Morton JK. 2005b. *Silene* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora*
9706 *of North America North of Mexico 5 Magnoliophyta: Caryophyllidae, part 2*. Oxford and
9707 New York: Oxford University Press, 166–214.
9708 Morton JK. 2005c. *Stellaria* Linnaeus. In: Flora of North America Editorial Committee, ed.
9709 *Flora of North America North of Mexico 5 Magnoliophyta: Caryophyllidae, part 2*.
9710 Oxford and New York: Oxford University Press, 96–114.
9711 Morton JK, and Rabeler RI. 1989. Biosystematic studies on the *Stellaria calycantha*
9712 (Caryophyllaceae) complex. I. Cytology and cytogeography. *Canadian Journal of Botany*
9713 67:121–127. 10.1139/b89-018
9714 Mosquin T. 1966. A new taxonomy for *Epilobium angustifolium* L. (Onagraceae). *Brittonia*
9715 18:167–188. 10.2307/2805200
9716 Mosquin T. 1971. Biosystematic studies in the North American species of *Linum*, section
9717 *Adenolinum* (Linaceae). *Canadian Journal of Botany* 49:1379–1388. 10.1139/b71-194
9718 Mosyakin SL. 2005. *Rumex* Linnaeus. In: Flora of North America Editorial Committee, ed.
9719 *Flora of North America North of Mexico 5 Magnoliophyta: Caryophyllidae, part 2*.
9720 Oxford and New York: Oxford University Press, 489–533.
9721 Mulligan GA, and Cody WJ. 1968. *Draba norvegica*, disjunct to the Mackenzie District,
9722 Northwest Territories, Canada. *Canadian Journal of Botany* 46:1334–1335. 10.1139/b68-
9723 181
9724 Murray DF. 1970. *Carex podocarpa* and its allies in North America. *Canadian Journal of*
9725 *Botany* 48:313–324. 10.1139/b70-046
9726 Murray DF. 2002a. *Carex* Linnaeus sect. *Nardinae* (Tuckerman) Mackenzie. In: Flora of North
9727 America Editorial Committee, ed. *Flora of North America North of Mexico 23*
9728 *Magnoliophyta: Commelinidae (in part): Cyperaceae*. Oxford and New York: Oxford
9729 University Press, 568–569.
9730 Murray DF. 2002b. *Carex* Linnaeus sect. *Racemosae* G. Don. In: Flora of North America
9731 Editorial Committee, ed. *Flora of North America North of Mexico 23 Magnoliophyta:*

Commelinidae (in part): Cyperaceae. Oxford and New York: Oxford University Press, 401–414.

Murray DF, and Elven R. 2007. A new species and two new combinations in *Potentilla* sect. *Niveae* (Rosaceae). *Journal of the Botanical Research Institute of Texas* 1:811–814.

Murray DF, Mirré V, and Elven R. 2008. *Empetrum* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae to Ericaceae*. Oxford and New York: Oxford University Press, 486–490.

Nawrocki T, Fulkerson J, and Carlson M. 2013. *Alaska Rare Plant Field Guide: The taxonomy, conservation status, distribution, morphology, and ecology of 80 rare vascular plant species of Alaska*: Alaska Natural Heritage Program, University of Alaska Anchorage.

Nesom GL. 1994. Review of the taxonomy of *Aster* sensu lato (Asteraceae: Astereae), emphasizing the New World species. *Phytologia* 77:141–297.

Nesom GL. 2006. *Erigeron* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 20 Magnoliophyta: Asteridae (in part): Asteraceae, part 2*. Oxford and New York: Oxford University Press, 256–348.

Nichols H. 1975. *Palynological and paleoclimatic study of the late quaternary displacements of the boreal forest-tundra ecotone in Eeewatin and Mackenzie, N.W.T., Canada*: Institute of Arctic and Alpine Research, University of Colorado, Occassional Paper 15.

Nichols H. 1976. Historical aspects of the northern Canadian treeline. *Arctic* 29:38–47.

Nunavut Parks & Special Places. 2008. Kugluk/Bloody Falls Territorial Park. Nunavut Parks & Special Places – Editorial Series. *Available at http://gov.nu.ca/sites/default/files/3213-025_kugluk_eng.pdf* (accessed 28 January 2016).

Olson MS, Levsen N, Soolanayakanahally RY, Guy RD, Schroeder WR, Keller SR, and Tiffin P. 2013. The adaptive potential of *Populus balsamifera* L. to phenology requirements in a warmer global climate. *Molecular Ecology* 22:1214-1230. 10.1111/mec.12067

Packer JG. 1963. The taxonomy of some North American species of *Chrysosplenium* L., section *Alternifloia* Franchet. *Canadian Journal of Botany* 41:85–103. 10.1139/b63-009

Parker VT, Vasey MC, and Keeley JE. 2009. *Arctostaphylos* Adanson. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae to Ericaceae*. Oxford and New York: Oxford University Press, 406–445.

9763 Paun O, Lehnebach C, Johansson JT, Lockhart P, and Hörandl E. 2005. Phylogenetic
9764 relationships and biogeography of *Ranunculus* and allied genera (Ranunculaceae) in the
9765 Mediterranean region and in the European Alpine System. *Taxon* 54:911–930.
9766 10.2307%2F25065478
9767 Pavlick LE, and Looman J. 1984. Taxonomy and nomenclature of rough fescues, Festuca altaica,
9768 F. campestris (F. scabrella var. major), and F. hallii, in Canada and the adjacent part of
9769 United States. *Canadian Journal of Botany* 62:1739–1749. 10.1139/b84-235
9770 Payette S, Légère A, and Gauthier R. 1978. La flore vasculaire de la région du Lac Minto,
9771 Nouveau-Québec. *Provancheria* 8:1–42.
9772 Payette S, and Lepage E. 1977. La flore vasculaire du Golfe de Richmond, Baie d'Hudson,
9773 Nouvea-Québec. *Provancheria* 7:1–68.
9774 Pennell FW. 1934. *Castilleja* in Alaska and northwestern Canada. *Proceedings of the Academy*
9775 *of Natural Sciences of Philadelphia* 86:517–540.
9776 Pimentel M, Sahuquillo E, Torrecilla Z, Popp M, Catalán P, and Brochmann C. 2013.
9777 Hybridization and long-distance colonization at different time scales: towards resolution
9778 of long-term controversies in the sweet vernal grasses (*Anthoxanthum*). *Annals of Botany*
9779 112:1015–1030. 10.1093/aob/mct170
9780 Piper L. 2010. *The Industrial Transformation of Subarctic Canada*: UBC Press.
9781 Polunin N. 1940. Botany of the Canadian Eastern Arctic. Part I. Pteridophyta and
9782 Spermatophyta. *National museum of Canada Bulletin* 92:1–408.
9783 Polunin N. 1951. The real Arctic: suggestions for its delimitation, subdivision and
9784 characterization. *Journal of Ecology* 39:308–315.
9785 Porsild AE. 1943. Materials for a flora of the continental Northwest Territories of Canada.
9786 *Sargentia* 4:1–79.
9787 Porsild AE. 1950a. A biological exploration of Banks and Victoria Islands. *Arctic* 3:45–54.
9788 Porsild AE. 1950b. Vascular plants of Nueltin Lake, Northwest Territories. *National museum of*
9789 *Canada Bulletin* 118:72–83.
9790 Porsild AE. 1951. Botany of southeastern Yukon adjacent to the Canol Road. *National museum*
9791 *of Canada Bulletin* 121:1–400.
9792 Porsild AE. 1963. *Stellaria longipes* Goldie and its allies in North America. *National museum of*
9793 *Canada Bulletin* 186:1–35.

9794 Porsild AE. 1965. Raymond Donovan Wood (1902-1964). *Arctic* 18:204.
9795 Porsild AE. 1966. Contributions to the flora of southwestern Yukon Territory. *National museum*
9796 *of Canada Bulletin* 216:1–86.
9797 Porsild AE. 1975. Materials for a flora of central Yukon Territory. *Publications in Botany,*
9798 *National Museum of Natural Sciences* 4:1–77.
9799 Porsild AE, and Cody WJ. 1980. *Vascular plants of continental Northwest Territories, Canada*.
9800 Ottawa, Canada: National Museum of Natural Sciences, National Museums of Canada.
9801 Pringle JS. in press. Gentianaceae. In: Flora of North America Editorial Committee, ed. *Flora of*
9802 *North America North of Mexico*.
9803 Rabeler RK, Hartman RL, and Utech FH. 2005. *Minuartia* Linnaeus. In: Flora of North America
9804 Editorial Committee, ed. *Flora of North America North of Mexico 5 Magnoliophyta:*
9805 *Caryophyllidae, part 2*. Oxford and New York: Oxford University Press, 116–136.
9806 Rannie WF. 1986. Summer air temperature and number of vascular species in Arctic Canada.
9807 *Arctic* 39:133–137.
9808 Reznicek AA, and Ford BA. 2002. *Carex* Linnaeus sect. *Vesicariae* (Heuffel) J. Carey. In: Flora
9809 of North America Editorial Committee, ed. *Flora of North America North of Mexico 23*
9810 *Magnoliophyta: Commelinidae (in part): Cyperaceae*. Oxford and New York: Oxford
9811 University Press, 501–511.
9812 Reznicek AA, Voss EG, and Walters BS. 2011. Michigan Flora Online. *Available at*
9813 *http://michiganflora.net/species.aspx?id=42* (accessed 30 January 2015).
9814 Richardson J. 1823. Botanical appendix to Captain Franklin's Narrative of a Journey to the
9815 Shores of the Polar Sea in the Years 1819, 20, 21, and 22. London: John Murray. p 729-
9816 768, pl. 727, 728, 730.
9817 Richardson J. 1851. *Arctic searching expedition: a journal of a boat-voyage through Rupert's*
9818 *Land and the Arctic Sea, in search of the discovery ships under command of Sir John*
9819 *Franklin. With an appendix on the physical geography of North America. 2 vols.* London:
9820 Longman, Brown, Green, and Longmans.
9821 Richardson J, and Brown R. 1823. *Botanical Appendix to Captain Franklin's narrative of a*
9822 *journey to the shores of the Polar Sea [Ed. 2]*. London: W. Clowes.
9823 Riggins CW, and Seigler DS. 2012. The genus *Artemisia* (Asteraceae: Anthemideae) at a
9824 continental crossroads: Molecular insights into migrations, disjunctions, and reticulations

among Old and New World species from a Beringian perspective. *Molecular Phylogenetics and Evolution* 64:471–490. http://dx.doi.org/10.1016/j.ympev.2012.05.003

Riley J. 1981. The vascular flora of Akimiski Island, James Bay, N.W.T. *Le Naturaliste Canadien* 108:229–235.

Ritchie JC. 1987. *Postglacial vegetation of Canada*. Cambridge: Cambridge University Press.

Rollins RC, and Shaw EA. 1973. *The genus Lesquerella (Crucifera) in North America*. Cambridge, Massachusetts: Harvard University Press.

Rothfels CJ, Sundue MA, Kuo L-Y, Larsson A, Kato M, Schuettpelz E, and Pryer KM. 2012. A revised family-level classification for eupolypod II ferns (Polypodiidae: Polypodiales). *Taxon* 61:515–533.

Rothrock PE, and Reznicek AA. 2002. *Carex* Linnaeus sect. *Paniceae* G. Don. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 23 Magnoliophyta: Commelinidae (in part): Cyperaceae*. Oxford and New York: Oxford University Press, 426–431.

Rundel PW. 2011. The diversity and biogeography of the alpine flora of the Sierra Nevada, California. *Madrono* 58:153–184. 10.3120/0024-9637-58.3.153

Saarela JM, Gillespie LJ, Consaul LL, and Bull RD. 2012. Balsam poplar (*Populus balsamifera*; Salicaceae) beyond the treeline in the western Canadian mainland Arctic (Northwest Territories). *Arctic* 65:1–12.

Saarela JM, Gillespie LJ, Consaul LL, and Bull RD. 2013a. Annotated checklist to the vascular plant flora of Tuktut Nogait National Park and the Melville Hills region (Canadian Low Arctic). *Phytotaxa* 102:1–177. http://dx.doi.org/10.11646/phytotaxa.102.1.1

Saarela JM, Peterson PM, Keane RM, Cayouette J, and Graham SW. 2007. Molecular phylogenetics of *Bromus* (Poaceae: Pooideae) based on chloroplast and nuclear DNA sequence data. *Aliso* 23:379–396. 10.5642/aliso.20072301.35

Saarela JM, Sokoloff PC, Gillespie LJ, Consaul LL, and Bull RD. 2013b. DNA barcoding the Canadian Arctic flora: core plastid barcodes (*rbcL* + *matK*) for 490 vascular plant species. *PLoS ONE* 8:e77982. 10.1371/journal.pone.0077982

Sampson WR. 1976. Dease, Peter Warren. *Dictionary of Canadian Biography, vol 9*: University of Toronto/Université Laval.

Sang T, Crawford DJ, and Stuessy TF. 1997. Chloroplast DNA phylogeny, reticulate evolution, and biogeography of *Paeonia* (Paeoniaceae). *American Journal of Botany* 84:1120–1136.

Savile DBO, and Calder JA. 1952. Notes on the flora of Chesterfield Inlet, Keewatin District, N.W.T. *Canadian Field-Naturalist* 66:103–107.

Sawtell WM. 2012. A systematic revision of the *Carex nardina* complex (Cyperaceae) M.Sc. thesis. University of Ottawa.

Schenk M, Thienpont C-N, Koopman WM, Gilissen LWJ, and Smulders MM. 2008. Phylogenetic relationships in *Betula* (Betulaceae) based on AFLP markers. *Tree Genetics & Genomes* 4:911–924. 10.1007/s11295-008-0162-0

Schultz LM. 2006. *Artemisia* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 19 Magnoliophyta: Asteridae (in part): Asteraceae, part 1*. Oxford and New York: Oxford University Press, 503–534.

Scoggan HJ. 1978-1979. *The Flora of Canada. 4 parts.* Ottawa: National Museum of Natural Sciences, National Museums of Canada.

Scott PA, Staniforth RJ, and Fayle DCF. 1992. Re-examination of water birch, *Betula occidentalis*, outlier of the northwestern Hudson Bay Lowlands. *Canadian Field-Naturalist* 106:348–351.

Sheviak CJ. 2003. *Platanthera* Richard. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 26 Magnoliophyta: Liliidae: Liliales and Orchidales*. Oxford and New York: Oxford University Press, 551–569.

Shinohara W, Nakato N, Yatabe-Kakugawa Y, Oka T, Kim JK, Murakami N, Noda H, and Sahashi N. 2013. The use of *matK* in Ophioglossaceae phylogeny and the determination of *Mankyua* chromosome number shed light on chromosome number evolution in Ophioglossaceae. *Systematic Botany* 38:564–570. 10.1600/036364413X670232

Shultz LM. 2006. *Artemisia* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 19 Magnoliophyta: Asteridae (in part): Asteraceae, part 1*. Oxford and New York: Oxford University Press, 503–534.

Smith AR, Pryer KM, Schuettpelz E, Korall P, Schneider H, and Wolf PG. 2006. A classification for extant ferns. *Taxon* 55:705–731. http://dx.doi.org/10.2307%2F25065646

Smith SG, Bruhl JJ, Gonzalez Elizondo MS, and Menapace FJ. 2002. *Eleocharis* R.Br. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 23*

Magnoliophyta: Commelinidae (in part): Cyperaceae. New York: Oxford University Press, 60–120.

Snogerup S, Zika PF, and Kirschner J. 2002. Taxonomic and nomenclatural notes on *Juncus*. *Preslia* 74:247–266.

Snow N. 2009. Checklist of vascular plants of the southern Rocky Mountain region (Version 3). *Available at http://www.conps.org/plant_lists.html* (accessed 6 March 2015).

Soják J. 1989. Notes on *Potentilla* (Rosaceae). VIII: *P. nivea* L. agg. *Candollea* 44:741–762.

Sokoloff PC. 2015. The flora of Cunningham Inlet, Somerset Island, Nunavut: history, analysis, and new collections of vascular plants, mosses, lichens, and algae. *Canadian Field-Naturalist* 129:24–37.

Solstad H. 2009. Taxonomy and evolution of the diploid and polyploid *Papaver* sect. *Meconella* (Papaveraceae)Ph.D. thesis. University of Oslo.

Soreng RJ. 2003a. *Alopecurus* L. In: Soreng RJ, Peterson PM, Davidse G, Judziewicz EJ, Zuloaga FO, Filgueiras TS, and Morrone O, eds. *Catalogue of New World Grasses (Poaceae): IV Subfamily Pooideae*. Contributions from the United States National Herbarium 48: 97–106.

Soreng RJ. 2003b. *Anthoxanthum* L. In: Soreng RJ, Peterson PM, Davidse G, Judziewicz EJ, Zuloaga FO, Filgueiras TS, and Morrone O, eds. *Catalogue of New World Grasses (Poaceae): IV Subfamily Pooideae*. Contributions from the United States National Herbarium, 111–115.

Soreng RJ. 2007. *Poa* L. In: Barkworth ME, Capels KM, Long S, Anderton LK, and Piep MB, eds. *Flora of North America North of Mexico 24 Magnoliophyta: Commelinidae (in part): Poaceae, part 1*. Oxford and New York: Oxford University Press, 486–601.

Soreng RJ, Peterson PM, Davidse G, Judziewicz EJ, Zuloaga FO, Filgueiras TS, and Morrone O. 2003. Catalogue of New World Grasses (Poaceae): IV. Subfamily Pooideae. *Contributions from the United States National Herbarium* 48:1–730.

Springer JC, and Parfitt BC. 2014. *Dryas* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 9 Magnoliophyta: Picramniaceae to Rosaceae*. Oxford and New York: Oxford University Press, 326–331.

St-Onge DA. 1980. Glacial Lake Coppermine, north-central District of Mackenzie, Northwest Territories. *Canadian Journal of Earth Sciences* 17:1310–1315. 10.1139/e80-137

St-Onge DA. 1982. The Coppermine River: art and reality. *Canadian Geographic* 102:28–31.

St-Onge DA. 2012. Late Wisconsinan morphosedimentary sequences of the lower Coppermine River valley, Nunavut and Northwest Territories. *Geoscience Canada* 39:132–147.

Standley LA, Cayouette J, and Bruederle LP. 2002. *Carex* Linnaeus sect. *Phacocystis* Dumortier. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 23 Magnoliophyta: Commelinidae (in part): Cyperaceae*. New York: Oxford University Press, 379–401.

Stefansson V. 1912. Some details of Mr. Stefansson's geographical work. *Bulletin of the American Geographical Society* 44:660–663. 10.2307/200814

Stensvold M, and Farrar DR. 2008. Moonwort fern surveys in the Wrangell-St. Elias Mountains and genetic analysis with an emphasis on *Botrychium tunux* & *Botrychium lineare*. Unpublished report. *Available at irmafiles.nps.gov/reference/holding/476749?accessType=DOWNLOAD, accessed 6 March 2015* (accessed 30 June 2016).

Stensvold MC. 2007. A taxonomic and phylogeographic study of the *Botrychium lunaria* complexPhD thesis. Iowa State University.

Stensvold MC, Farrar DR, and Johnson-Groh C. 2002. Two new species of moonworts (*Botrychium* subg. *Botrychium*) from Alaska. *American Fern Journal* 92:150–160. 10.1640/0002-8444(2002)092[0150:TNSOMB]2.0.CO;2

Struwe L, Kadereit JW, Klackenberg J, Nilsson S, Thiv M, Von Hagen KB, and Albert VA. 2002. Systematics, character evolution, and biogeography of Gentianaceae, including a new tribal and subtribal classification. In: Struwe L, and Albert VA, eds. *Gentianaceae: systematics and natural history*. Cambridge: Cambridge University Press, 21–309.

Tate JA, and Simpson BB. 2003. Paraphyly of *Tarasa* (Malvaceae) and diverse origins of the polyploid species. *Systematic Botany* 28:723–737.

Timoney KP, La Roi GH, Zoltai SC, and Robinson AL. 1992. The high subarctic forest-tundra of northwestern Canada: position, width, and vegetation gradients in relation to climate. *Arctic* 45:1–9.

Toivonen H. 2002. *Carex* Linnaeus sect. *Glareosae* G. Don. In: Flora of North America Editorial Commitee, ed. *Flora of North America North of Mexico 23 Magnoliophyta:*

Commelinidae (in part): Cyperaceae. Oxford and New York: Oxford University Press, 311–321.

Tolmachev AI, and Packer JG. 1995. Flora of the Russian Arctic. Volume I. Polypodiaceae-Gramineae. Translation of: Arkticheskaya flora SSSR (Flora arctica URSS). Translated by G.C.D. Griffiths. Edmonton: The University of Alberta Press. p 330.

Trock DK. 2006. *Achillea* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 19 Magnoliophyta: Asteridae (in part): Asteraceae, part 1*. Oxford and New York: Oxford University Press, 492–494.

Tucker GC. 2009. *Arctous* Nied. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae to Ericaceae*. Oxford and New York: Oxford University Press, 404–406.

Vander Kloet SP. 2009. *Vaccinium* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 8 Magnoliophyta: Paeoniaceae to Ericaceae*. Oxford and New York: Oxford University Press, 515–530.

Victorin M. 1927. Sur un *Botrychium* nouveau de la flore américaine et ses rapports avec le *B. lunaria* et le *B. simplex*. *Transactions of the Royal Canadian Institute* 21:319–340.

Villaverde Hidalgo TM. 2012. Systematics and phylogeography of "*Carex capitata*" complex (Cyperaceae)Ph.D. thesis. University of Ottawa.

Wagner Jr WH, and Lord LP. 1956. The morphological and cytological distinctness of *Botrychium minganense* and *B. lunaria* in Michigan. *Bulletin of the Torrey Botanical Club* 83:261–280.

Wagner WH, and Beitel JM. 1993a. *Huperzia* Bernhardi. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 2 Pteridophytes and Gymnosperms*. Oxford and New York: Oxford University Press, 20–24.

Wagner WH, and Beitel JM. 1993b. Lycopodiaceae Mirbel. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 2 Pteridophytes and Gymnosperms*. Oxford and New York: Oxford University Press, 18–37.

Wagner WH, and Wagner FS. 1993. Ophioglossaceae Agardh. In: Flora of North America Editorial Committee, ed. *Flora of North America North of Mexico 2 Pteridophytes and Gymnosperms*. New York: Oxford University Press, 85–106.

9977 Walker D, Gould W, Maier H, and Raynolds M. 2002. The Circumpolar Arctic Vegetation Map:
9978 AVHRR-derived base maps, environmental controls, and integrated mapping procedures.
9979 *International Journal of Remote Sensing* 23:4551–4570.
9980 Walker DA, Raynolds MK, Daniëls FJA, Einarsson E, Elvebakk A, Gould WA, Katenin AE,
9981 Kholod SS, Markon CJ, and Melnikov ES. 2005. The circumpolar Arctic vegetation map.
9982 *Journal of Vegetation Science* 16:267–282.
9983 Wang H-F, Landrein S, Dong W-P, Nie Z-L, Kondo K, Funamoto T, Wen J, and Zhou S-L.
9984 2015. Molecular phylogeny and biogeographic diversification of Linnaeoideae
9985 (Caprifoliaceae s. l.) disjunctly distributed in Eurasia, North America and Mexico. *PLoS*
9986 *ONE* 10:e0116485. 10.1371/journal.pone.0116485
9987 Welsh SL. 1974. *Anderson's Flora of Alaska and adjacent parts of Canada*. Provo: Brigham
9988 Young University Press.
9989 Welsh SL. 1991. *Oxytropis* DC.—names, basionyms, types, and synonyms—Flora North
9990 America Project. *Western North American Naturalist* 51:377–396.
9991 Welsh SL. 2007. *North American species of Astragalus Linnaeus (Leguminosae): a taxonomic*
9992 *revision*. Provo, Utah: Brigham Young University.
9993 Whittemore AT. 1997. *Ranunculus* L. In: Flora of North America Editorial Committee, ed. *Flora*
9994 *of North America North of Mexico 3 Magnoliophyta: Magnoliidae and Hamamelidae*.
9995 Oxford and New York: Oxford University Press, 88–135.
9996 Wolf SJ. 2006. *Arnica* Linnaeus. In: Flora of North America Editorial Committee, ed. *Flora of*
9997 *North America North of Mexico 21 Magnoliophyta: Asteridae (in part): Asteraceae, part*
9998 *3*. Oxford and New York: Oxford University Press, 366–377.
9999 Wolf SJ, and McNeill J. 1986. Synopsis and achene morphology of *Polygonum* section
10000 *Polygonum* (Polygonaceae) in Canada. *Rhodora* 88:457–479.
10001 Wolf SJ, Packer JG, and Denford KE. 1979. The taxonomy of *Minuartia rossii*
10002 (Caryophyllaceae). *Canadian Journal of Botany* 57:1673–1686. 10.1139/b79-205
10003 Wullschleger SD, Breen AL, Iversen CM, Olson MS, Näsholm T, Ganeteg U, Wallenstein MD,
10004 and Weston DJ. 2015. Genomics in a changing arctic: critical questions await the
10005 molecular ecologist. *Molecular Ecology* 24:2301-2309. 10.1111/mec.13166
10006 Young SB. 1970. On the taxonomy and distribution of *Vaccinium uliginosum*. *Rhodora* 72:439–
10007 459.

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10010 **APPENDIX 1**

10011 **Algae**

10012 **Nostocaceae**

10013 ***Nostoc commune*** Vaucher ex Bornet & Flahault

10014 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in
10015 valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone
10016 Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 4 July 2014, *Saarela, Sokoloff & Bull*
10017 *3356* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing
10018 cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N,
10019 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela, Sokoloff & Bull 3949* (CAN).

10020 **Lichens**

10021 **Caliciaceae**

10022 ***Cyphelium pinicola*** Tibell

10023 SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: N side of Fockler Creek, ca.
10024 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m,
10025 4 July 2014, *Saarela, Sokoloff & Bull 3328* (CAN); SW-facing slope above (N side) of Fockler
10026 Creek, ca. 3.2 km SE of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25
10027 m, 193 m, 5 July 2014, *Saarela, Sokoloff & Bull 3409* (CAN).

10028 **Candelariaceae**

10029 ***Candelariella citrina*** B. de Lesd.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 9 July 2014, *Saarela, Sokoloff & Bull 3768* (CAN).

Cladoniaceae

Cladonia bellidiflora (Ach.) Schaerer

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 04 July 2014, *Saarela, Sokoloff & Bull 3322* (CAN).

Cladonia* cf. *gracilis (L.) Willd.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, N-facing slopes of large mountain just S of start of Bloody Falls, W side of Coppermine River, 67°44'7.7"N, 115°23'30.4"W ± 15 m, 90 m, 14 July 2014, *Saarela, Sokoloff & Bull 4009* (CAN).

Cladonia chlorophaea (Florke ex Sommerf.) Sprengel

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 11 July 2014, *Saarela, Sokoloff & Bull 3790a* (CAN).

Cladonia fimbriata (L.) Fr.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 11 July 2014, *Saarela, Sokoloff & Bull 3785* (CAN).

Cladonia pleurota (Flörke) Schaerer

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 2 July 2014, *Saarela, Sokoloff & Bull 3197* (CAN); E end of small, unnamed lake on W bank of Coppermine River, ca. 8.3 km NNE of Sandstone Rapids, 67°31'30.8"N, 115°36'16.1"W ± 50 m, 126 m, 8 July 2014, *Saarela, Sokoloff & Bull 3693* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela, Sokoloff & Bull 4065* (CAN).

Cladonia pocillum (Ach.) O.J.Rich.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 13 July 2014, *Saarela, Sokoloff & Bull 3884* (CAN); clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela, Sokoloff & Bull 4230* (CAN).

Cladonia pyxidata (L.) Hoffm.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone

Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 4 July 2014, *Saarela, Sokoloff & Bull 3344* (CAN); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'29.5"N, 115°33'50.4"W ± 50 m, 266 m, 5 July 2014, *Saarela, Sokoloff & Bull 3462* (CAN); E end of small, unnamed lake on W bank of Coppermine River, ca. 8.3 km NNE of Sandstone Rapids, 67°31'30.8"N, 115°36'16.1"W ± 50 m, 126 m, 8 July 2014, *Saarela, Sokoloff & Bull 3653* (CAN); Kugluk (Bloody Falls) Territorial Park, N-facing slopes of large mountain just S of start of Bloody Falls, W side of Coppermine River, 67°44'7.7"N, 115°23'30.4"W ± 15 m, 90 m, 14 July 2014, *Saarela, Sokoloff & Bull 4006* (CAN).

Cladonia stellaris (Opiz) Pouzar & Vězda

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 3 July 2014, *Saarela, Sokoloff & Bull 3283* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela, Sokoloff & Bull 3954* (CAN).

Hymeneliaceae

Tremolecia atrata (Ach.) Hertel

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 4 July 2014, *Saarela, Sokoloff & Bull 3347* (CAN).

Icmadophilaceae

Thamnolia vermicularis (Sw.) Ach. ex Schaerer

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3084a* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 11 July 2014, *Saarela, Sokoloff & Bull 3787* (CAN).

Lecanoraceae

Lecanora cf. polytropa (Hoffm.) Rabenh.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, confluence of Coppermine and Big Tree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 7 July 2014, *Saarela, Sokoloff & Bull 3614b* (CAN).

Lecanora circumborealis Brodo & Vitik.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 2 July 2014, *Saarela, Sokoloff & Bull 3198b* (CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'17.6"N, 115°22'14.2"W ± 20 m, 76 m, 17 July 2014, *Saarela, Sokoloff & Bull 4140b* (CAN).

Lecanora epibryon (Ach.) Ach.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 11 July 2014, *Saarela, Sokoloff & Bull 3788* (CAN).

Lecanora opiniconensis Brodo

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-facing slopes above Coppermine River and below spruce forest, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 8 July 2014, *Saarela, Sokoloff & Bull 3652* (CAN).

Lecanora subintricata (Nyl.) Th.Fr.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 2 July 2014, *Saarela, Sokoloff & Bull 3200a* (CAN).

Lecanora symmicta (Ach.) Ach.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 2 July 2014, *Saarela, Sokoloff & Bull 3198a* (CAN).

Lecidella stigmatea (Ach.) Hertel & Leuckert

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: dry rocky ridge top above S-SW-facing slope above start of Bloody Falls, SE side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 150 m, 68 m, 19 July 2014, *Saarela, Sokoloff & Bull 4201* (CAN).

Rhizoplaca chrysoleuca (Sm.) Zopf

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: esker on E side of Coppermine River, 0.6 km SSE of Muskox Rapids, 67°22'40"N, 115°42'38.5"W ± 50 m, 172 m, 7 July 2014, *Saarela, Sokoloff & Bull 3613* (CAN); Coronation Gulf, NW peninsula of Expeditor Cove, ca. 9.5 km NW of Kugluktuk, 67°52'39.5"N, 115°16'43.8"W ± 5 m, 14 m, 8 July 2014, *Saarela, Sokoloff & Bull 3729* (CAN).

Lecideaceae

Lecidea tessellata Flörke

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats on top of mountain on W side of Coppermine River, just S of the start of Bloody Falls Rapids, 67°44'2.8"N, 115°23'39.3"W ± 250 m, 110 m, 14 July 2014, *Saarela, Sokoloff & Bull 3996* (CAN).

Megasporaceae

Aspicilia cinerea (L.) Korber

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: ridge top N of Fockler Creek and S of Tundra Lake, ca. 3.8 km SE of Sandstone Rapids, Coppermine River, 67°25'20.4"N, 115°34'17.2"W ± 3 m, 273 m, 5 July 2014, *Saarela, Sokoloff & Bull 3422* (CAN); Kugluk (Bloody Falls) Territorial Park, NE-facing slope of large hill just S of Bloody Falls, W side of Coppermine River, 67°44'6.6"N, 115°23'13.4"W ± 50 m, 40 m, 14 July 2014, *Saarela, Sokoloff & Bull 3985* (CAN).

Nephromataceae

Nephroma expallidum (Nyl.) Nyl.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, rocky cliffs and ledges directly above (W side) of Bloody Falls, just S of heavily used day-use/fishing area, 67°44'40.1"N, 115°22'4.9"W ± 20 m, 8 m, 12 July 2014, *Saarela, Sokoloff & Bull 3815* (CAN); SE edge of Kugluktuk, rocky cliffs overlooking Coppermine River, 67°49'9.2"N, 115°5'40.4"W ± 50 m, 28 m, 24 July 2014, *Saarela, Sokoloff & Bull 4358* (CAN).

Ophioparmaceae

Ophioparma ventosa (L.) Norman

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: ridge top N of Fockler Creek and S of Tundra Lake, ca. 3.8 km SE of Sandstone Rapids, Coppermine River, 67°25'20.4"N, 115°34'17.2"W ± 3 m, 273 m, 5 July 2014, *Saarela, Sokoloff & Bull 3421* (CAN).

Parmeliaceae

Alectoria ochroleuca (Hoffm.) A.Massal.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'10.6"N, 115°22'13.1"W ± 3 m, 17 m, 18 July 2014, *Saarela, Sokoloff & Bull 4169* (CAN).

Arctoparmelia centrifuga (L.) Hale

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, in valley just above creek's confluence with the Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 4 July 2014, *Saarela, Sokoloff & Bull 3345* (CAN); Kugluk (Bloody Falls) Territorial Park, NE-facing slope of large hill just S of

Bloody Falls, W side of Coppermine River, 67°44'6.6"N, 115°23'13.4"W ± 50 m, 40 m, 14 July 2014, *Saarela, Sokoloff & Bull 3986* (CAN).

Arctoparmelia separata (Th.Fr.) Hale

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 7 July 2014, *Saarela, Sokoloff & Bull 3595* (CAN).

Asahinea chrysantha (Tuck.) W.L. Culb. & C.F. Culb.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: SW-facing slope above (N side) of Fockler Creek, ca. 3.2 km SE of Sandstone Rapids, Coppermine River, 67°25'26.2"N, 115°36'14"W ± 25 m, 193 m, 5 July 2014, *Saarela, Sokoloff & Bull 3410* (CAN).

Bryocaulon divergens (Ach.) Kärnefelt

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: top of ridge N of Fockler Creek, ca. 3.6 km SE of Sandstone Rapids, Coppermine River, 67°25'20"N, 115°35'40.1"W ± 5 m, 235 m, 5 July 2014, *Saarela, Sokoloff & Bull 3417* (CAN).

Bryoria nitidula (Th.Fr.) Brodo & D.Hawksw.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8m m, 22 July 2014, *Saarela, Sokoloff & Bull 4243* (CAN).

Bryoria simplicor (Vain.) Brodo & D.Hawksw.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 7 July 2014, *Saarela, Sokoloff & Bull 3593* (CAN).

Cetraria islandica (L.) Ach.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 4 July 2014, *Saarela, Sokoloff & Bull 3326* (CAN); Kugluk (Bloody Falls) Territorial Park, terrace above S-facing slopes above start of Bloody Falls, W side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 50 m, 68 m, 16 July 2014, *Saarela, Sokoloff & Bull 4089* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela, Sokoloff & Bull 4155* (CAN).

Dactylina arctica (Hook. f.) Nyl.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3085* (CAN); confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 7 July 2014, *Saarela, Sokoloff & Bull 3539* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela, Sokoloff & Bull 3953* (CAN).

Flavocetraria cucullata (Bellardi) Kärnefelt & A. Thell

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 11 July 2014, *Saarela, Sokoloff & Bull 3789* (CAN).

Flavocetraria nivalis (L.) Kärnefelt & Thell

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3065* (CAN); Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3083* (CAN); confluence of Coppermine and Big Tree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 7 July 2014, *Saarela, Sokoloff & Bull 3615* (CAN); Coronation Gulf, NW peninsula of Expeditor Cove, ca. 9.5 km NW of Kugluktuk, 67°52'40.4"N, 115°16'38.3"W ± 10 m, 15 m, 8 July 2014, *Saarela, Sokoloff & Bull 3707* (CAN).

Hypogymnia physodes (L.) Nyl.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine River and Melville Creek, just W of Coppermine Mountains, 67°15'52"N, 115°30'55.3"W ± 350 m, 178-190 m, 7 July 2014, *Saarela, Sokoloff & Bull 3594* (CAN); forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 7 July 2014, *Saarela, Sokoloff & Bull 3596* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 11 July 2014, *Saarela, Sokoloff & Bull 3790b* (CAN).

Masonhalea richardsonii (Hook.) Kärnefelt

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats on W side of Fockler Creek, above spruce forest in creek valley, ca 2.2 km S of Sandstone Rapids, Coppermine River, 67°25'49"N, 115°37'55"W ± 50 m, 152 m, 1 July 2014, *Saarela, Sokoloff & Bull 3139* (CAN); NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 3 July 2014, *Saarela, Sokoloff & Bull 3288* (CAN); meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'29.5"N, 115°33'50.4"W ± 50 m, 266 m, 5 July 2014, *Saarela, Sokoloff & Bull 3461* (CAN); Richardson Bay, confluence of Richardson and Rae rivers at Coronation Gulf, ca. 20 km WNW of Kugluktuk, 67°54'11.2"N, 115°32'27.4"W ± 200 m, 0 m, 8 July 2014, *Saarela, Sokoloff & Bull 3692* (CAN); Kugluk (Bloody Falls) Territorial Park, NE-facing slope of large hill just S of Bloody Falls, W side of Coppermine River, 67°44'6.6"N, 115°23'13.4"W ± 50 m, 40 m, 14 July 2014, *Saarela, Sokoloff & Bull 3984* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014, *Saarela, Sokoloff & Bull 4064* (CAN); W of Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8m m, 22 July 2014, *Saarela, Sokoloff & Bull 4244* (CAN).

Melanelia stygia (L.) Essl.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: esker on E side of Coppermine River, 0.6 km SSE of Muskox Rapids, 67°22'40"N, 115°42'38.5"W ± 50 m, 172 m, 7 July 2014, *Saarela, Sokoloff & Bull 3612* (CAN).

Parmeliopsis ambigua (Wulfen) Nyl.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela, Sokoloff & Bull 4036* (CAN).

Usnea lapponica Vainio

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, E side of Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 9 July 2014, *Saarela, Sokoloff & Bull 4231* (CAN).

Vulpicidia pinastri (Scop.) J.-E. Mattsson & M. J. Lai

SPECIMENS EXAMINED: CANADA. **Nunavut:** Spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 2 July 2014, *Saarela, Sokoloff & Bull 3199* (CAN); Kitikmeot Region: forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 7 July 2014, Saarela, *Sokoloff & Bull 3694* (CAN).

Vulpicidia tilesii (Ach.) J.-E. Mattsson & M.J. Lai

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3086* (CAN); E side of Fockler Creek, in valley just above creek's confluence with the

Coppermine River, ca. 1.4 km SSW of Sandstone Rapids, 67°26'14.5"N, 115°38'34.8"W ± 50 m, 146 m, 4 July 2014*, Saarela, Sokoloff & Bull 3346* (CAN).

Peltigeraceae

Peltigera aphthosa (L.) Willd.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: NW-facing slope above tributary of Fockler Creek, ca. 2.4 km SSW of Sandstone Rapids, Coppermine River, 67°25'46"N, 115°38'49.4"W ± 50 m, 149 m, 3 July 2014, *Saarela, Sokoloff & Bull 3284* (CAN); Kugluk (Bloody Falls) Territorial Park, day-use area above Bloody Falls (at outhouse and fire pit), 67°44'36.8"N, 115°22'11.1"W ± 25 m, 28 m, 12 July 2014, *Saarela, Sokoloff & Bull 3845* (CAN); Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 16 July 2014*, Saarela, Sokoloff & Bull 4063* (CAN).

Peltigera malacea (Ach.) Funk

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, SE-facing slope above small stream in deep gully that runs into Coppermine River just below Bloody Falls, ca. 1 km W of Bloody Falls, 67°44'41.2"N, 115°23'34.8"W ± 50 m, 49 m, 15 July 2014, *Saarela, Sokoloff & Bull 4039* (CAN).

Peltigera rufescens (Weiss) Humb.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-facing slopes above Coppermine River and below spruce forest, ca. 7.8 km NNE of Sandstone Rapids, 67°31'16.2"N, 115°36'52.1"W ± 200 m, 110 m, 8 July 2014, *Saarela, Sokoloff & Bull 3651* (CAN); W of

Kugluktuk on tundra flats above Coppermine River, S of 1 Coronation Drive and N of community power plant, 67°49'28.97"N, 115°5'0.2"W ± 100 m, 8m m, 22 July 2014, *Saarela, Sokoloff & Bull 4274* (CAN).

Solorina bispora (L.) Nyl.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3063* (CAN); Kugluk (Bloody Falls) Territorial Park, rocky valley immediately SW of Bloody Falls, along rough marked section of Portage Trail, 67°44'34"N, 115°22'16"W ± 50 m, 20 m, 18 July 2014, *Saarela, Sokoloff & Bull 4168* (CAN); SW-facing slopes of shallow gully in sand hills above Bloody Falls, SE side of Coppermine River across river from Kugluk (Bloody Falls) Territorial Park, 67°44'28.2"N, 115°22'3"W ± 15 m, 78 m, 19 July 2014, *Saarela, Sokoloff & Bull 4185* (CAN).

Solorina saccata (L.) Ach.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: confluence of Coppermine and Kendall rivers (NW side of Coppermine River, S side of Kendall River), 67°6'51.1"N, 116°8'18.3"W ± 150 m, 220 m, 7 July 2014, *Saarela, Sokoloff & Bull 3578* (CAN).

Pertusariaceae

Ochrolechia upsaliensis (L.) A. Massal.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, flats above boardwalk W of Bloody Falls, 67°44'34.5"N, 115°22'27"W ± 100 m, 135 m, 11 July 2014, *Saarela, Sokoloff & Bull 3786* (CAN).

Pertusaria excludens Nyl.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: ridge top N of Fockler Creek and S of Tundra Lake, ca. 3.8 km SE of Sandstone Rapids, Coppermine River, 67°25'20.4"N, 115°34'17.2"W ± 3 m, 273 m, 5 July 2014, *Saarela, Sokoloff & Bull 3423* (CAN).

Pertusaria panyrga (Ach.) A.Massal.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: dry rocky ridge top above S-SW-facing slope above start of Bloody Falls, SE side of Coppermine River, 67°44'27.2"N, 115°22'58"W ± 150 m, 68 m, 19 July 2014, *Saarela, Sokoloff & Bull 4202* (CAN).

Physciaceae

Amandinea punctata (Hoffm.) Coppins & Scheid.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 2 July 2014, *Saarela, Sokoloff & Bull 3200b* (CAN); Kugluk (Bloody Falls) Territorial Park, W side of Coppermine River, between sandy hills and Bloody Falls, 67°45'17.6"N, 115°22'14.2"W ± 20 m, 76 m, 17 July 2014, *Saarela, Sokoloff & Bull 4140a* (CAN).

Physconia muscigena (Ach.) Poelt

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, rocky slopes of North Hill, 67°49'29.6"N, 115°6'31"W ± 50 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3066* (CAN).

Rinodina mniaraea (Ach.) Körber

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: meadow just S of Tundra Lake, ca. 4.2 km SE of Sandstone Rapids, Coppermine River, 67°25'29.5"N, 115°33'50.4"W ± 50 m, 266 m, 5 July 2014, *Saarela, Sokoloff & Bull 3462* (CAN).

Rinodina turfacea (Wahlenb.) Korber

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: spruce forest along Fockler Creek, ca. 2.3 km SSE of Sandstone Rapids, Coppermine River, 67°25'45.7"N, 115°37'21.8"W ± 25 m, 166 m, 2 July 2014, *Saarela, Sokoloff & Bull 3190b* (CAN).

Tetramelas papillatus (Sommerf.) Kalb

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: clay slopes and beach on E side of Coppermine River, just above start of Bloody Falls, 67°44'9.4"N, 115°22'41.2"W ± 15 m, 40 m, 19 July 2014, *Saarela, Sokoloff & Bull 4228* (CAN).

Rhizocarpaceae

Rhizocarpon geographicum (L.) DC.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluktuk, flat mesa at top of North Hill, 67°49'32"N, 115°6'39"W ± 100 m, 50 m, 29 June 2014, *Saarela, Sokoloff & Bull 3084b* (CAN); E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 4 July 2014, *Saarela, Sokoloff & Bull 3343* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela, Sokoloff & Bull 3955* (CAN).

Sphaerophoraceae

Sphaerophorus fragilis (L.) Pers.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: flats atop and upper slopes of Coppermine Mountains, N/W side of Coppermine River, 67°14'49.9"N, 115°38'43.7"W ± 200 m, 467 m, 09 July 2014, *Saarela, Sokoloff & Bull 3776* (CAN).

Teloschistaceae

Fulgensia* cf. *subbracteata (Nyl.) Poelt

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela, Sokoloff & Bull 4206* (CAN).

Xanthoria candelaria (L.) Th. Fr.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: N side of Fockler Creek, ca. 1.9 km S of Sandstone Rapids, Coppermine River, 67°25'57.89"N, 115°38'3.9"W ± 10 m, 162 m, 4 July 2014, *Saarela, Sokoloff & Bull 3327* (CAN).

Xanthoria elegans (Link) Th. Fr.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: E side of Fockler Creek, ridge above creek valley before its confluence with Coppermine River, ca. 1.8 km S of Sandstone Rapids, 67°26'3.9"N, 115°38'20.4"W ± 25 m, 168 m, 4 July 2014, *Saarela, Sokoloff & Bull 3342* (CAN); Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N,

115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela, Sokoloff & Bull 3957* (CAN); Kugluk (Bloody Falls) Territorial Park, NE-facing slope of large hill just S of Bloody Falls, W side of Coppermine River, 67°44'6.6"N, 115°23'13.4"W ± 50 m, 40 m, 14 July 2014, *Saarela, Sokoloff & Bull 3983* (CAN).

Umbilicariaceae

Lasallia pensylvanica (Hoffm.) Llano

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Coppermine River, confluence of Coppermine and Big Tree rivers, 66°56'23.8"N, 116°21'3.2"W ± 100 m, 265 m, 7 July 2014, *Saarela, Sokoloff & Bull 3614a* (CAN).

Umbilicaria lyngei Schol.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: Kugluk (Bloody Falls) Territorial Park, upper ledges of rocky (gabbro) S-facing cliffs above the start of Bloody Falls (W bank of River), just E of Portage Trail, 67°44'21.7"N, 115°22'42.2"W ± 25 m, 46 m, 14 July 2014, *Saarela, Sokoloff & Bull 3952* (CAN).

Umbilicaria proboscidea (L.) Schrader

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: top of ridge N of Fockler Creek, ca. 3.6 km SE of Sandstone Rapids, Coppermine River, 67°25'20"N, 115°35'40.1"W ± 5 m, 235 m, 5 July 2014, *Saarela, Sokoloff & Bull 3460* (CAN).

Verrucariaceae

Staurothele drummondii (Tuck.) Tuck.

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: S-SW-facing slopes above start of Bloody Falls, SE side of Coppermine River, 67°44'12.5"N, 115°22'31"W ± 50 m, 50-60 m, 19 July 2014, *Saarela, Sokoloff & Bull 4205* (CAN).

Unknown

SPECIMENS EXAMINED: CANADA. **Nunavut:** Kitikmeot Region: forest and slopes at confluence of Big Creek and Coppermine River, N side of Coppermine River, S side of Coppermine Mountains, 67°14’29.3”N, 116°2’44.5”W ± 250 m, 180-199 m, 7 July 2014, *Saarela, Sokoloff & Bull 3597* (CAN).

Table 1(on next page)

Number of genera and species in each major group of vascular plants in the lower Coppermine River valley and vicinity.

In parentheses after each higher taxon name are the numbers of families in the higher taxon.

In parentheses after number of species are numbers of infraspecific taxa and hybrids.

Table 1. Number of genera and species in each major group of vascular plants in the lower Coppermine River valley and vicinity. In parentheses after each higher taxon name are the numbers of families in the higher taxon. In parentheses after number of species are numbers of infraspecific taxa and hybrids.

Taxon	Genera	Species	Taxon	Genera	Species
LYCOPHYTES (1)			EUDICOTS (27)		
Lycopodiaceae	2	2	Asteraceae	15	23
Total	2	2	Betulaceae	2	3
			Boraginaceae	1	1
MONILOPHYTES (6)			Brassicaceae	8	18
Cystopteridaceae	1	1	Campanulaceae	1	1
Dryopteridaceae	1	1	Caryophyllaceae	9	18
Equisetaceae	1	5	Chenopodiaceae	1	1
Ophioglossaceae	1	3	Elaeagnaceae	1	1
Pteridaceae	1	1	Ericaceae	10	14
Woodsiaceae	1	3	Fabaceae	5	11
Total	6	14	Gentianaceae	4	4
			Haloragaceae	1	1
GYMNOSPERMS (2)			Lentibulariaceae	2	4
Cupressaceae	1	1	Linaceae	1	1
Pinaceae	1	1	Linnaeaceae	1	1
Total	2	2	Onagraceae	2	6
			Orobanchaceae	2	11
MONOCOTS (9)			Papaveraceae	1	1
Amaryllidaceae	1	1	Parnassiaceae	1	2

Cyperaceae	4	46(1)	Plantaginaceae	2	3
Juncaceae	2	8	Plumbaginaceae	1	1
Juncaginaceae	1	2	Polygonaceae	5	5
Orchidaceae	2	2	Primulaceae	2	4
Poaceae	17	35(4)	Ranunculaceae	5	11
Potamogetonaceae	2	4	Rosaceae	5	12(1,1)
Tofieldiaceae	1	2	Salicaceae	2	13(2,2)
Typhaceae	1	1	Saxifragaceae	3	10
Total	31	101(106)	Total	93	181(187)
			TOTAL	134	300(311)

Table 2(on next page)

Checklist of the vascular plant flora of the lower Coppermine River valley and vicinity.

The table records whether or not each taxon is newly recorded for Nunavut, mainland Nunavut and/or the study area; if records are a range extension for a taxon; if a taxon has been previously recorded for the study area; if a taxon has been previously collected in the study area but was identified as a different taxon; if a taxon is recorded for Fockler Creek, Kugluk (Bloody Falls) Territorial Park and/or Kugluktuk; and if a taxon is recorded for the Arctic and Subarctic portions of the study area. The number of unique collections from the study area examined for each taxon is also given. An asterisk indicates that we were unable to find a voucher specimen corresponding to a literature record.

Table 2. Checklist of the vascular plant flora of the lower Coppermine River valley and vicinity. The table records whether or not each taxon is newly recorded for Nunavut, mainland Nunavut and/or the study area; if records are a range extension for a taxon; if a taxon has been previously recorded for the study area; if a taxon has been previously collected in the study area but was identified as a different taxon; if a taxon is recorded for Fockler Creek, Kugluk (Bloody Falls) Territorial Park and/or Kugluktuk; and if a taxon is recorded for the Arctic and Subarctic portions of the study area. The number of unique collections from the study area examined for each taxon is also given. An asterisk indicates that we were unable to find a voucher specimen corresponding to a literature record.

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
GYMNOSPERMS													
Cupressaceae	*Juniperus communis* subsp. *depressa*				×	×	×	×		×	×	6	species
Pinaceae	*Picea glauca*					×	×	×		×	×	5	species
LYCOPHYTES													
Lycopodiaceae	*Huperzia arctica*					×	×	×	×	×	×	5	species
Lycopodiaceae	*Lycopodium annotinum* subsp. *alpestre*			×			×				×	1	species
MONILOPHYTES													
Cystopteridaceae	*Cystopteris fragilis*					×		×	×	×	×	5	species
Dryopteridaceae	*Dryopteris fragrans*					×	×	×	×	×	×	8	species
Equisetaceae	*Equisetum arvense* subsp. *alpestre*					×	×	×	×	×	×	6	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Equisetaceae	*Equisetum fluviatile*			×	×			×	×	×		2	species
Equisetaceae	*Equisetum palustre*			×	×		×	×		×	×	5	species
Equisetaceae	*Equisetum scirpoides*			×	×		×	×		×	×	5	species
Equisetaceae	*Equisetum variegatum* subsp. *variegatum*					×	×	×	×*	×	×	5	species
Ophioglossaceae	*Botrychium minganense*			×						×		1	species
Ophioglossaceae	*Botrychium neolunaria*	×	×	×	×						×	1	species
Ophioglossaceae	*Botrychium tunux*	×	×	×	×					×		3	species
Pteridaceae	*Cryptogramma stelleri*		×	×	×			×		×		1	species
Woodsiaceae	*Woodsia alpina*					×			×	×		3	species
Woodsiaceae	*Woodsia glabella*					×	×	×	×	×	×	7	species
Woodsiaceae	*Woodsia ilvensis*					×			×	×		1	species
MONOCOTS													
Amaryllidaceae	*Allium schoenoprasum*	×	×	×	×			×	×	×	×	3	species
Cyperaceae	*Carex adelostoma*			×	×		×			×	×	2	species
Cyperaceae	*Carex aquatilis* subsp. *stans*					×	×	×	×	×	×	6	species
Cyperaceae	*Carex atrofusca*					×	×	×	×	×	×	6	species
Cyperaceae	*Carex bicolor*			×			×	×	×	×	×	10	species
Cyperaceae	*Carex bigelowii* subsp. *bigelowii*					×		×	×	×		3	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Cyperaceae	*Carex bigelowii* subsp. *lugens*					×	×	×	×	×	×	8	subsp.
Cyperaceae	*Carex borealipolaris*					×	×	×	×	×	×	6	species
Cyperaceae	*Carex capillaris* subsp. *fuscidula*					×	×	×	×	×	×	10	species
Cyperaceae	*Carex capitata*			×	×						×	2	species
Cyperaceae	*Carex chordorrhiza*					×	×		×	×	×	4	species
Cyperaceae	*Carex concinna*			×	×		×	×		×	×	6	species
Cyperaceae	*Carex fuliginosa* subsp. *misandra*					×	×	×	×	×	×	3	species
Cyperaceae	*Carex glacialis*					×	×	×	×	×	×	5	species
Cyperaceae	*Carex glareosa* subsp. *glareosa*			×						×		2	species
Cyperaceae	*Carex gynocrates*		×	×	×		×	×		×	×	2	species
Cyperaceae	*Carex holostoma*					×	×	×	×	×	×	5	species
Cyperaceae	*Carex krausei*			×			×	×	×	×	×	6	species
Cyperaceae	*Carex lachenallii*			×	×		×		×	×	×	3	species
Cyperaceae	*Carex livida*		×	×	×		×				×	1	species
Cyperaceae	*Carex marina*					×	×	×	×	×	×	8	species
Cyperaceae	*Carex maritima*					×		×	×	×		4	species
Cyperaceae	*Carex membranacea*					×	×	×	×	×	×	5	species
Cyperaceae	*Carex microglochin*			×			×	×	×	×	×	5	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Cyperaceae	*Carex myosuroides*					×	×	×	×	×	×	5	species
Cyperaceae	*Carex nardina*			×			×	×	×	×	×	4	species
Cyperaceae	*Carex norvegica*			×	×		×	×		×	×	2	species
Cyperaceae	*Carex petricosa* subsp. *petricosa*			×			×	×		×	×	6	species
Cyperaceae	*Carex podocarpa*				×	×	×	×	×	×	×	12	species
Cyperaceae	*Carex rariflora*					×	×	×	×	×	×	4	species
Cyperaceae	*Carex rupestris*					×	×	×	×	×	×	7	species
Cyperaceae	*Carex saxatilis*					×	×	×	×	×	×	5	species
Cyperaceae	*Carex scirpoidea* subsp. *scirpoidea*					×	×	×	×	×	×	6	species
Cyperaceae	*Carex simpliciuscula* subsp. *subholarctica*					×	×	×	×*	×	×	5	species
Cyperaceae	*Carex subspathacea*			×						×		2	species
Cyperaceae	*Carex supina* subsp. *spaniocarpa*					×	×			×	×	6	species
Cyperaceae	*Carex ursina*			×						×		1	species
Cyperaceae	*Carex vaginata*					×	×	×	×	×	×	5	species
Cyperaceae	*Carex williamsii*			×						×		2	species
Cyperaceae	*Eleocharis acicularis*					×*				×	×	2	species
Cyperaceae	*Eleocharis quinqueflora*	×	×	×	×			×	×	×		2	species
Cyperaceae	*Eriophorum*					×	×	×	×	×	×	7	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
	angustifolium												
Cyperaceae	*Eriophorum brachyantherum*					×	×		×	×	×	4	species
Cyperaceae	*Eriophorum callitrix*			×			×	×		×	×	3	species
Cyperaceae	*Eriophorum scheuchzeri* subsp. *arcticum*					×	×	×	×	×	×	12	species
Cyperaceae	*Eriophorum triste*			×			×	×		×	×	3	species
Cyperaceae	*Eriophorum vaginatum* subsp. vaginatum					×	×	×	×	×	×	4	species
Cyperaceae	*Trichophorum caespitosum* subsp. *caespitosum*					×	×	×	×	×	×	3	species
Juncaceae	*Juncus alpinoarticulatus* subsp. *americanus*		×	×	×			×		×		4	species
Juncaceae	*Juncus arcticus* subsp. *alaskanus*			×			×	×	×	×	×	6	species
Juncaceae	*Juncus biglumis*					×*		×	×*	×		1	species
Juncaceae	*Juncus leucochlamys*					×*	×	×	×*	×	×	3	species
Juncaceae	*Juncus triglumis* subsp. *albescens*					×*	×	×	×*	×	×	3	species
Juncaceae	*Luzula confusa*					×	×	×	×	×	×	7	species
Juncaceae	*Luzula groenlandica*					×*				×		1	species
Juncaceae	*Luzula nivalis*					×	×	×	×	×	×	5	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Juncaginaceae	*Triglochin maritima*			×			×	×	×	×	×	3	species
Juncaginaceae	*Triglochin palustris*			×			×	×		×	×	5	species
Orchidaceae	*Corallorhiza trifida*					×	×	×	×	×	×	9	species
Orchidaceae	*Platanthera obtusata* subsp. *obtusata*					×	×	×	×	×	×	9	species
Poaceae	*Agrostis mertensii*			×	×						×	1	species
Poaceae	*Alopecurus borealis*					×		×	×	×		8	species
Poaceae	*Anthoxanthum arcticum*			×	×					×		1	species
Poaceae	*Anthoxanthum hirtum*			×	×				×	×		1	species
Poaceae	*Anthoxanthum monticola* subsp. *alpinum*					×	×	×	×	×	×	10	species
Poaceae	*Arctagrostis latifolia* subsp. *arundinacea*			×					×	×		2	subsp.
Poaceae	*Arctagrostis latifolia* subsp. *latifolia*					×	×	×		×	×	7	species
Poaceae	*Arctophila fulva*					×	×	×	×	×	×	8	species
Poaceae	*Bromus pumpellianus*					×	×	×	×	×	×	11	species
Poaceae	*Calamagrostis canadensis* subsp. *langsdorffii*			×				×	×	×	×	3	species
Poaceae	*Calamagrostis lapponica*			×			×	×	×	×	×	4	species
Poaceae	*Calamagrostis purpurascens* subsp.					×	×	×	×	×	×	9	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
	purpurascens												
Poaceae	*Calamagrostis stricta* subsp. *groenlandica*			×			×	×		×	×	5	species
Poaceae	*Calamagrostis stricta* subsp. *stricta*			×	×			×		×		2	subsp.
Poaceae	*Deschampsia brevifolia*					×		×		×		2	species
Poaceae	*Deschampsia cespitosa* subsp. *cespitosa*					×	×	×	×*	×	×	9	species
Poaceae	*Deschampsia sukatschewii* subsp. *borealis*			×			×				×	1	species
Poaceae	*Dupontia fisheri*					×		×	×	×		7	species
Poaceae	*Elymus alaskanus* subsp. *alaskanus*			×			×	×	×	×	×	6	species
Poaceae	*Elymus alaskanus* subsp. *hyperarcticus*			×				×		×	×	4	subsp.
Poaceae	*Elymus violaceus*			×				×		×	×	2	species
Poaceae	*Festuca altaica*	×	×	×	×		×	×		×	×	4	species
Poaceae	*Festuca baffinensis*					×			×	×		2	species
Poaceae	*Festuca brachyphylla* subsp. *brachyphylla*					×	×	×	×	×	×	8	species
Poaceae	*Festuca rubra* subsp. *arctica*					×*	×	×	×	×	×	7	subsp.
Poaceae	*Festuca rubra* subsp.			×				×	×	×		3	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
	rubra												
Poaceae	*Festuca viviparoidea* subsp. *viviparoidea*		×	×	×			×		×		1	species
Poaceae	*Hordeum jubatum* subsp. *intermedium*			×				×	×	×		4	species
Poaceae	*Leymus mollis* subsp. *villosissimus*					×			×	×		8	species
Poaceae	*Phippsia algida*			×				×		×		1	species
Poaceae	*Poa alpina*			×			×		×	×	×	6	species
Poaceae	*Poa arctica* subsp. *arctica*					×	×	×	×*	×	×	4	species
Poaceae	*Poa glauca* subsp. *glauca*					×*	×	×	×	×	×	13	species
Poaceae	*Poa pratensis* subsp. *alpigena*			×			×	×	×	×	×	10	species
Poaceae	*Puccinellia arctica*			×				×		×		3	species
Poaceae	*Puccinellia nuttalliana*			×			×	×	×	×	×	13	species
Poaceae	*Puccinellia phryganodes* subsp. *neoarctica*					×*			×*	×		1	species
Poaceae	*Puccinellia vaginata*			×					×	×	×	4	species
Poaceae	*Trisetum spicatum*					×	×	×	×	×	×	9	species
Potamogetonaceae	*Potamogeton gramineus*			×	×				×	×		1	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Potamogetonaceae	*Stuckenia filiformis*			×				×		×		4	species
Potamogetonaceae	*Stuckenia pectinata*	×	×	×	×			×	×	×		4	species
Potamogetonaceae	*Stuckenia vaginata*			×				×		×	×	3	species
Tofieldiaceae	*Tofieldia coccinea*					×	×	×	×	×	×	8	species
Tofieldiaceae	*Tofieldia pusilla*					×	×	×	×	×	×	8	species
Typhaceae	*Sparganium hyperboreum*			×						×		1	species
EUDICOTS													
Asteraceae	*Achillea millefolium* subsp. *borealis*					×		×	×	×		8	species
Asteraceae	*Antennaria friesiana – A. alpina* complex					×	×	×	×	×	×	11	species
Asteraceae	*Antennaria monocephala* subsp. *angustata*					×	×	×	×	×	×	7	species
Asteraceae	*Arnica angustifolia* subsp. *angustifolia*					×	×	×	×	×	×	5	species
Asteraceae	*Arnica frigida*					×		×	×	×	×	6	species
Asteraceae	*Artemisia borealis* subsp. *borealis*			×			×				×	2	species
Asteraceae	*Artemisia hyperborea*					×*		×	×*	×	×	2	species
Asteraceae	*Artemisia tilesii*					×	×	×	×	×	×	8	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Asteraceae	*Askellia pygmaea*			×			×	×		×	×	5	species
Asteraceae	*Erigeron eriocephalus*					×	×		×	×		4	species
Asteraceae	*Erigeron humilis*					×	×	×	×	×	×	11	species
Asteraceae	*Eurybia sibirica*					×	×	×	×	×	×	14	species
Asteraceae	*Hulteniella integrifolia*					×	×	×	×	×	×	8	species
Asteraceae	*Petasites frigidus* subsp. *sagittatus*			×			×				×	1	species
Asteraceae	*Saussurea angustifolia* subsp. *angustifolia*					×	×	×	×	×	×	7	species
Asteraceae	*Senecio lugens*					×	×	×	×	×	×	8	species
Asteraceae	*Symphyotrichum pygmaeum*					×	×	×	×	×	×	8	species
Asteraceae	*Taraxacum ceratophorum*					×	×	×	×	×	×	17	species
Asteraceae	*Taraxacum holmenianum*			×	×				×	×		2	species
Asteraceae	*Taraxacum phymatocarpum*				×	×	×		×	×	×	4	species
Asteraceae	*Tephroseris frigida*					×	×	×	×	×	×	6	species
Asteraceae	*Tephroseris palustris* subsp. *congesta*					×			×	×		6	species
Asteraceae	*Tripleurospermum maritimum* subsp. *phaeocephalum*					×			×	×		2	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Betulaceae	*Alnus alnobetula*			×	×						×	1	species
Betulaceae	*Betula glandulosa*					×	×	×	×	×	×	9	species
Betulaceae	*Betula occidentalis*			×	×			×	×	×	×	8	species
Boraginaceae	*Mertensia maritima* subsp. *tenella*					×				×		3	species
Brassicaceae	*Braya glabella* subsp. *glabella*					×	×				×	2	species
Brassicaceae	*Braya humilis* subsp. *humilis*			×			×	×		×	×	8	species
Brassicaceae	*Cardamine bellidifolia*			×			×				×	2	species
Brassicaceae	*Cardamine digitata*					×	×	×	×	×	×	6	species
Brassicaceae	*Cardamine nymanii*					×	×	×	×	×	×	6	species
Brassicaceae	*Descurainia sophioides*					×	×		×	×	×	13	species
Brassicaceae	*Draba cinerea*					×	×		×	×	×	10	species
Brassicaceae	*Draba fladnizensis*					×		×	×	×	×	6	species
Brassicaceae	*Draba glabella*					×	×	×	×	×	×	25	species
Brassicaceae	*Draba lonchocarpa*	×	×	×	×		×	×		×	×	6	species
Brassicaceae	*Draba nivalis*			×					×	×		2	species
Brassicaceae	*Draba pilosa*					×	×	×	×	×	×	7	species
Brassicaceae	*Draba simmonsii*		×	×	×		×				×	1	species
Brassicaceae	*Erysimum coarctatum*			×			×	×		×	×	10	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Brassicaceae	*Erysimum pallasi*			×						×		1	species
Brassicaceae	*Eutrema edwardsii*			×			×				×	2	species
Brassicaceae	*Physaria arctica*			×						×	×	3	species
Brassicaceae	*Transberingia bursifolia*					×			×	×		2	species
Campanulaceae	*Campanula uniflora*			×			×	×		×	×	4	species
Caryophyllaceae	*Arenaria humifusa*					×	×		×	×	×	4	species
Caryophyllaceae	*Cerastium alpinum* subsp. *alpinum*					×	×	×	×	×	×	4	species
Caryophyllaceae	*Cerastium beeringianum*					×	×	×	×	×	×	10	species
Caryophyllaceae	*Eremogone capillaris* subsp. *capillaris*	×	×	×	×						×	1	species
Caryophyllaceae	*Honckenya peploides* subsp. *diffusa*					×			×	×		5	species
Caryophyllaceae	*Minuartia biflora*					×	×		×*	×	×	5	species
Caryophyllaceae	*Sabulina elegans*	×	×	×	×		×		×	×	×	4	species
Caryophyllaceae	*Sabulina rossii*			×			×				×	1	species
Caryophyllaceae	*Sabulina rubella*					×	×	×	×	×	×	15	species
Caryophyllaceae	*Sabulina stricta*			×			×				×	5	species
Caryophyllaceae	*Sagina nodosa* subsp. *borealis*			×	×			×	×	×		2	species
Caryophyllaceae	*Silene acaulis*					×	×	×	×	×	×	10	species
Caryophyllaceae	*Silene involucrata* subsp.					×	×	×	×	×	×	5	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
	tenella												
Caryophyllaceae	*Silene uralensis* subsp. *uralensis*					×	×	×	×	×	×	8	species
Caryophyllaceae	*Stellaria borealis* subsp. *borealis*			×	×		×				×	1	species
Caryophyllaceae	*Stellaria crassifolia*			×	×		×	×		×		2	species
Caryophyllaceae	*Stellaria humifusa*					×*			×*	×		2	species
Caryophyllaceae	*Stellaria longipes*					×	×	×	×	×	×	15	species
Chenopodiaceae	*Suaeda calceoliformis*					×				×		2	species
Elaeagnaceae	*Shepherdia canadensis*			×	×		×	×		×	×	7	species
Ericaceae	*Andromeda polifolia*					×	×	×	×	×	×	9	species
Ericaceae	*Arctostaphylos uva-ursi*			×	×						×	1	species
Ericaceae	*Arctous alpina*					×			×	×		4	species
Ericaceae	*Arctous rubra*					×	×	×	×	×	×	4	species
Ericaceae	*Cassiope tetragona* subsp. *tetragona*					×	×	×	×	×	×	9	species
Ericaceae	*Empetrum nigrum*					×	×	×	×	×	×	6	species
Ericaceae	*Kalmia procumbens*					×*			×*	×*	×	1	species
Ericaceae	*Orthilia secunda* subsp. *obtusata*					×	×	×	×	×	×	8	species
Ericaceae	*Pyrola grandiflora* subsp. *grandiflora*					×	×	×	×	×	×	8	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Ericaceae	*Rhododendron groenlandicum*			×	×		×	×		×	×	5	species
Ericaceae	*Rhododendron lapponicum*					×	×	×	×	×	×	5	species
Ericaceae	*Rhododendron tomentosum* subsp. *decumbens*					×	×	×	×	×	×	8	species
Ericaceae	*Vaccinium uliginosum*					×	×	×	×	×	×	8	species
Ericaceae	*Vaccinium vitis-idaea* subsp. *minus*					×	×	×	×	×	×	6	species
Fabaceae	*Astragalus alpinus*					×	×	×	×	×	×	12	species
Fabaceae	*Astragalus richardsonii*					×	×	×	×	×	×	11	species
Fabaceae	*Hedysarum americanum*					×	×	×	×	×	×	9	species
Fabaceae	*Hedysarum boreale* subsp. *mackenziei*					×	×	×		×	×	6	species
Fabaceae	*Lathyrus japonicus*					×	×			×		5	species
Fabaceae	*Lupinus arcticus*					×	×	×	×	×	×	9	species
Fabaceae	*Oxytropis arctica*					×	×		×	×	×	4	species
Fabaceae	*Oxytropis arctobia*					×		×		×		4	species
Fabaceae	*Oxytropis deflexa* subsp. *foliolosa*					×	×	×	×	×	×	3	species
Fabaceae	*Oxytropis maydelliana*					×	×	×	×	×	×	8	species
Fabaceae	*Oxytropis varians*					×	×	×	×*	×	×	4	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Gentianaceae	*Comastoma tenellum*					×*			×	×		1	species
Gentianaceae	*Gentianella propinqua* subsp. *propinqua*					×	×	×	×	×	×	10	species
Gentianaceae	*Gentianopsis detonsa* subsp. *detonsa*					×			×	×		2	species
Gentianaceae	*Lomatogonium rotatum* subsp. *rotatum*					×				×		1	species
Haloragaceae	*Myriophyllum sibiricum*			×				×		×		1	species
Lentibulariaceae	*Pinguicula villosa*			×	×		×			×	×	2	species
Lentibulariaceae	*Pinguicula vulgaris*					×	×	×	×	×	×	6	species
Lentibulariaceae	*Utricularia intermedia*			×	×		×				×	1	species
Lentibulariaceae	*Utricularia vulgaris*			×	×			×		×		1	species
Linaceae	*Linum lewisii* subsp. *lewisii*			×							×	1	species
Linnaeaceae	*Linnaea borealis* subsp. *americana*			×	×			×		×	×	5	species
Onagraceae	*Chamerion angustifolium* subsp. *angustifolium*					×	×	×	×	×	×	6	species
Onagraceae	*Chamerion latifolium*					×	×	×	×	×	×	9	species
Onagraceae	*Epilobium anagallidifolium*	×	×	×	×				×	×		1	species
Onagraceae	*Epilobium arcticum*			×	×			×		×		1	species
Onagraceae	*Epilobium davuricum*			×	×			×		×		1	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Onagraceae	*Epilobium palustre*					×		×	×	×		5	species
Orobanchaceae	*Castilleja caudata*			×			×	×	×	×	×	11	species
Orobanchaceae	*Castilleja elegans*					×			×	×		7	species
Orobanchaceae	*Castilleja raupii*			×	×			×	×	×	×	3	species
Orobanchaceae	*Pedicularis albolabiata*					×	×	×	×	×	×	11	species
Orobanchaceae	*Pedicularis arctoeuropaea*			×					×	×		2	species
Orobanchaceae	*Pedicularis capitata*					×	×	×	×	×	×	6	species
Orobanchaceae	*Pedicularis flammea*			×			×				×	1	species
Orobanchaceae	*Pedicularis labradorica*					×		×	×*	×	×	4	species
Orobanchaceae	*Pedicularis lanata*					×	×	×	×	×	×	7	species
Orobanchaceae	*Pedicularis langsdorffii* subsp. *arctica*					×	×	×	×	×	×	7	species
Orobanchaceae	*Pedicularis lapponica*					×	×	×	×	×	×	8	species
Papaveraceae	*Papaver hultenii*					×	×	×	×	×	×	11	species
Parnassiaceae	*Parnassia kotzebuei*					×	×	×	×	×	×	13	species
Parnassiaceae	*Parnassia palustris* subsp. *neogaea*					×		×	×	×		7	species
Plantaginaceae	*Hippuris lanceolata*			×						×		1	species
Plantaginaceae	*Hippuris vulgaris*			×				×	×	×		3	species
Plantaginaceae	*Plantago canescens* subsp. *richardsonii*					×	×	×	×	×	×	6	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Plumbaginaceae	*Armeria maritima* subsp. *sibirica*					×	×	×	×	×	×	13	species
Polygonaceae	*Bistorta vivipara*					×	×	×	×	×	×	7	species
Polygonaceae	*Koenigia islandica*					×			×	×		3	species
Polygonaceae	*Oxyria digyna*					×	×	×	×	×	×	8	species
Polygonaceae	*Polygonum aviculare*	×	×	×	×				×	×		1	species
Polygonaceae	*Rumex arcticus*					×	×	×	×	×	×	8	species
Primulaceae	*Androsace chamaejasme* subsp. *andersonii*					×			×	×		2	species
Primulaceae	*Androsace septentrionalis*					×	×		×	×	×	7	species
Primulaceae	*Primula egaliksensis*					×	×	×	×	×	×	8	species
Primulaceae	*Primula stricta*					×*				×		1	species
Ranunculaceae	*Anemone parviflora*					×	×	×	×	×	×	3	species
Ranunculaceae	*Anemone richardsonii*					×		×	×	×	×	6	species
Ranunculaceae	*Caltha palustris* subsp. *radicans*					×		×	×	×		7	species
Ranunculaceae	*Coptidium pallasii*					×			×	×		1	species
Ranunculaceae	*Halerpestes cymbalaria*					×				×		3	species
Ranunculaceae	*Ranunculus arcticus*					×		×	×	×	×	5	species
Ranunculaceae	*Ranunculus confervoides*			×	×			×		×		1	species
Ranunculaceae	*Ranunculus gmelinii*					×			×	×		4	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
	subsp. *gmelinii*												
Ranunculaceae	*Ranunculus hyperboreus* subsp. *hyperboreus*					×*			×	×		2	species
Ranunculaceae	*Ranunculus nivalis*					×*	×		×*	×*	×	2	species
Ranunculaceae	*Ranunculus pygmaeus*					×	×		×	×	×	3	species
Rosaceae	*Comarum palustre*			×					×	×		3	species
Rosaceae	*Dasiphora fruticosa*					×	×	×	×	×	×	10	species
Rosaceae	*Dryas integrifolia* subsp. *integrifolia*					×	×	×	×	×	×	7	species
Rosaceae	*Potentilla anserina* subsp. *groenlandica*			×						×		1	species
Rosaceae	*Potentilla arenosa* subsp. *arenosa*			×			×	×	×	×	×	7	species
Rosaceae	*Potentilla arenosa* subsp. *chamissonis*					×			×	×		1	subsp.
Rosaceae	*Potentilla arenosa* subsp. *chamissonis* × *Potentilla nivea*			×			×		×	×	×	4	hybrid
Rosaceae	*Potentilla biflora*			×			×				×	3	species
Rosaceae	*Potentilla hyparctica* subsp. *hyparctica*			×			×				×	2	species
Rosaceae	*Potentilla nivea*					×	×	×	×	×	×	8	species
Rosaceae	*Potentilla pulchella*			×						×		1	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Rosaceae	*Potentilla tikhomirovii*			×			×	×	×	×	×	8	species
Rosaceae	*Rubus arcticus* subsp. *acaulis*			×	×		×	×		×	×	4	species
Rosaceae	*Rubus chamaemorus*					×	×	×	×	×	×	6	species
Salicaceae	*Populus balsamifera*					×	×			×	×	2	species
Salicaceae	*Salix alaxensis* var. *alaxensis*					×	×	×	×	×	×	6	species
Salicaceae	*Salix arbusculoides*			×	×		×				×	1	species
Salicaceae	*Salix arctica*					×	×	×	×	×	×	18	species
Salicaceae	*Salix arctica x Salix arctophila*			×					×	×		2	hybrid
Salicaceae	*Salix arctophila*					×			×	×		5	species
Salicaceae	*Salix glauca* var. *cordifolia*					×	×	×	×	×	×	28	subsp.
Salicaceae	*Salix glauca* var. *glauca*			×				×		×		2	species
Salicaceae	*Salix niphoclada*					×	×	×	×	×	×	20	species
Salicaceae	*Salix niphoclada x Salix glauca*			×				×		×		2	hybrid
Salicaceae	*Salix ovalifolia* var. *arctolitoralis*	×	×	×	×				×	×		2	species
Salicaceae	*Salix ovalifolia* var. *ovalifolia*	×	×	×	×					×		1	subsp.
Salicaceae	*Salix planifolia*			×	×		×	×		×	×	4	species

Family	Taxon	Newly recorded for Nunavut	Newly recorded for mainland Nunavut	Newly recorded for study area	Range extension	Previously recorded	Fockler Creek	Kugluk/Bloody Falls Territorial Park	Kugluktuk	Arctic zone	Subarctic zone	Number of Collections	Rank
Salicaceae	*Salix pseudomyrsinites*		×	×	×					×		1	species
Salicaceae	*Salix pulchra*					×		×	×	×	×	7	species
Salicaceae	*Salix reticulata*					×	×	×	×	×	×	10	species
Salicaceae	*Salix richardsonii*					×	×	×	×	×	×	15	species
Saxifragaceae	*Chrysosplenium rosendahlii*			×			×	×	×	×	×	8	species
Saxifragaceae	*Micranthes foliolosa*					×	×		×	×	×	5	species
Saxifragaceae	*Micranthes nivalis*					×	×	×	×	×	×	8	species
Saxifragaceae	*Micranthes porsildiana*			×					×	×		2	species
Saxifragaceae	*Saxifraga aizoides*					×	×	×	×	×	×	5	species
Saxifragaceae	*Saxifraga cernua*					×	×	×	×	×	×	14	species
Saxifragaceae	*Saxifraga hirculus*					×	×	×	×	×	×	9	species
Saxifragaceae	*Saxifraga hyperborea*					×	×		×	×	×	2	species
Saxifragaceae	*Saxifraga oppositifolia* subsp. *oppositifolia*					×	×	×	×	×	×	6	species
Saxifragaceae	*Saxifraga tricuspidata*					×	×	×	×	×	×	6	species
	TOTAL	**13**	**20**	**121**	**56**	**190**	**199**	**207**	**215**	**287**	**223**	**16 53**	

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Table 3(on next page)

Family, genus and species diversity in Arctic regions that have been studied floristically, including the study area (boldface).

1 **Table 3.** Family, genus and species diversity in Arctic regions that have been studied floristically, including the
2 study area (boldface).

Region	Ecozone	Families	Genera	Species	Taxa	Size of area (km^2)	Reference
Global Arctic	Arctic	91	420	2218	–	71,000,000 (Walker et al., 2005)	Elven et al. (2011)
Canadian Arctic Archipelago [1] (Nunavut and Northwest Territories)	Arctic	42	141	368	375	ca. 1,424,500	Gillespie et al. (2015)
Nunavut	Arctic and forest-tundra	65	226	629[2]	–	ca. 2,093,190	Brouillet et al. (2010+)[3]
Northwest Territories	Arctic and forest-tundra	92	390	1161	–	ca. 1,140,835	Brouillet et al. (2010+)[3]
Lower Coppermine River valley and vicinity (Nunavut)	**Arctic**	**45**	**134**	**301**	**312**	**ca. 1,000**	**Current study**
Kugluk (Bloody Falls) Territorial Park (Nunavut)	**Arctic**	**40**	**103**	**208**	**212**	**10**	**Current study**
Tuktut Nogait National Park and vicinity (Northwest Territories and Nunavut)	Arctic	43	119	265	268	ca. 33,000	Saarela et al. (2013a)
Tuktut Nogait National Park (Northwest Territories)	Arctic	35	101	215	215	ca. 18,181	Saarela et al. (2013a)
Wager Bay region (Nunavut)	Arctic	27	65	113		ca. 19,500	Cody et al. (1989)

Rankin Inlet (Nunavut)	Arctic	–[4]	–[4]	162	165	ca. 180	Korol (1992)
Bathurst Inlet (Nunavut) (including Hood River)	Arctic	–[4]	–[4]	240 (270)		ca. 27,336[5]	(Cody, 1954a; Cody et al., 1984; Gould & Walker, 1997; Porsild & Cody, 1980).
Chesterfield Inlet (Nunavut)	Arctic	–[4]	–[4]	160–180		–	(Polunin, 1940; Savile & Calder, 1952)
Nueltin Lake (Nunavut)	Forest-tundra	–[4]	–[4]	134		ca. 264[6]	Porsild (1950b)
Ivvavik National Park (Yukon)	Arctic			414		10,168	Bennett (2008)

[1]This region does not include the non-Arctic Islands in James Bay that are part of Nunavut.
[2]Not including new species recorded here for Nunavut.
[3]VASCAN, accessed 13 January 2016.
[4]Family and genus counts not given in the relevant papers, and not scored here because genus- and family-level taxonomy has changed considerably compared to more recent studies, since 2010.
[5]Area estimated from map in Cody et al. (1984).
[6]Area estimated from map in Porsild (1950b).

Figure 1

Map of Canada showing the location of the lower Coppermine River and vicinity (the study area) in western Nunavut.

Red lines delimit the Canadian Arctic Ecozone, according to the Circumpolar Arctic Vegetation Map (CAVM Team 2003).

Figure 2

Rapids on Coppermine River.

A. Sandstone Rapids along the Coppermine River. The upper slopes on the east side of the river are dominated by white spruce. B. Waterfall flowing into the Coppermine River at the start of Escape Rapids, looking east. C. Start of Muskox Rapids looking north along the Coppermine River. Photographs by P.C. Sokoloff (A, B) and R.D. Bull (C).

A
B
C

Figure 3

Map showing the extent of our study area along the lower Coppermine River and vicinity.

Orange circles denote 2014 collecting sites. Limits of the Fockler Creek area and Kugluktuk study sites are indicated with white squares. The inset shows the boundaries of Kugluk (Bloody Falls) Territorial Park. The red line delimits the Canadian Arctic Ecozone, according to the Circumpolar Arctic Vegetation Map (CAVM Team 2003). All collections from Fockler Creek and sites to the south are part of the Subarctic forest-tundra.

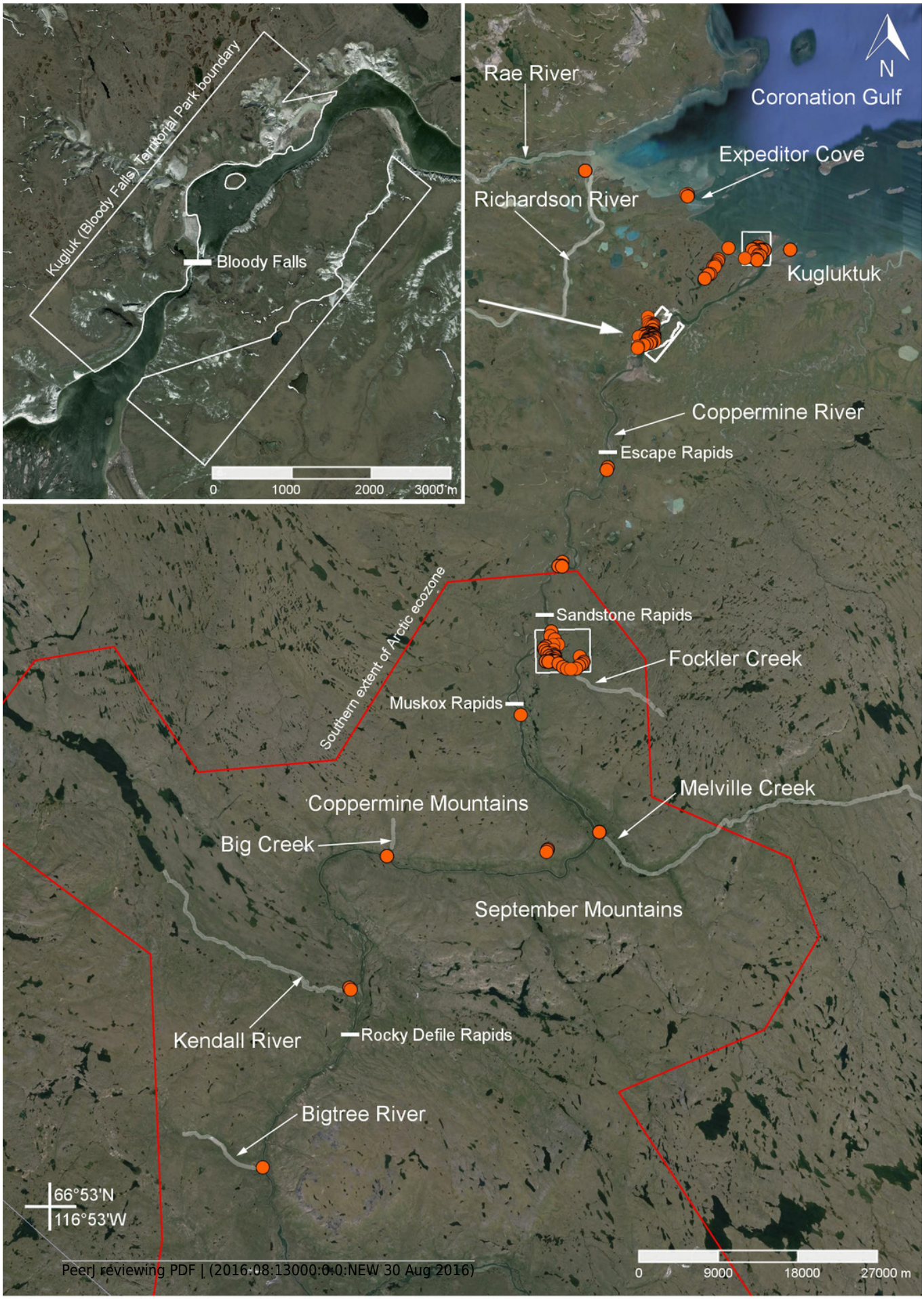
Kugluk (Bloody Falls) Territorial Park boundary
Bloody Falls
0 1000 2000 3000 m
Rae River
N
Coronation Gulf
Expeditor Cove
Richardson River
Kugluktuk
Coppermine River
Escape Rapids
Sandstone Rapids
Fockler Creek
Muskox Rapids
Southern extent of Arctic ecozone
Melville Creek
Coppermine Mountains
Big Creek
September Mountains
Kendall River
Rocky Defile Rapids
Bigtree River
66°53'N
116°53'W
0 9000 18000 27000 m

Figure 4

Kugluk (Bloody Falls) Territorial Park.

A. Rocky beach just above the start of Bloody Falls on the Coppermine River in Kugluk (Bloody Falls) Territorial Park. The fast-moving rapids of Bloody Falls are the result of a narrow and rapid descent of the river that starts here. The gorge through which the Coppermine River flows, forming the rapids, was cut through a bedrock sill (gabbro), demarcated in this photo by the vertical cliffs. The upland tundra on the east side of the Coppermine River (top of photo) is not part of Kugluk (Bloody Falls) Territorial Park. B. Shrub tundra and sand dunes along Coppermine River valley in Kugluk (Bloody Falls) Territorial Park, looking northeast. The broad Coppermine River in the centre of the photo is just below Bloody Falls. C. A braided stream at the bottom of a deep gully in Kugluk (Bloody Falls) Territorial Park. D. One of two small ponds just west of Bloody Falls in Kugluk (Bloody Falls) Territorial Park. Photographs by R.D. Bull (A), P.C. Sokoloff (B) and J.M. Saarela (C, D).

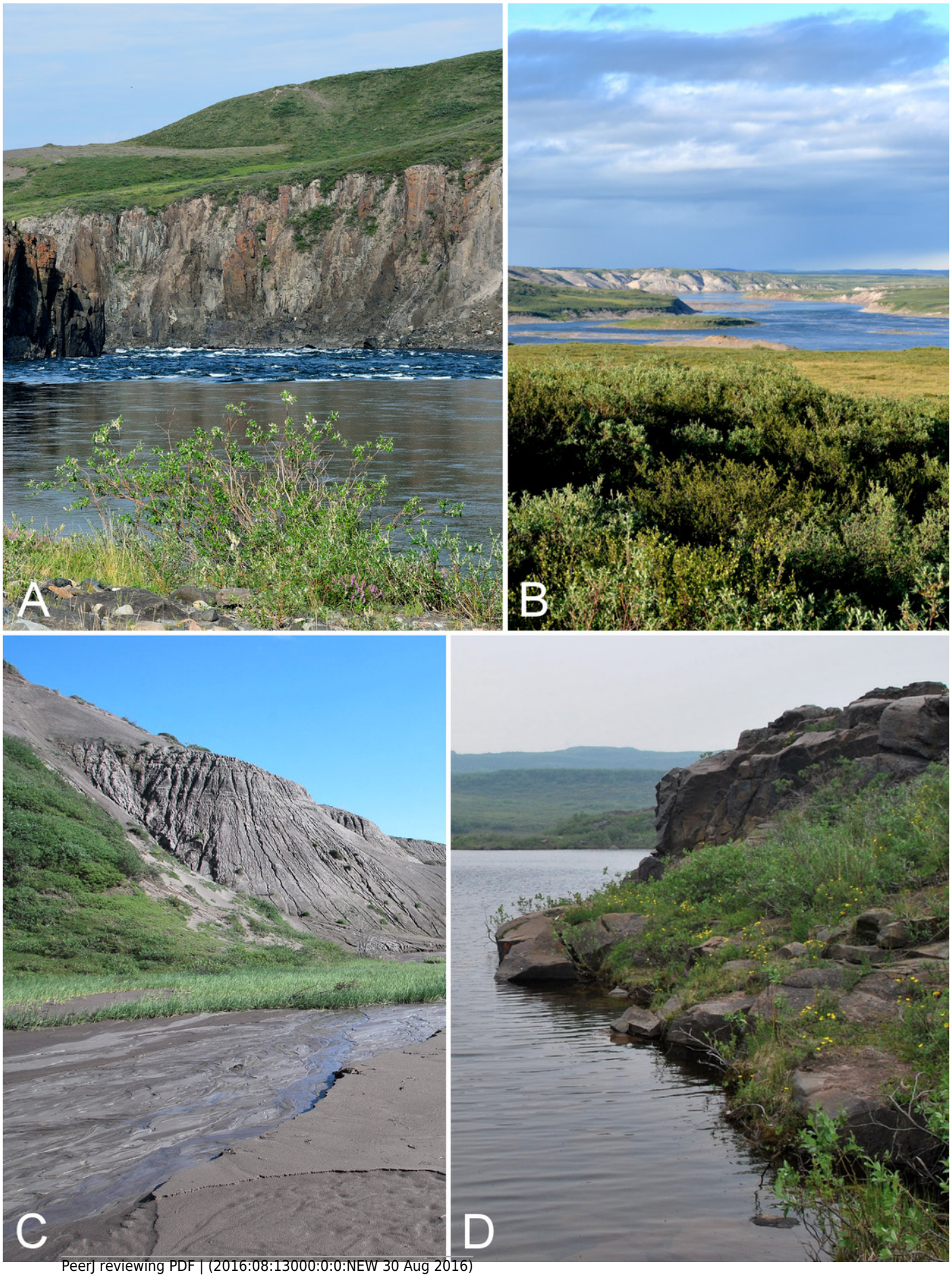
A
B
C
D

Figure 5

Coppermine River.

A. Forest-tundra along the Coppermine River at the start of Rocky Defile Rapids. B. South-facing slopes on W side of Coppermine River, about halfway between Escape Rapids and Muskox Rapids (ca. 67°31'18.2"N, 115°36'20.1"W). This is just north of the southern limit of the Arctic ecozone. Habitat comprises scattered white spruce (*Picea glauca*) and shrub tundra. *Sparganium hyperboreum* was collected in the pond in the foreground. C. White spruce forest along Coppermine River ca. 7.8 km NNE of Sandstone Rapids, just north of the southern limit of the Arctic ecozone. D. Tundra and clay mounds along east side of Coppermine River, south of Bloody Falls. Photographs by J.M. Saarela (A, D) and P.C. Sokoloff (B, C).

A
B
C
D

Figure 6

Maps showing the locations of three main study areas.

A. Fockler Creek area. B. Kugluk (Bloody Falls) Territorial Park and vicinity (sites on the east side of the Coppermine River are outside the park boundary). C. Kugluktuk. Orange circles denote 2014 collecting sites. Circle size is correlated with the number of collections per site (see legend). Map data: Google, SIO, NOAA, U.S. Navy, NGA, GEBCO, Landsat.

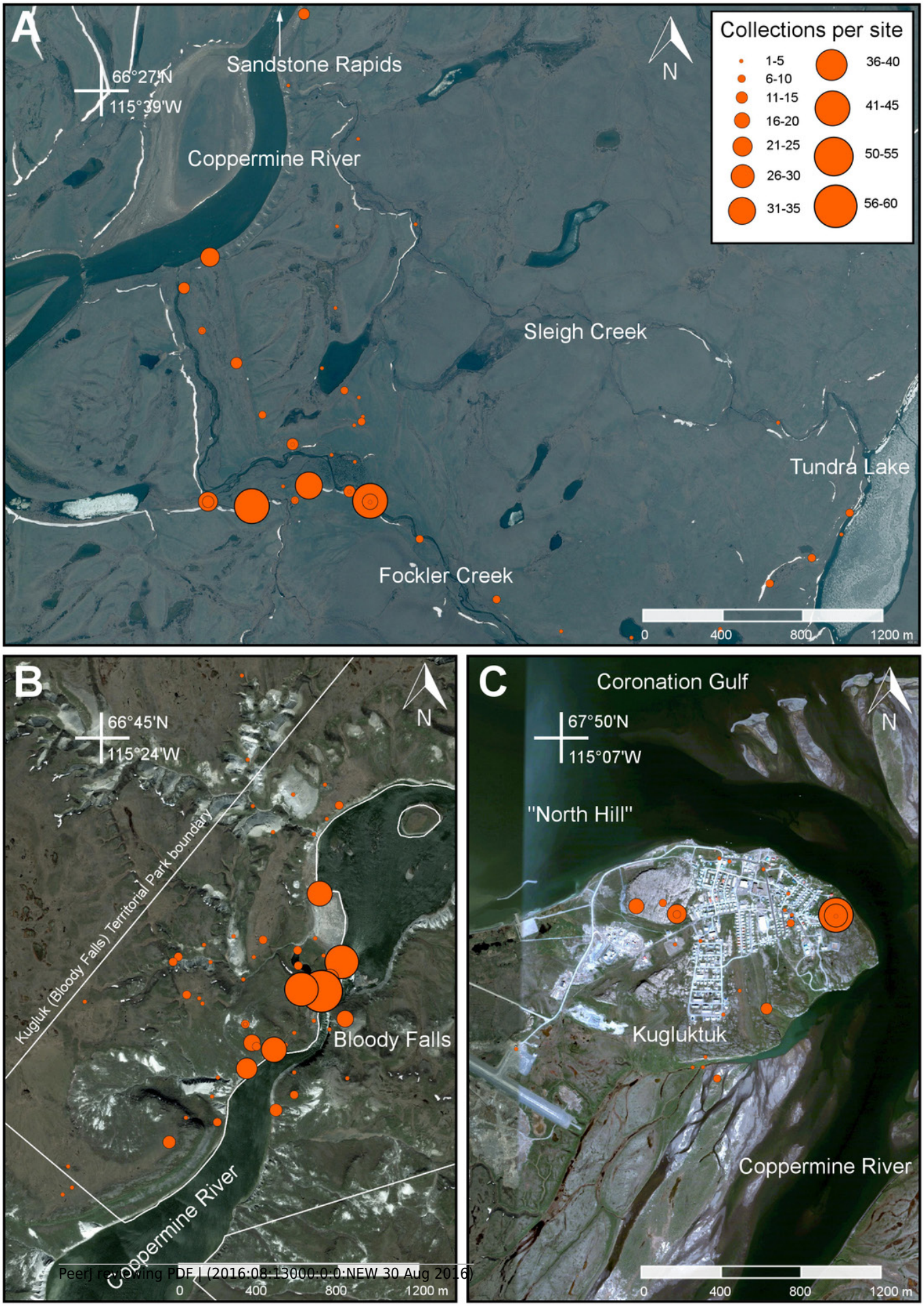
A
66°27'N
115°39'W
Sandstone Rapids
Coppermine River
N
Collections per site
1-5
6-10
11-15
16-20
21-25
26-30
31-35
36-40
41-45
50-55
56-60
Sleigh Creek
Tundra Lake
Fockler Creek
0
400
800
1200 m
B
66°45'N
115°24'W
N
Kugluk (Bloody Falls) Territorial Park boundary
Bloody Falls
Coppermine River
0
400
800
1200 m
C
Coronation Gulf
67°50'N
115°07'W
N
"North Hill"
Kugluktuk
Coppermine River
0
400
800
1200 m

Figure 7

Fockler Creek.

A. White spruce forest and rocky floodplain in the valley along Fockler Creek (ca. 67°25'49.50"N, 115°37'41.27"W), looking northwest. B. White spruce forest-tundra along Fockler Creek, looking northwest. C. Shrub tundra and white spruce forest in the valley on the north side of Fockler Creek. D. Meadow along a small unnamed creek just south of Fockler Creek, looking north. A small stand of balsam poplar (*Populus balsamifera*) is present to the right of the white spruce stand on the south-facing slope above the creek. Photographs by P.C. Sokoloff (A), R.D Bull (B) and J.M. Saarela (C, D).

A
B
C
D

Figure 8

Big Creek.

A. Forest-tundra along Big Creek. Dominant species include *Picea glauca*, *Salix glauca*, *Rhododendron tomentosum* subsp. *decumbens* (white flowers) and *Dasiphora fruticosa* (yellow flowers). B. Forest-tundra on slopes above Big Creek. Dominant species include *Picea glauca*, *Salix glauca*, *Hedysarum americanum* and *Rhododendron lapponicum*. Photographs by J.M. Saarela.

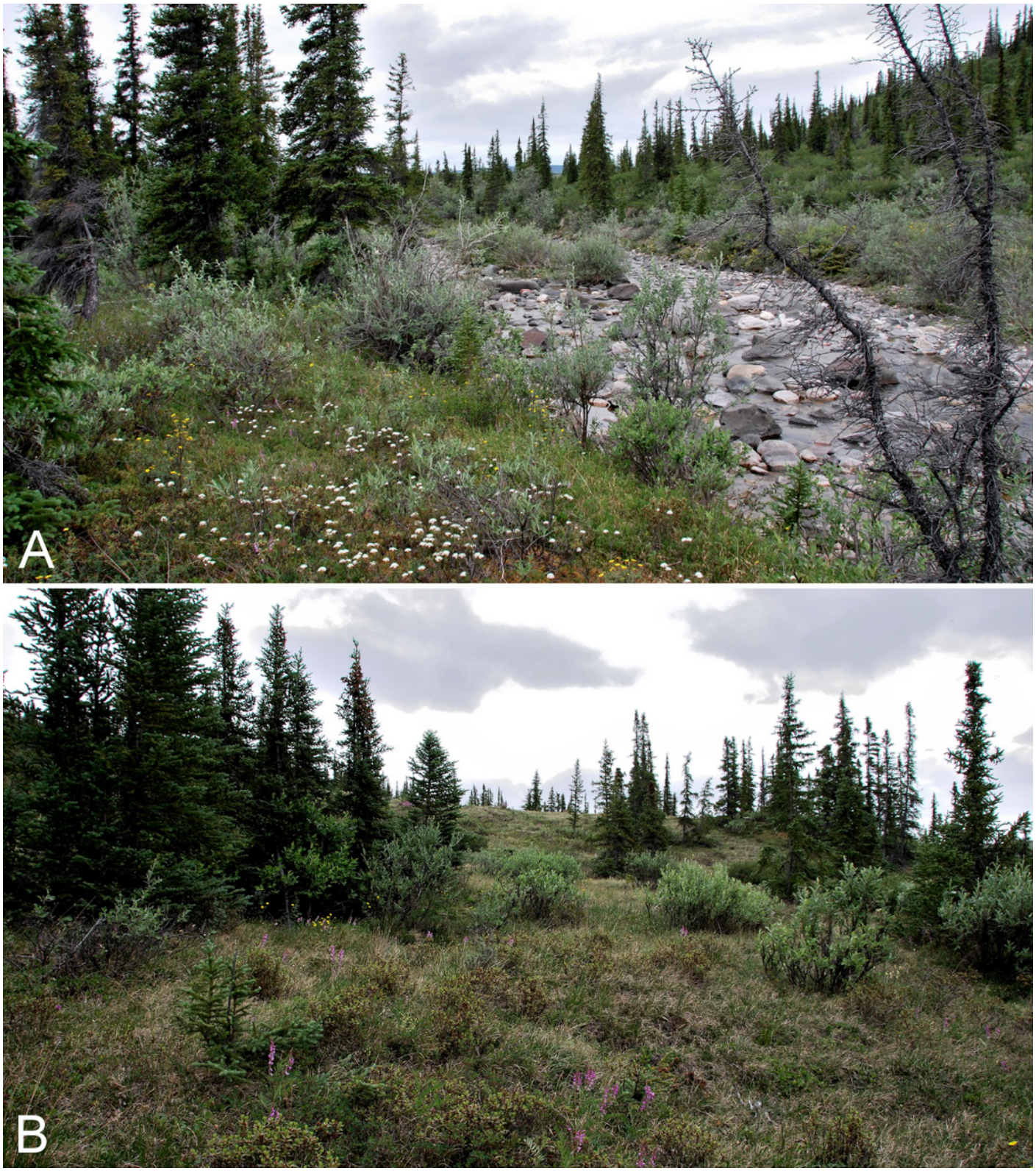
A
B

Figure 9

Melville Creek.

A. Just east of Melville Creek's confluence with the Coppermine River. The rocky shore along the edge of the river transitions to shrub tundra with scattered white spruce, and upland areas on the north and south side (not shown) of the river are dominated by white spruce. B. Scattered white spruce forest in the forest-tundra. Melville Creek is in the foreground, Coppermine River is in the background, looking north. Photographs by P.C. Sokoloff (A) and R. D. Bull (B).

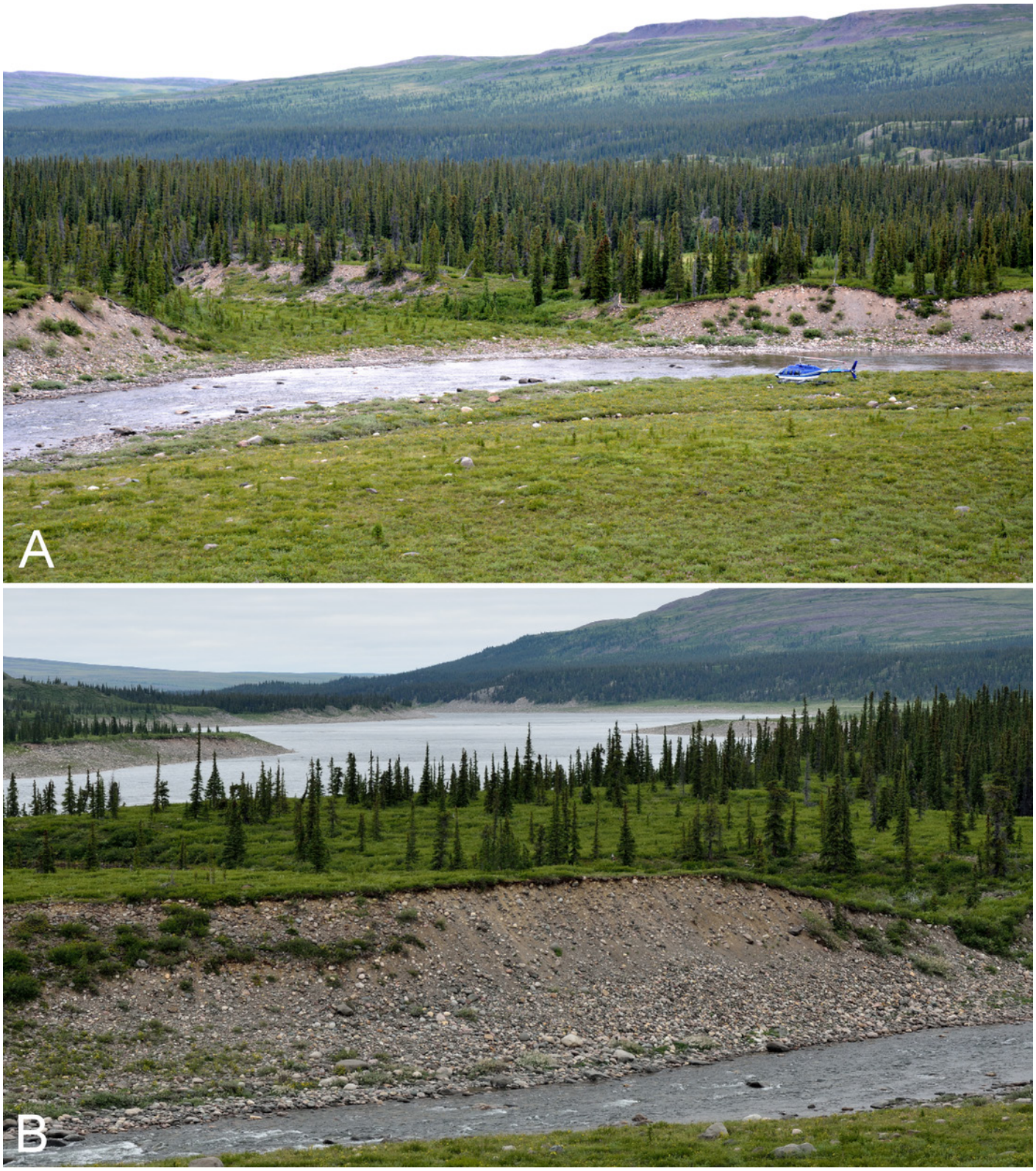
A
B

Figure 10

Coppermine Mountains.

A. The Coppermine Mountains on the west side of the Coppermine River, looking northeast. B. View looking south from atop the Coppermine Mountains, overlooking the forest-tundra along the Coppermine River. Photographs by J.M. Saarela.

A
B

Figure 11

Kugluktuk.

A. Shrub tundra and rocky outcrop in Kugluktuk, looking north towards Coronation Gulf. B. Tundra in the valley in the southern part of Kugluktuk, between the power plant and the southwestern part of the community. C. Beach on a small unnamed island just northeast of Kugluktuk at the mouth of the Coppermine River. D. View of Kugluktuk facing east-southeast from the top of North Hill, a large gabbro sill in the northwest part of the community. Photographs by P.C. Sokoloff.

A
B
C
D

Figure 12

Rae River.

A. Tundra just above the mouth of the Rae River at Coronation Gulf. B. Low tundra flats at delta of Rae and Richardson rivers, facing south. Photographs by P.C. Sokoloff (A) and J.M. Saarela (B).

A
B

Figure 13

Equisetum arvense subsp. *alpestre, E. fluviatile* and *E. palustre.*

Equisetum arvense subsp. *alpestre*: A. habit, vicinity of lower Coppermine River, Nunavut, 67°45'2.41"N, 115°22'22.29"W, 17 July 2014*. Equisetum fluviatile*: B. habit, *Saarela et al. 3878.* C. habitat, *Saarela et al. 3878. Equisetum palustre*: D. habitat, vicinity of Bloody Falls, Kugluk (Bloody Falls) (Bloody Falls) Territorial Park, Nunavut, 13 July 2014. Photographs by R.D. Bull (A, D) and J.M. Saarela (B, C).

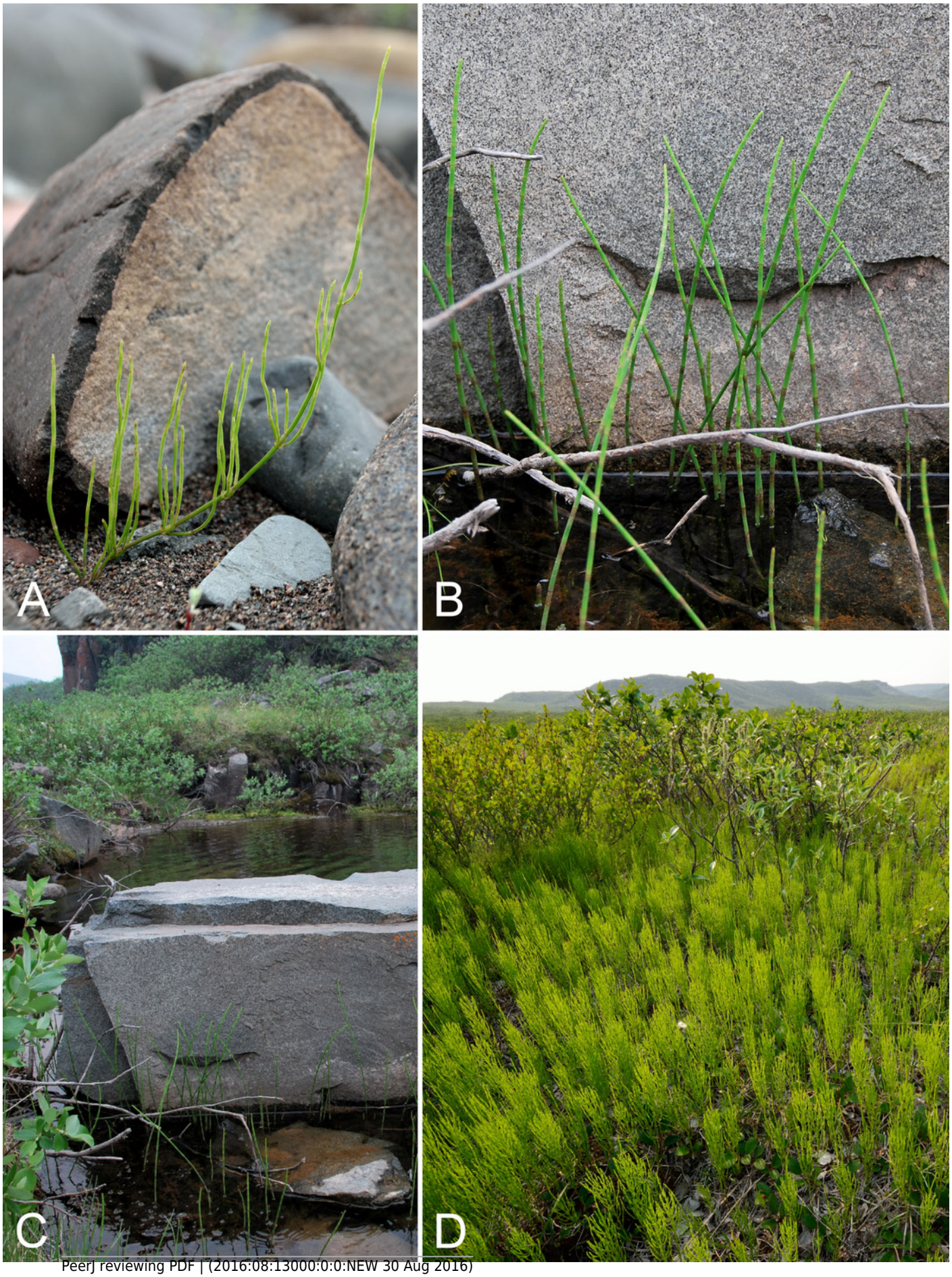
A
B
C
D

Figure 14

Botrychium minganense.

A. habit, *Saarela et al. 4179a.* B. habitat, *Saarela et al. 4179a.* Photographs by R.D. Bull.

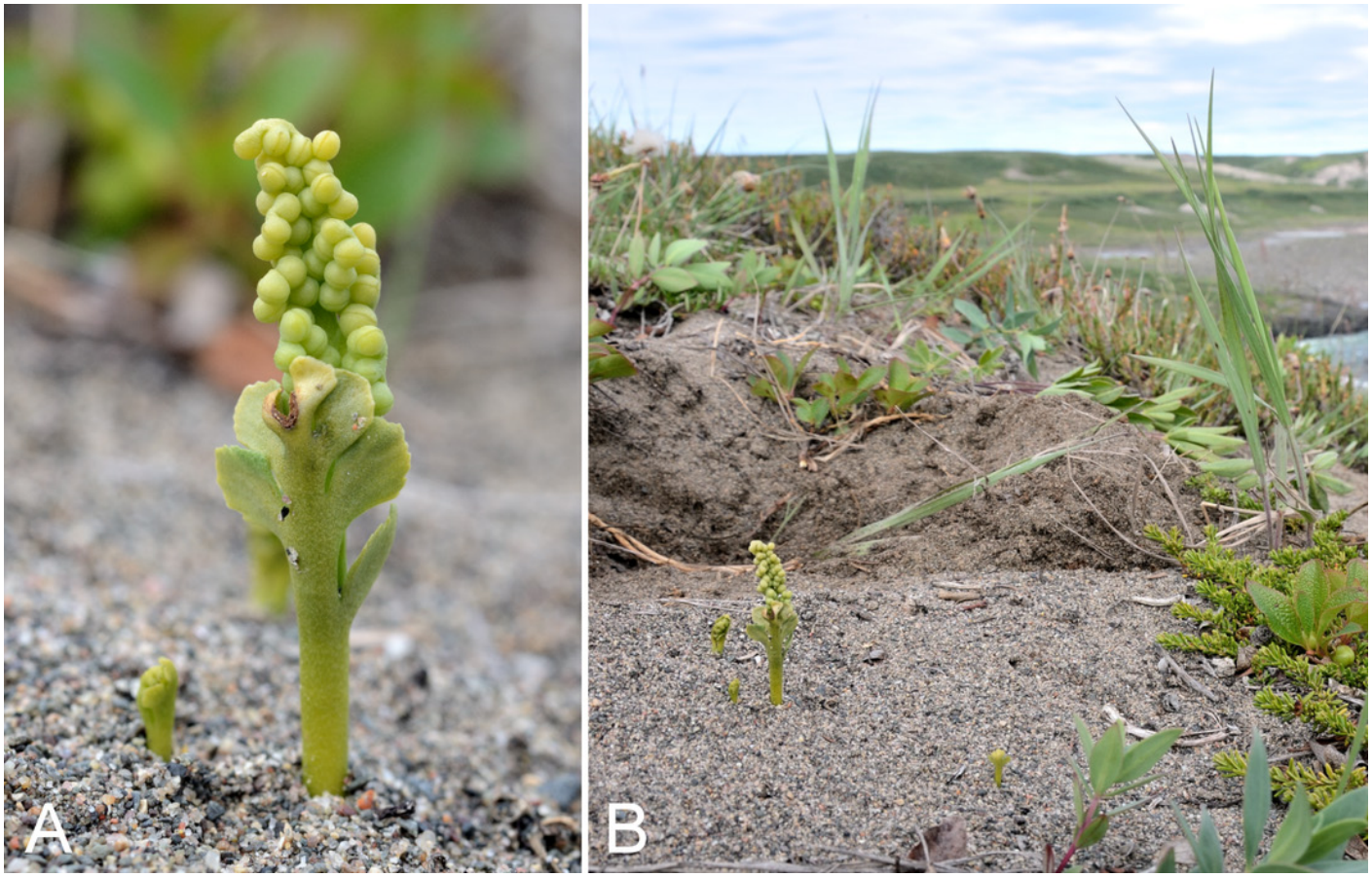

Figure 15

Neighbour-joining analyses (Jukes-Cantor substitution model) of new and previously published *psbA-trnH* and *rbcL* DNA sequences of *Botrychium*.

Newly sequenced individuals are in boldface. A. *psbA-trnH* dendrogram. B. *rbcL* dendrogram.

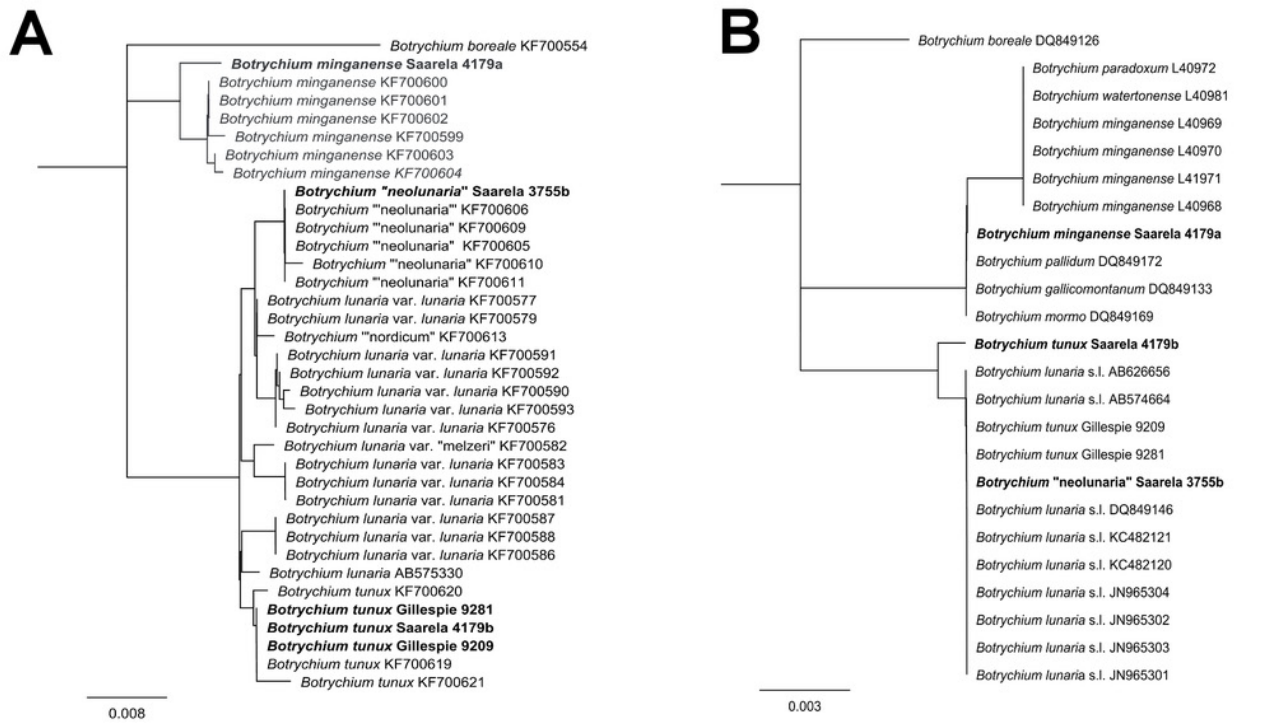

Figure 16

Botrychium tunux.

A. sporophore, *Saarela et al. 3755a.* B. sporophore, *Saarela et al. 4179b.* C. habitat, Coppermine Mountains, northwest of Coppermine River, Nunavut, 9 July 2014. Photographs by J.M. Saarela (A, C) and P.C. Sokoloff (B).

A
B
C

Figure 17

Cryptogramma stelleri and *Woodsia glabella*.

Cryptogramma stelleri: A. habit, *Saarela et al. 4076. Woodsia glabella*: B. habit, *Saarela et al. 3891.* Photographs by P.C. Sokoloff.

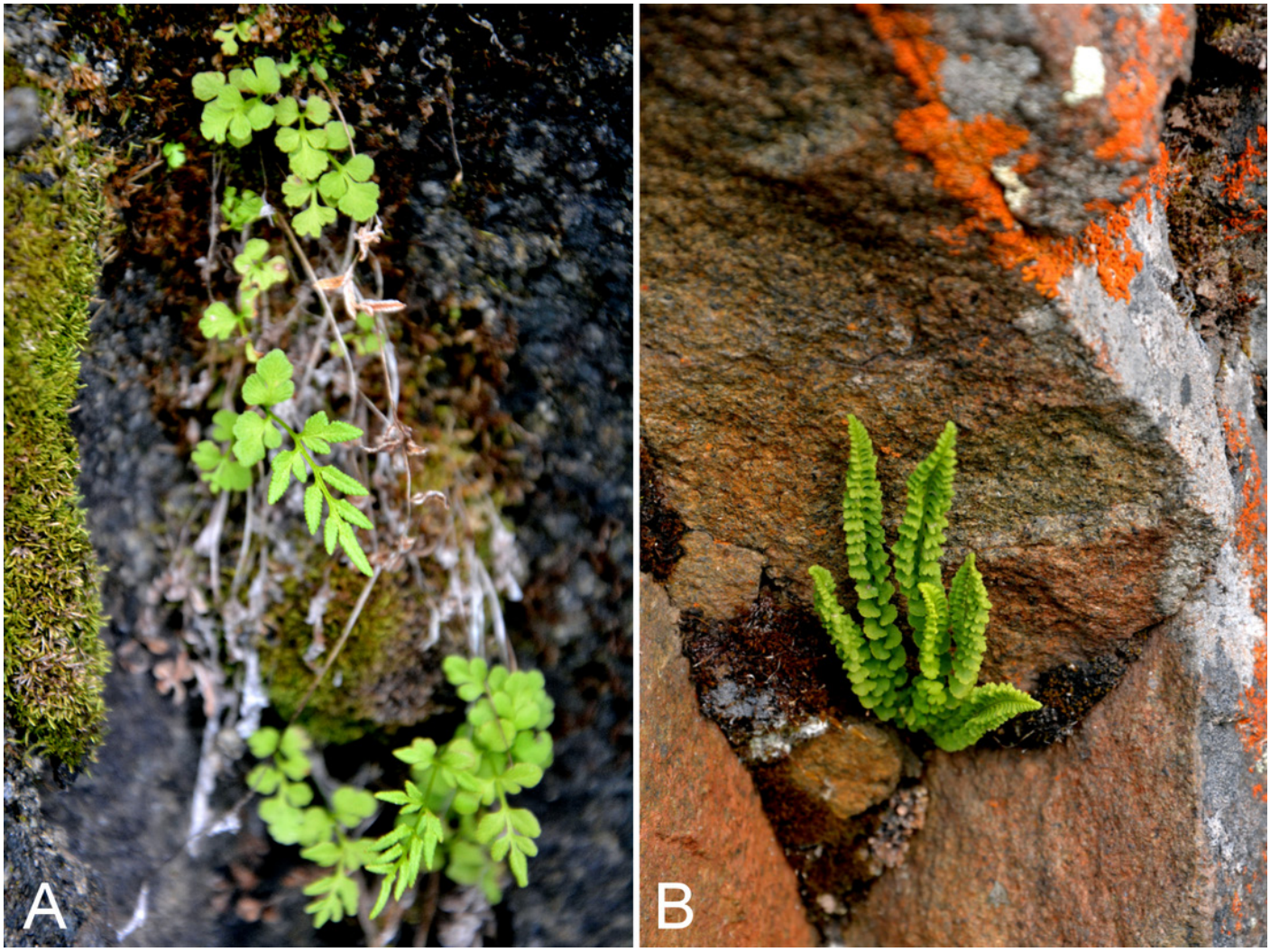

Figure 18

Juniperus communis subsp. *depressa* and *Picea glauca*.

Juniperus communis subsp. *depressa*: A. habitat, *Saarela et al. 3642.* B. cones, vicinity of lower Coppermine River, Nunavut, 7 July 2014. *Picea glauca:* C. cones, vicinity of Fockler Creek, Nunavut, 4 July 2014. D. habitat, vicinity of Fockler Creek, Nunavut, 5 July 2014. Photographs by J.M. Saarela (A) and R.D. Bull (B, C, D).

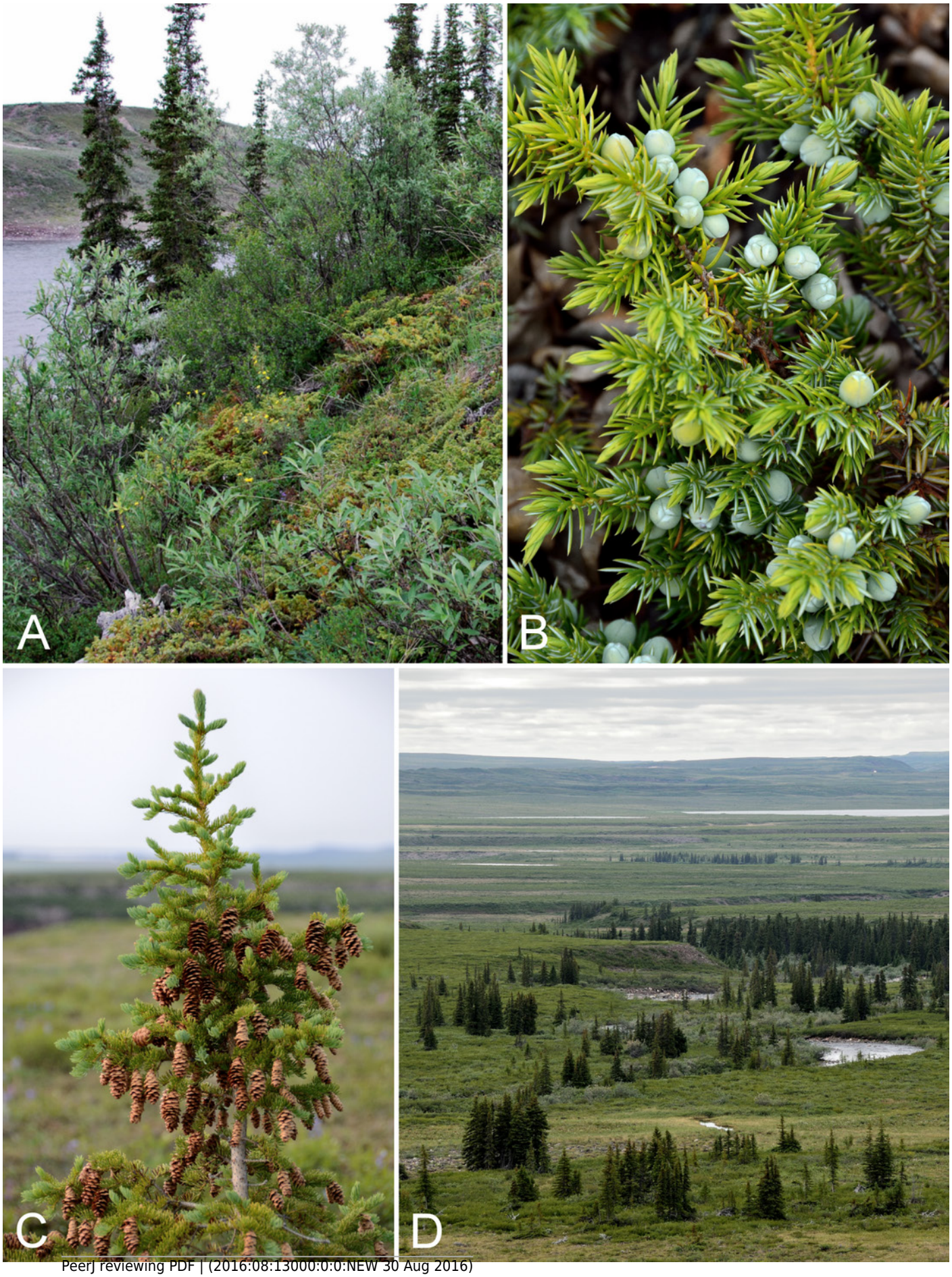
A
B
C
D

Figure 19

Allium schoenoprasum.

A. habit, *Saarela et al. 3935.* B. inflorescence, *Saarela et al. 3935.* C. habitat, *Saarela et al. 3935*. Photographs by R.D. Bull (A) and P.C. Sokoloff (B, C).

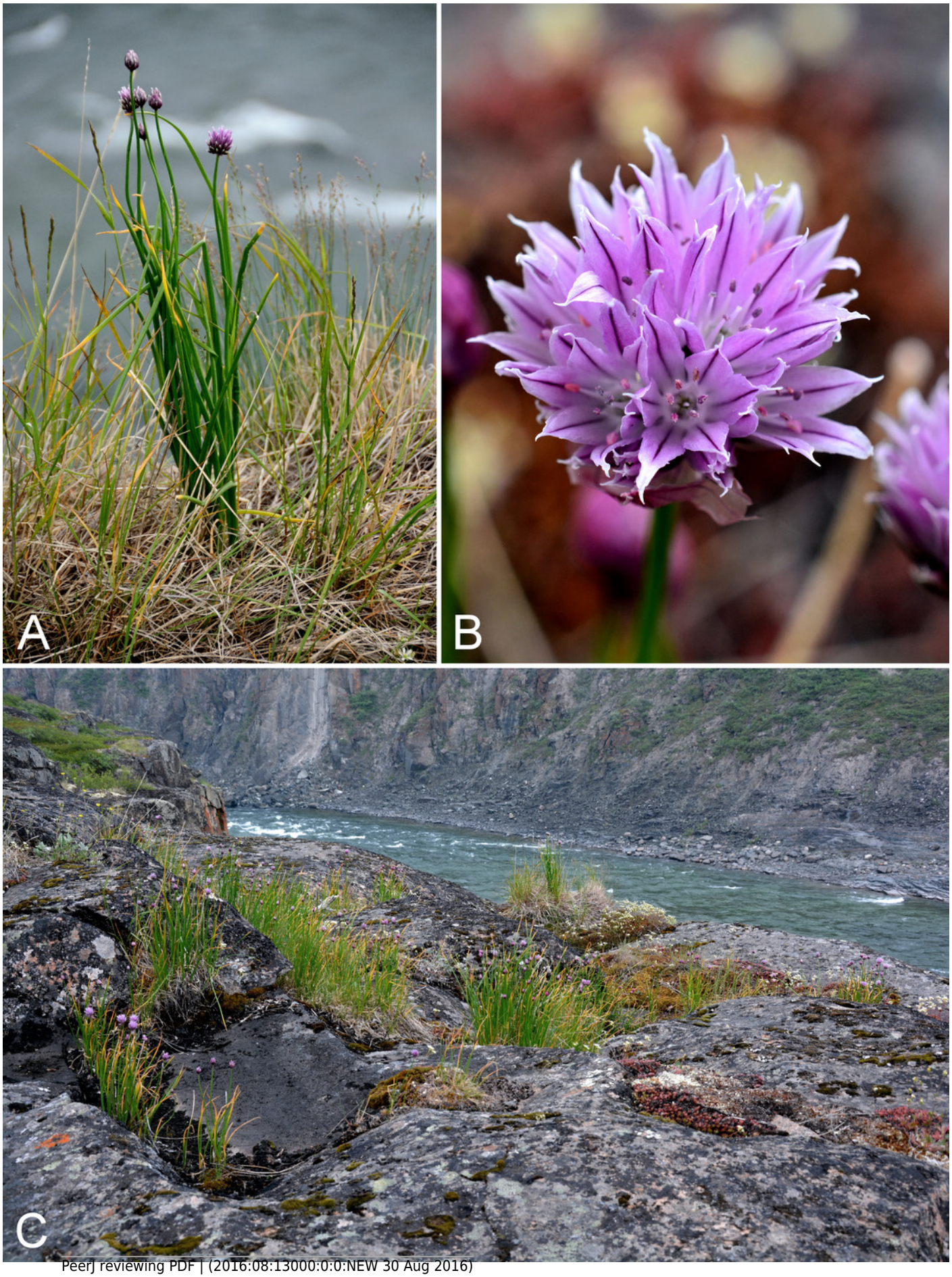
A
B
C

Figure 20

Carex aquatilis subsp. *stans* and *C. bicolor*.

Carex aquatilis subsp. *stans*: A. habit, *Saarela et al. 3585.* B. habitat, *Saarela et al. 3585.*

Carex bicolor: C. inflorescences, *Saarela et al. 3857.* D. habit, *Saarela et al. 3857.*

Photographs by J.M. Saarela.

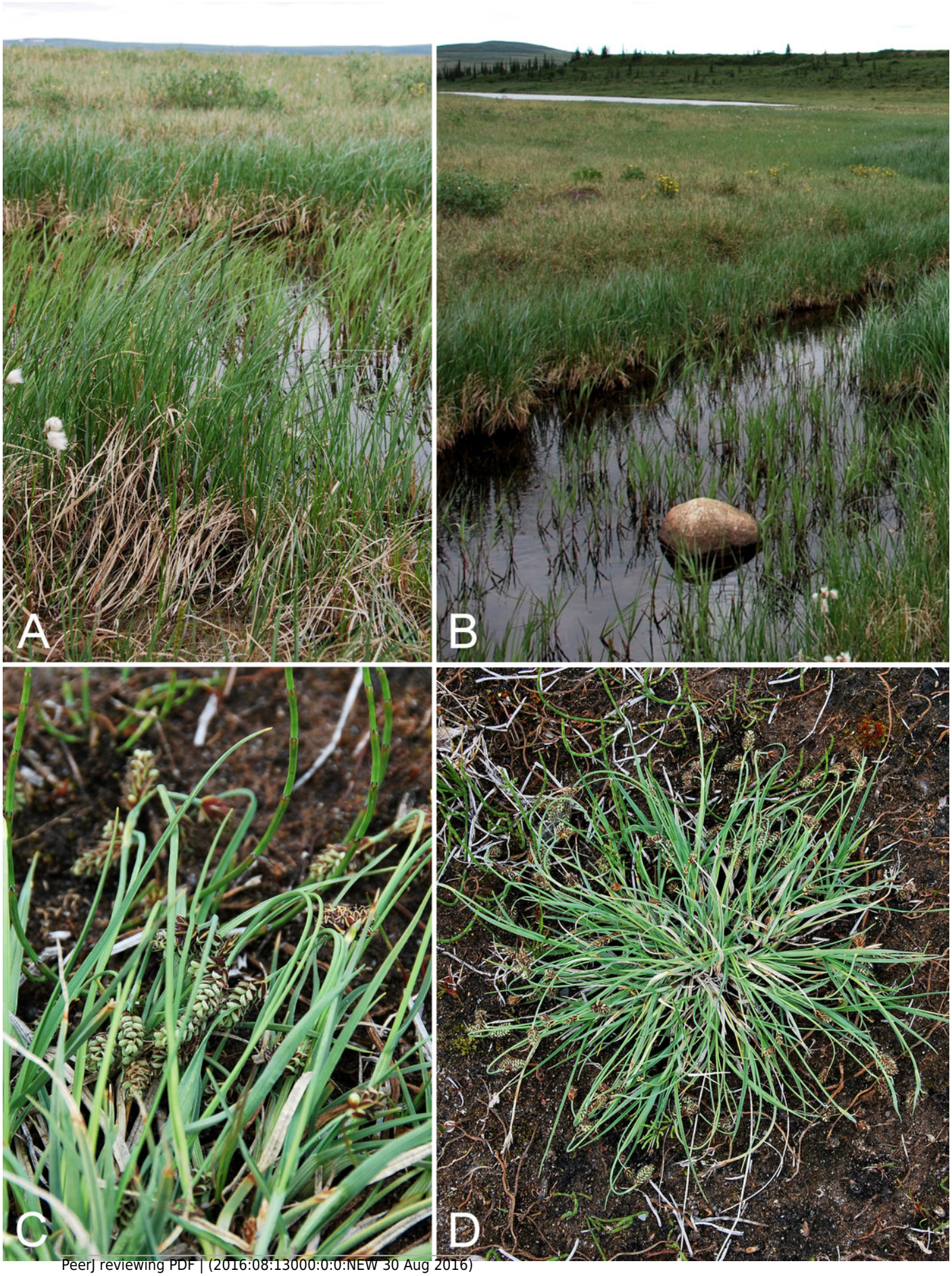
A
B
C
D

Figure 21

Carex capitata.

A. inflorescence, *Saarela et al. 3574*. B. habit, *Saarela et al. 3515.* Photographs by P.C. Sokoloff (A) and J.M. Saarela (B).

Figure 22

Carex concinna.

A. inflorescence, *Saarela et al. 3567.* B. habit, *Saarela et al. 3569.* Photographs by J.M. Saarela.

Figure 23

Carex gynocrates, *C. krausei* and *C. lachenallii*.

Carex gynocrates: A. inflorescence, *Saarela et al. 3276.* B. habit, *Saarela et al. 3276. Carex krausei* C. habit, *Saarela et al. 3856. Carex lachenallii*: D. habit, vicinity of Fockler Creek, Nunavut, 2 July 2014. Photographs by R.D. Bull (A, B) and J.M. Saarela (C, D).

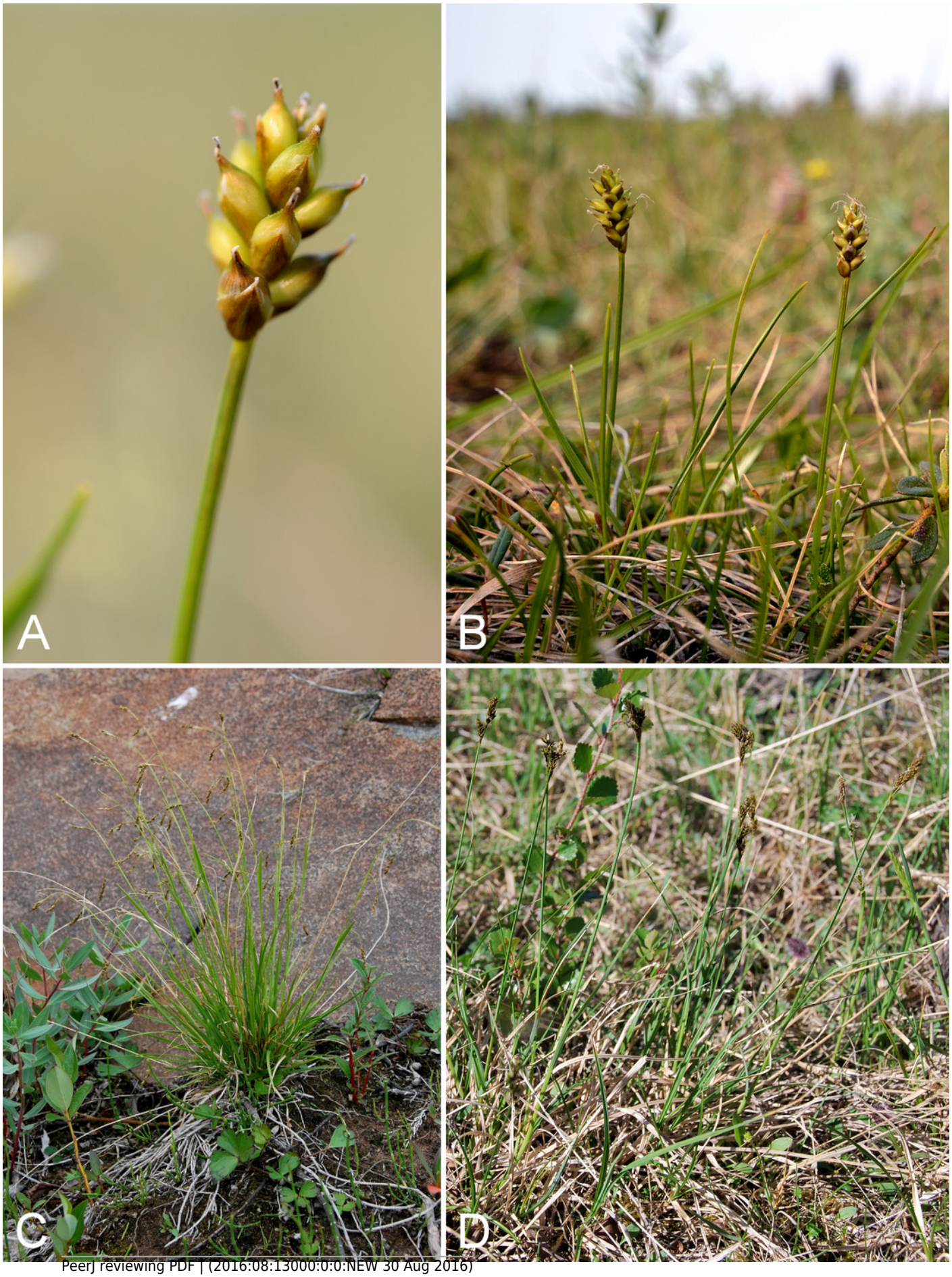
A
B
C
D

Figure 24

Carex petricosa subsp. *petricosa*.

A. inflorescence, *Saarela et al. 4173*. B. habitat, *Saarela et al. 3553.* Photographs by J.M. Saarela.

Figure 25

Carex podocarpa.

A. inflorescence, *Saarela et al. 3184.* B. habit, *Saarela et al. 4359.* Photographs by R.D. Bull (A) and P.C. Sokoloff (B).

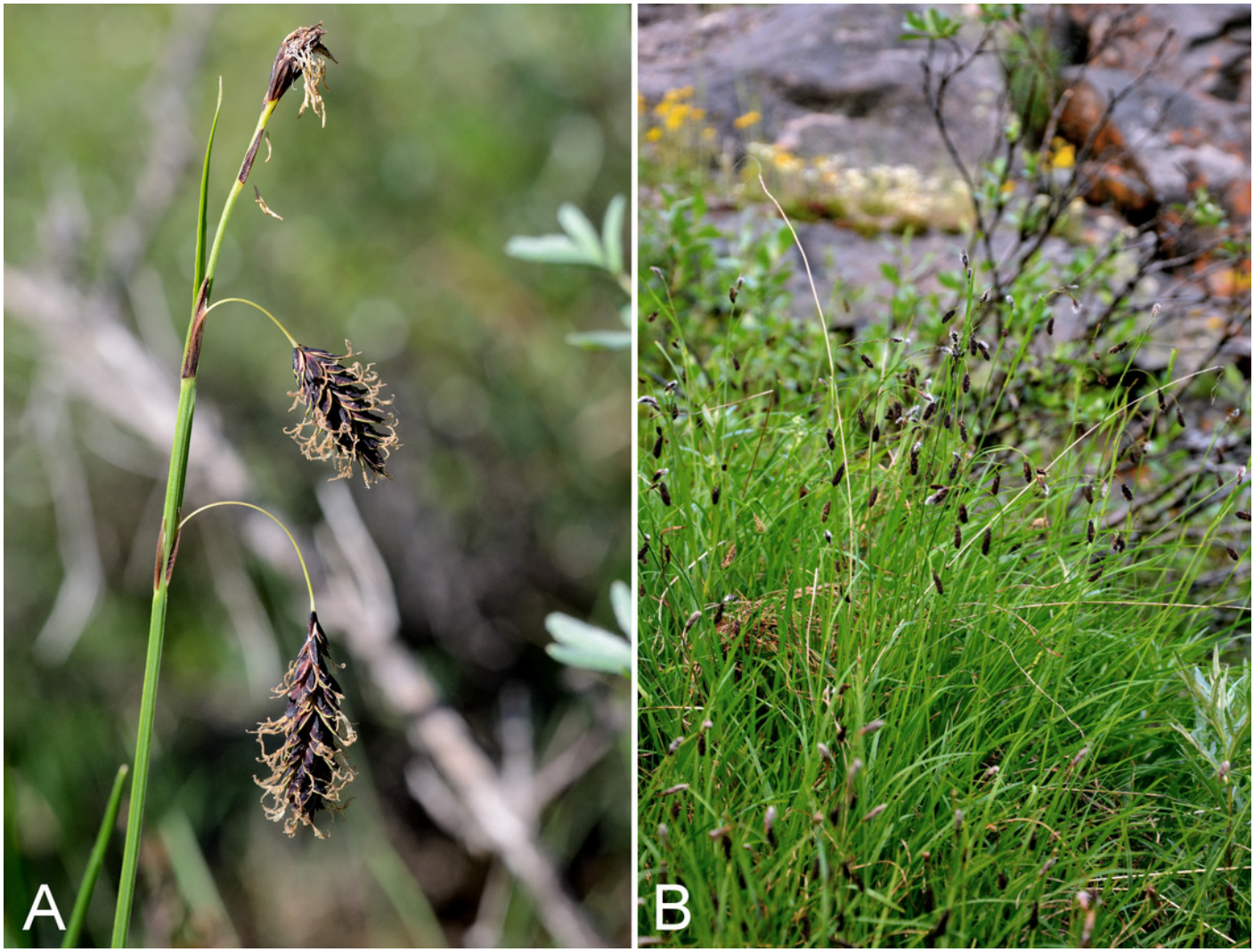

Figure 26

Eleocharis quinqueflora.

A. inflorescence, *Saarela et al. 3971.* B. habit, *Saarela et al. 3971.* Photographs by R.D. Bull.

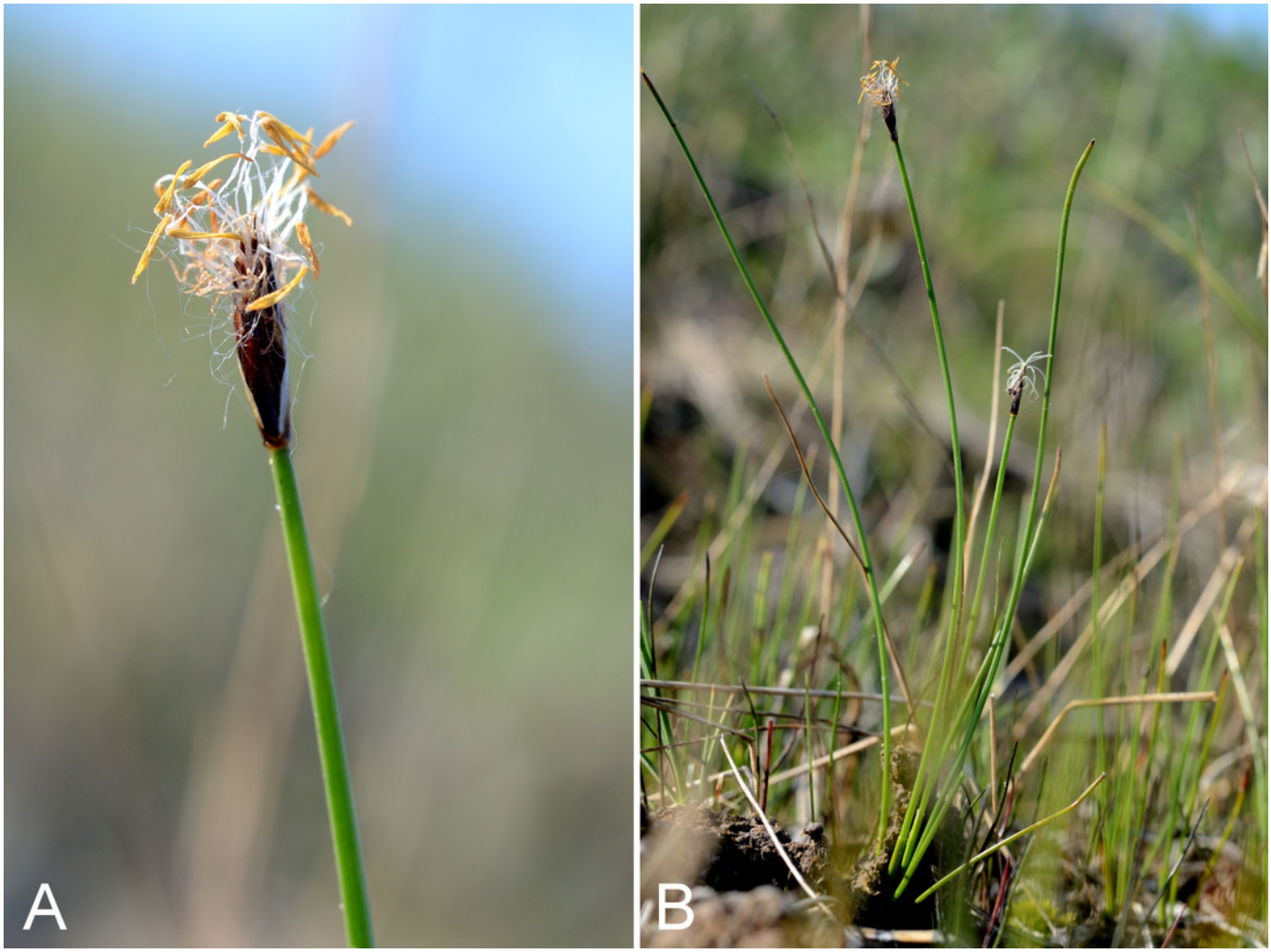

Figure 27

Eriophorum triste and *E. vaginatum* subsp. *vaginatum*.

Eriophorum triste: A. habitat, *Saarela et al. 4087.* B. inflorescence, *Saarela et al. 4087.* *Eriophorum vaginatum* subsp. *vaginatum*: C. habitat, *Saarela et al. 4055.* Photographs by P.C. Sokoloff (A, B) and J.M. Saarela (C).

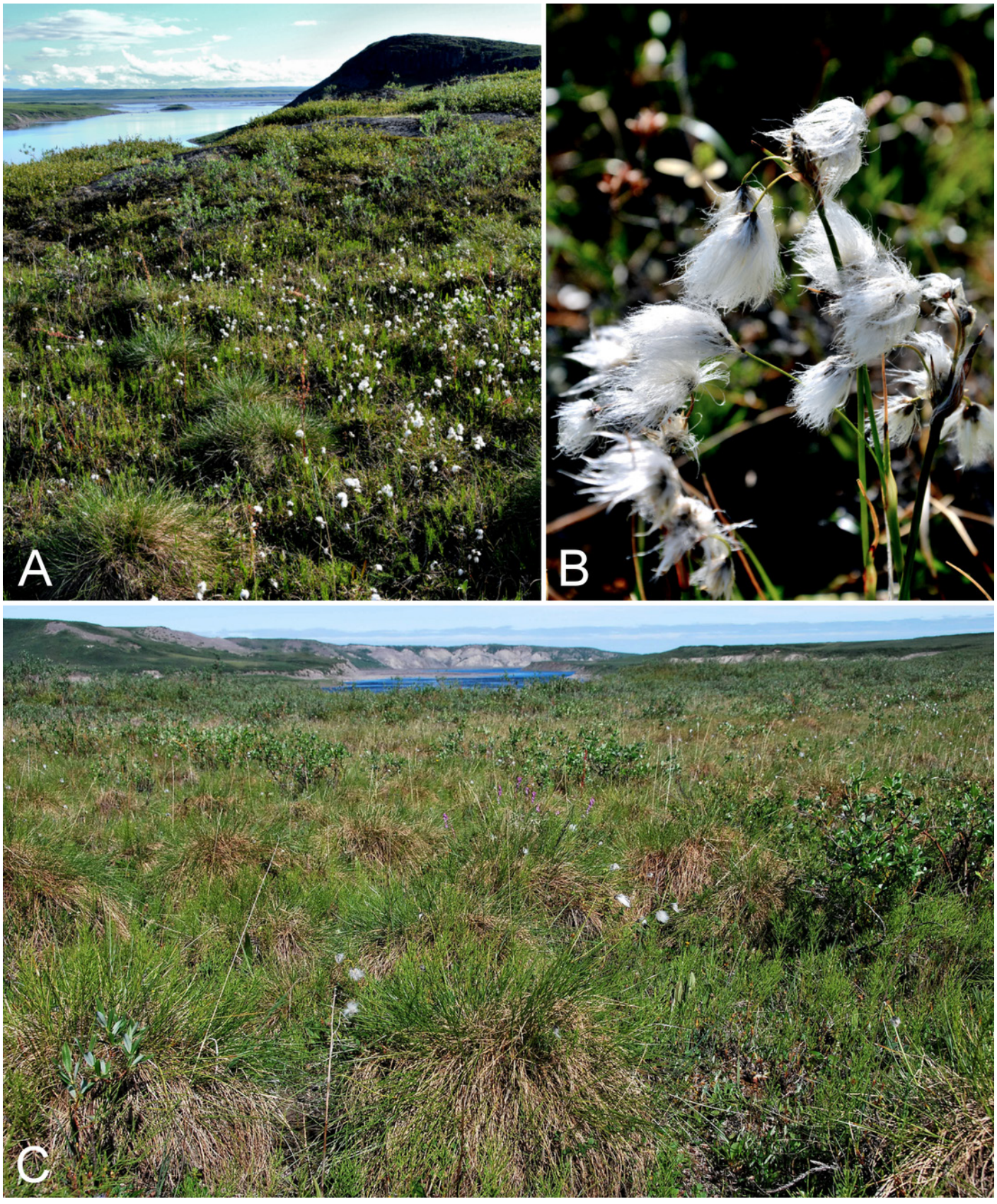
A
B
C

Figure 28

Juncus alpinoarticulatus subsp. *americanus* and *J. arcticus* subsp. *alaskanus*.

Juncus alpinoarticulatus subsp. *americanus*: A. habit, *Saarela et al. 3858.* C. habit, *Saarela et al. 3858*. *Juncus arcticus* subsp. *alaskanus*: B. inflorescence, *Saarela et al. 3720.* Photographs by J.M. Saarela (A, C) and P.C. Sokoloff (B).

A
B
C

Figure 29

Calamagrostis stricta subsp. *groenlandica*.

A. inflorescence, *Saarela et al. 4086.* B. habit, *Saarela et al. 4086.* Photographs by P.C. Sokoloff.

Figure 30

Deschampsia brevifolia and *Elymus alaskanus* subsp. *alaskanus*.

Deschampsia brevifolia: A. habit (bottom right), *Saarela et al. 4098. Elymus alaskanus* subsp. *alaskanus*: B. habit, *Saarela et al. 3191.* C. habitat, *Saarela et al. 3191.* Photographs by P.C. Sokoloff.

A
B
C

Figure 31

Elymus violaceus and *Festuca altaica*.

Elymus violaceus: A. habit, *Saarela et al. 4138. Festuca altaica*: B. habit, *Saarela et al. 3194.* C. inflorescence, *Saarela et al. 3194.* Photographs by R.D. Bull.

A
B
C

Figure 32

Festuca viviparoidea and *Hordeum jubatum* subsp. *intermedium*.

Festuca viviparoidea: A. habit, *Saarela et al. 3938*. *Hordeum jubatum* subsp. *intermedium.* B. habit, *Saarela et al. 4213.* C. habitat, *Saarela et al. 4213.* Photographs by J.M. Saarela (A) and R.D. Bull (B, C).

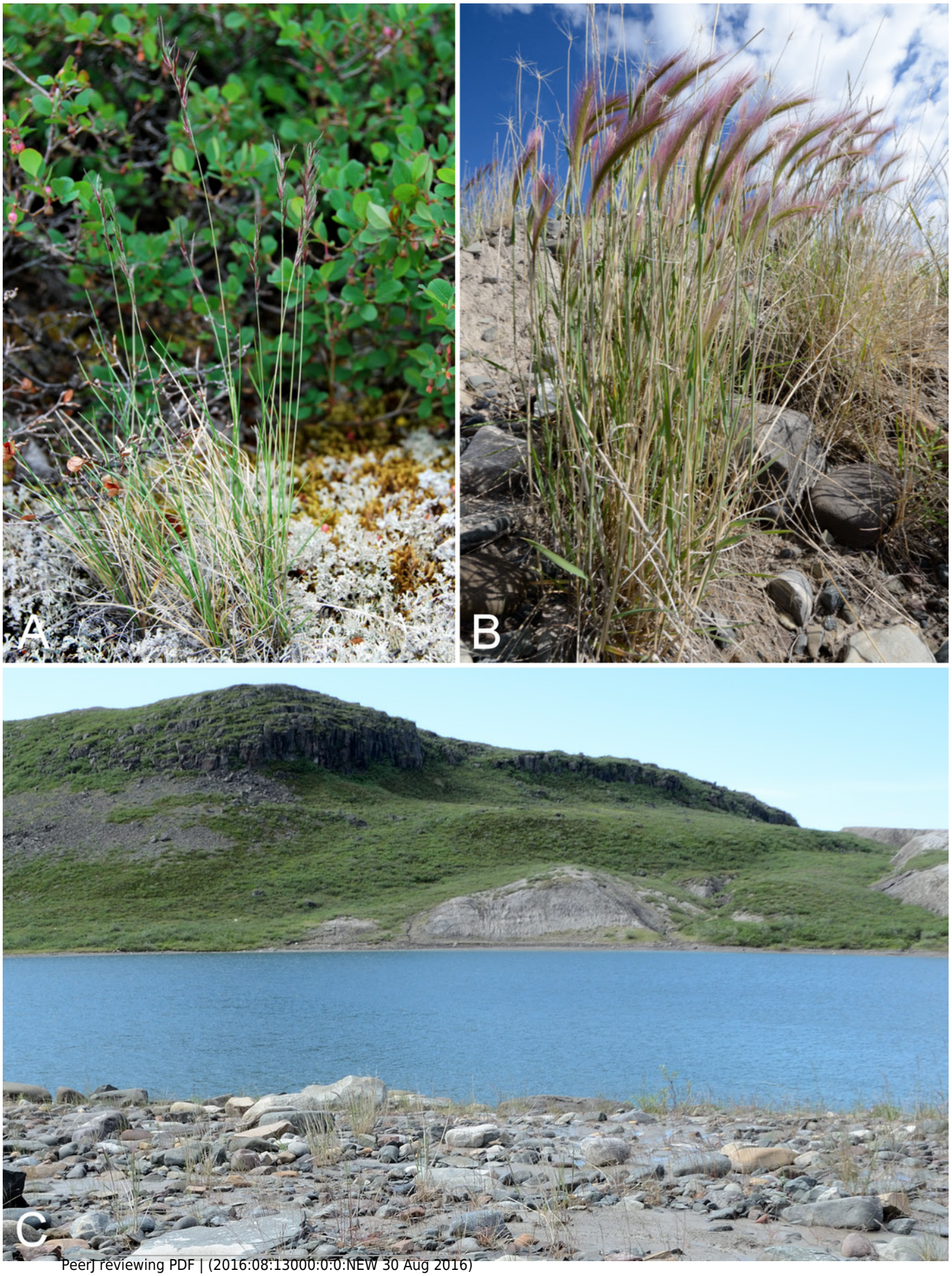
A
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Figure 33

Leymus mollis subsp. *villosissimus*.

A. habitat, *Saarela et al. 4174.* B. habit, Kugluktuk, Nunavut, 27 July 2014. Photographs J.M. Saarela (A) and P.C. Sokoloff (B).

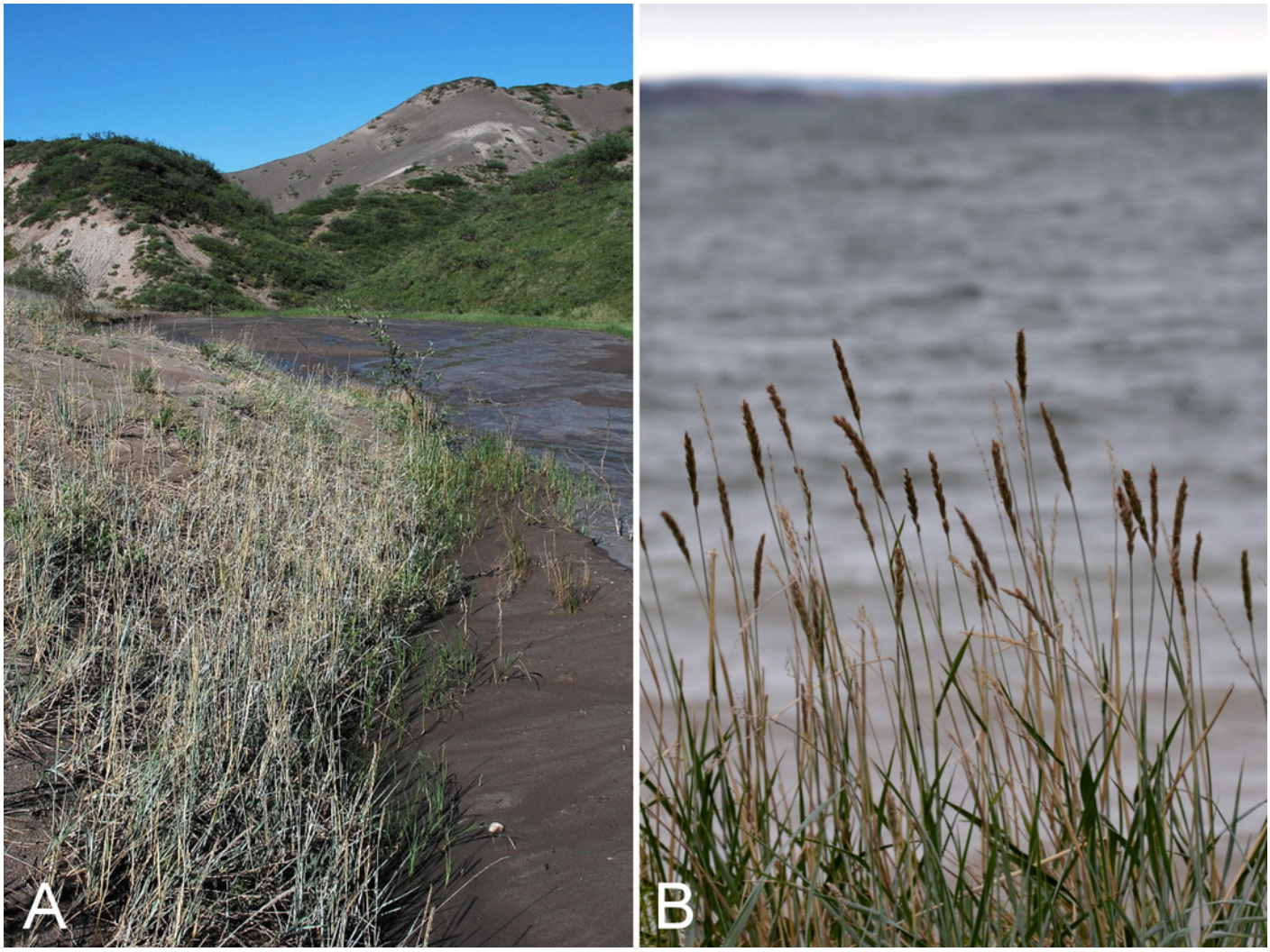


Figure 34

Poa alpina and *P. glauca* subsp. *glauca*.

Poa alpina: A. inflorescence, *Saarela et al. 3385.* B. habit, *Saarela et al. 3385. Poa glauca* subsp. *glauca*: C. habit, *Saarela et al. 3631.* D. habitat, *Saarela et al. 3114.* Photographs by R.D. Bull (A, B), P.C. Sokoloff (C) and J.M. Saarela (D).

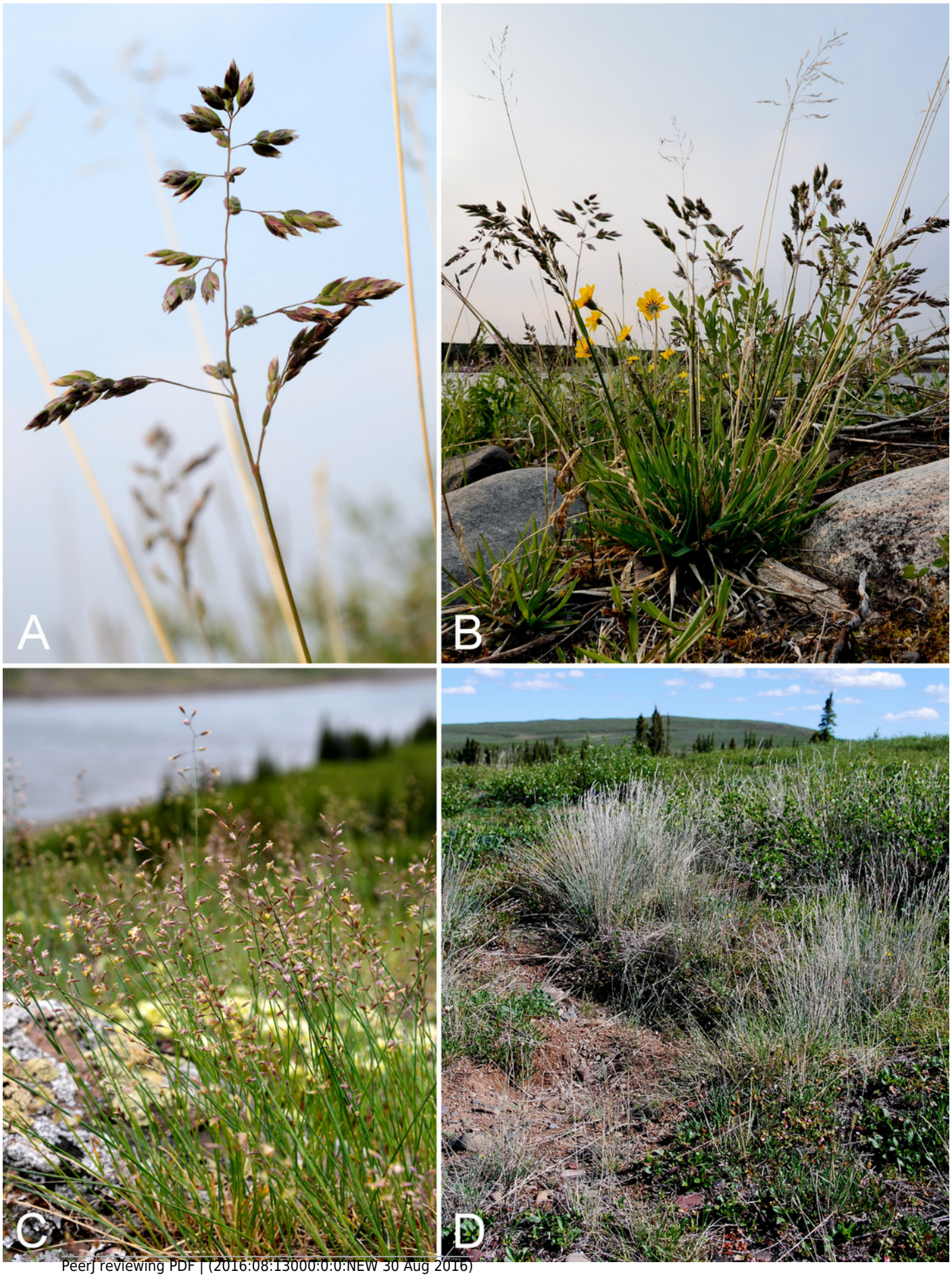
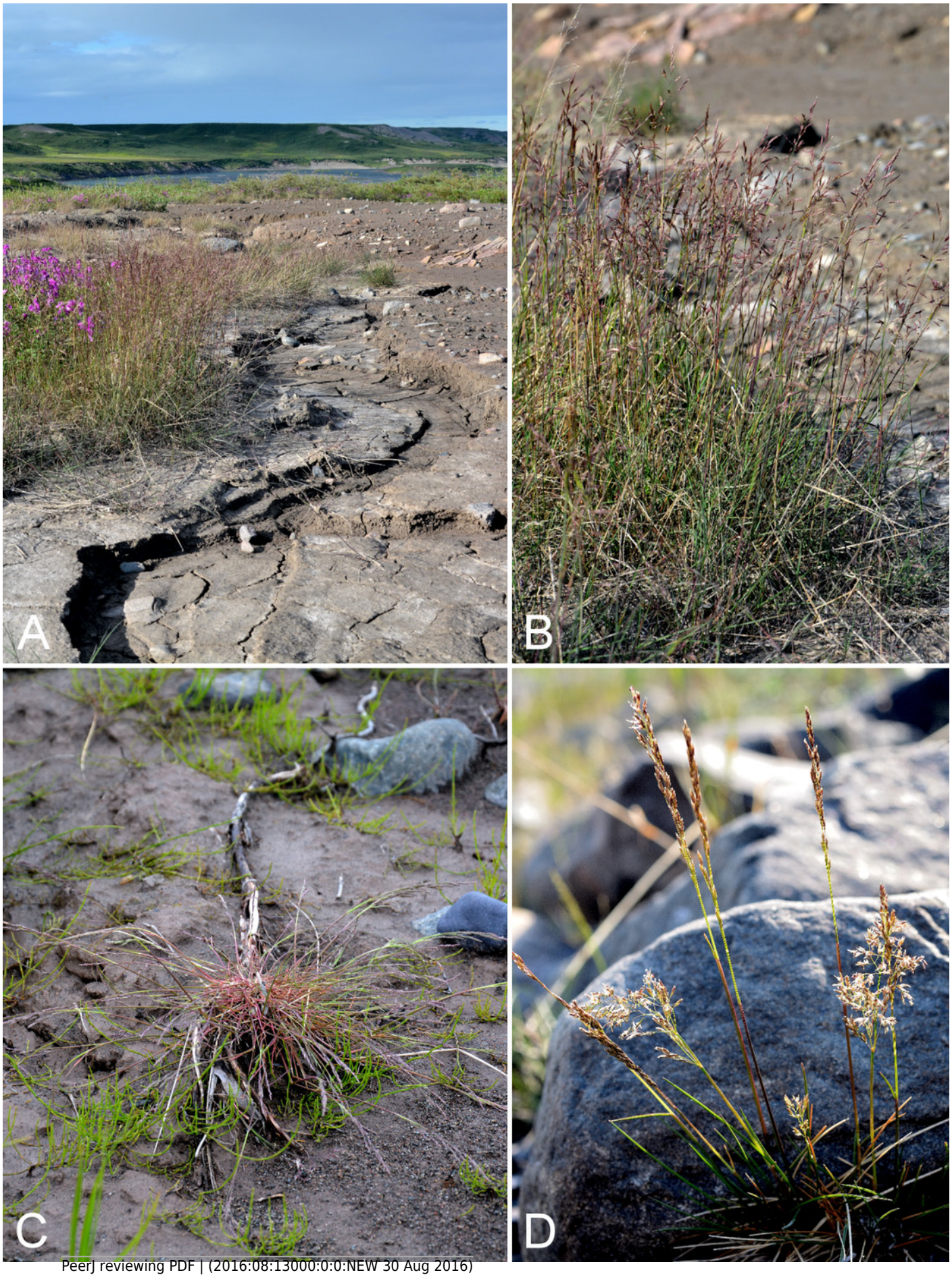

A
B
C
D

Figure 35

Puccinellia arctica and *P. nuttalliana*.

Puccinellia arctica: A. habitat, *Saarela et al. 4088.* B. habit, *Saarela et al. 4088. Puccinellia nuttalliana*: C. habit, *Saarela et al. 4126.* D. inflorescence, *Saarela et al. 3797.* Photographs by P.C. Sokoloff (A, B, C) and R.D. Bull (D).


A
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C
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Figure 36

Trisetum spicatum and *Stuckenia pectinata*.

Trisetum spicatum: A. habit, *Saarela et al. 3376*. *Stuckenia pectinata*: B. habitat, *Saarela et al. 4277*. Photographs by J.M. Saarela (A) and P.C. Sokoloff (B).

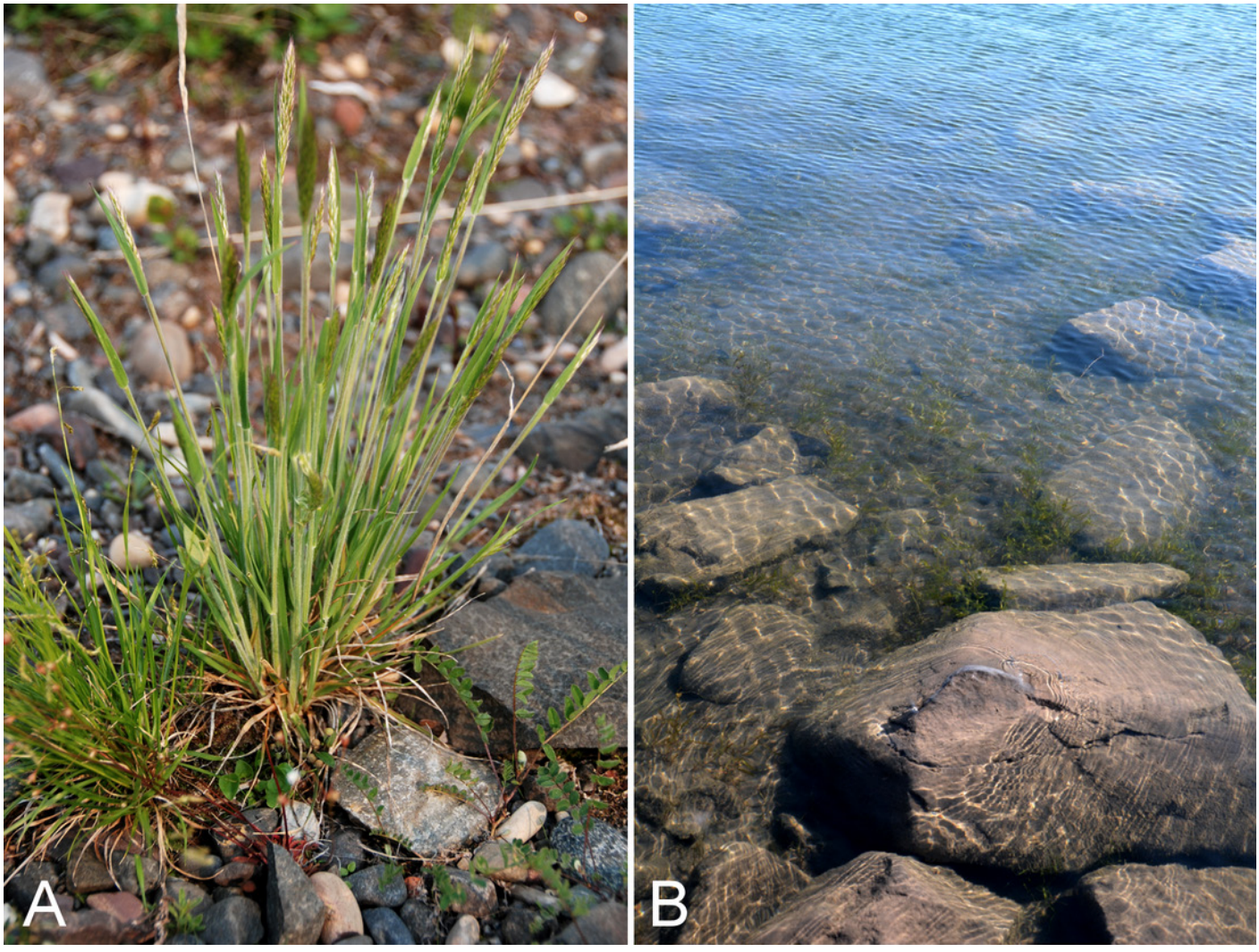

Figure 37

Tofieldia coccinea.

A. habit, *Saarela et al. 3770*. B. inflorescence, *Saarela et al. 3770.* C. habitat, *Saarela et al. 3770.* Photographs by R.D. Bull.

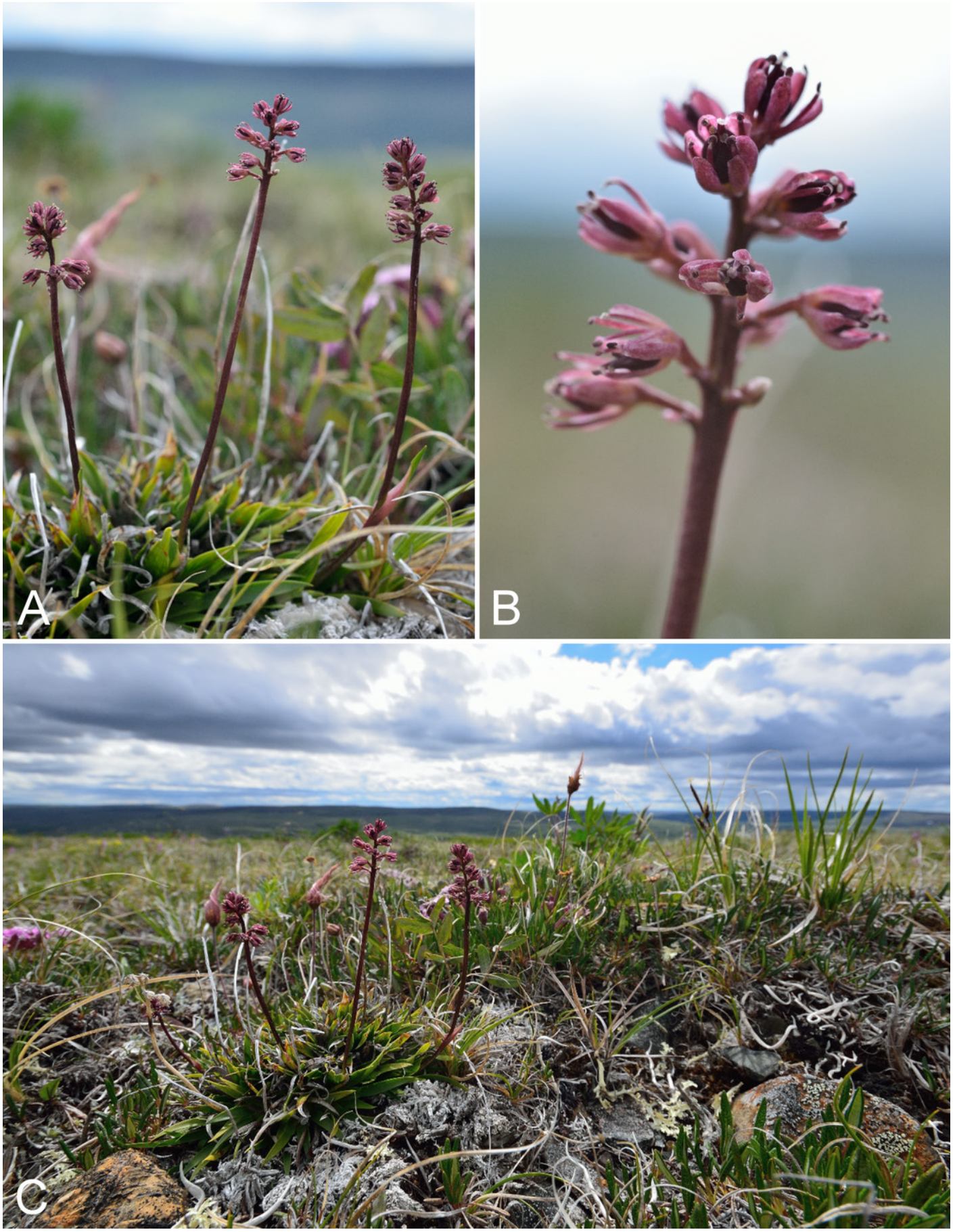
A
B
C

Figure 38

Sparganium hyperboreum.

A. inflorescence, *Saarela et al. 3617.* B. habitat, *Saarela et al. 3617.* C. habit, *Saarela et al. 3617.* Photographs by P.C. Sokoloff (A, B) and J.M. Saarela (C).

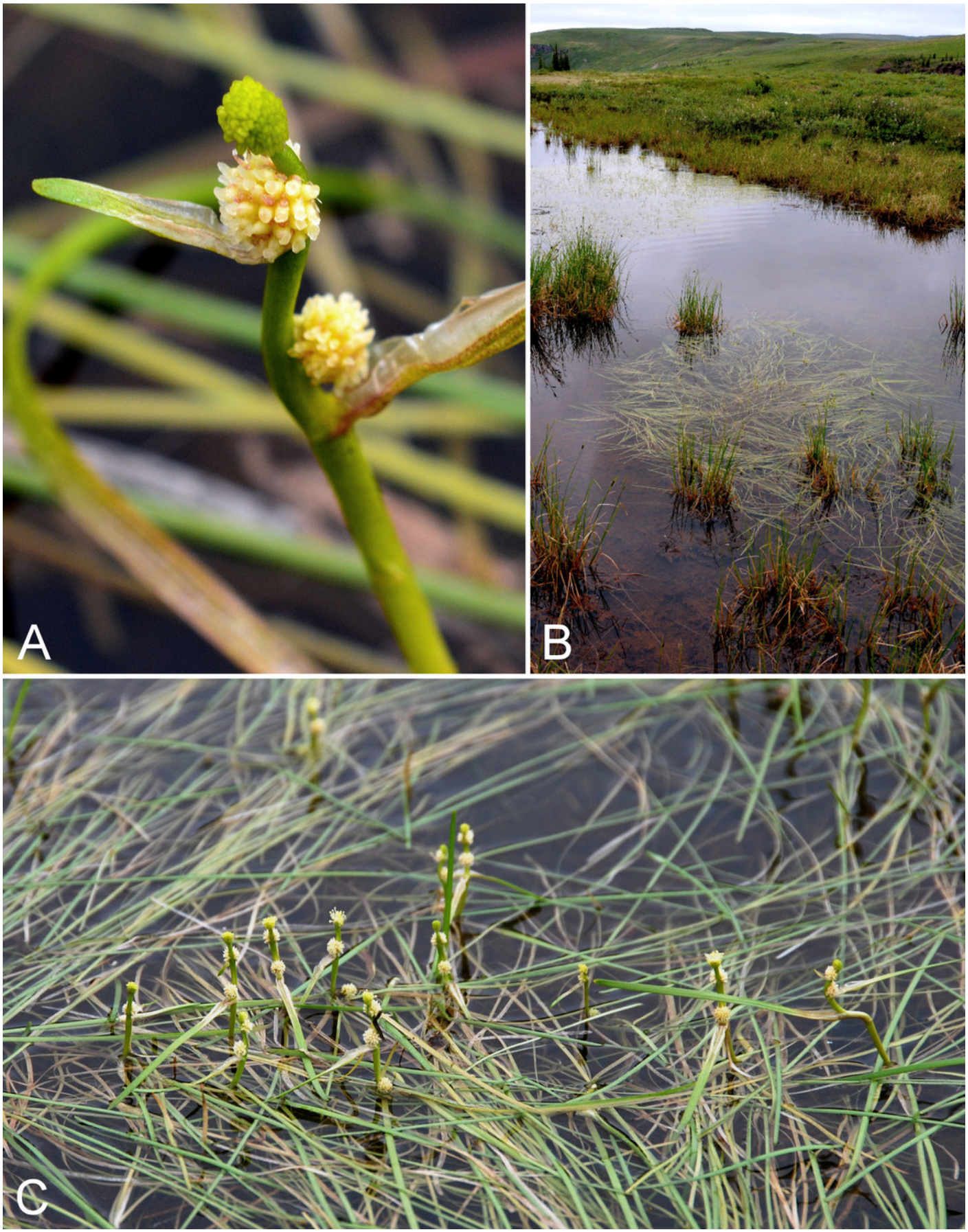
A
B
C

Figure 39

Askellia pygmaea.

A. habitat, *Saarela et al. 3450.* B. habit, *Saarela et al. 3962.* Photographs by R.D. Bull.

Figure 40

Eurybia sibirica.

A. habitat, *Saarela et al. 4113a.* B. habit, *Saarela et al. 4113a.* Photographs by R.D. Bull.

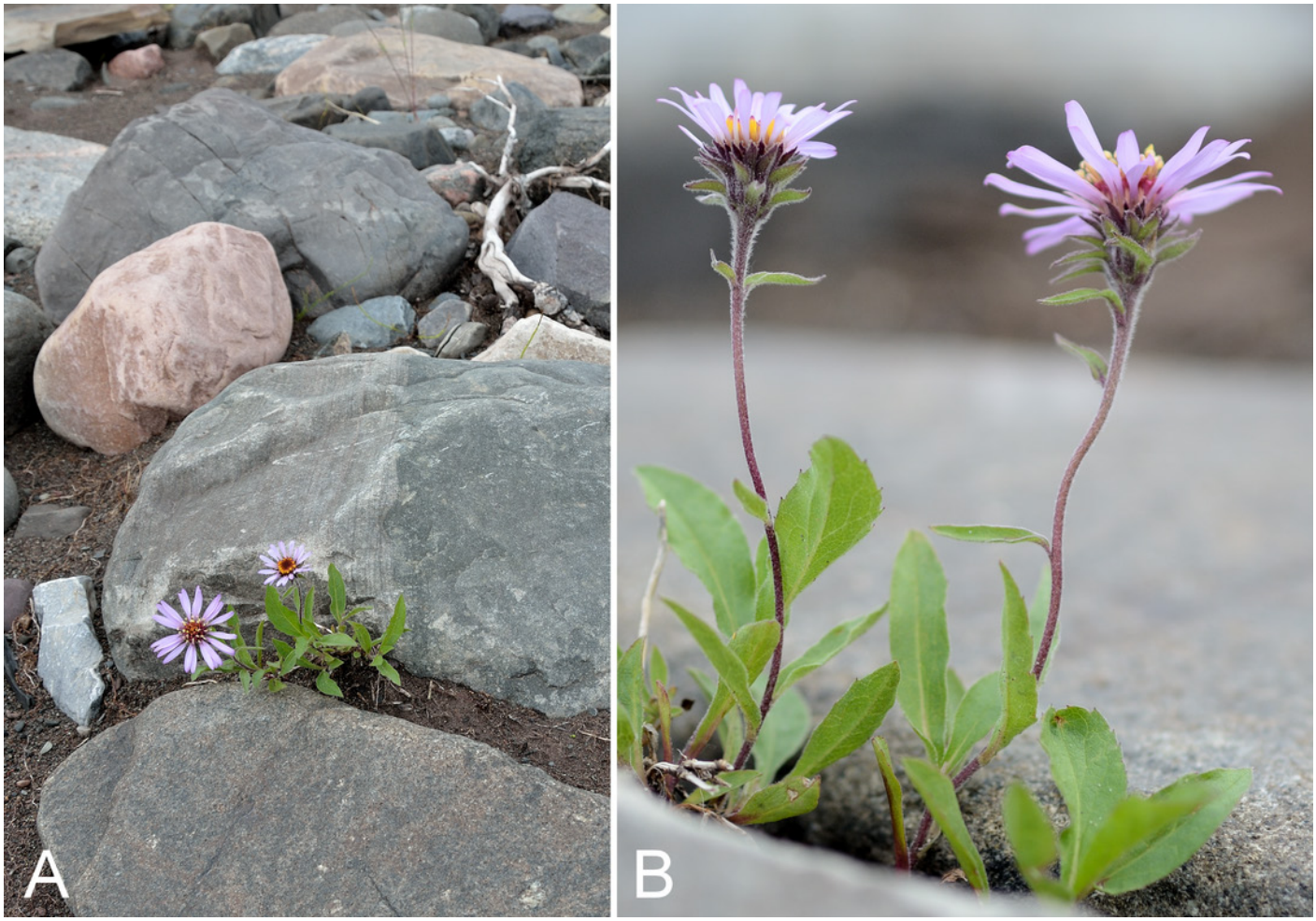

Figure 41

Saussurea angustifolia subsp. *angustifolia*.

A. habit, *Saarela et al. 3921.* B. capitula, Kugluk (Bloody Falls) Territorial Park, Nunavut, 15 July 2014. Photographs by J.M. Saarela (A) and R.D. Bull (B).

Figure 42

Senecio lugens.

A. habit, *Saarela et al. 3960.* B. capitula, *Saarela et al. 3192.* C. habitat, *Saarela et al. 3960.* Photographs by R.D. Bull (A, C) and P.C. Sokoloff (B).

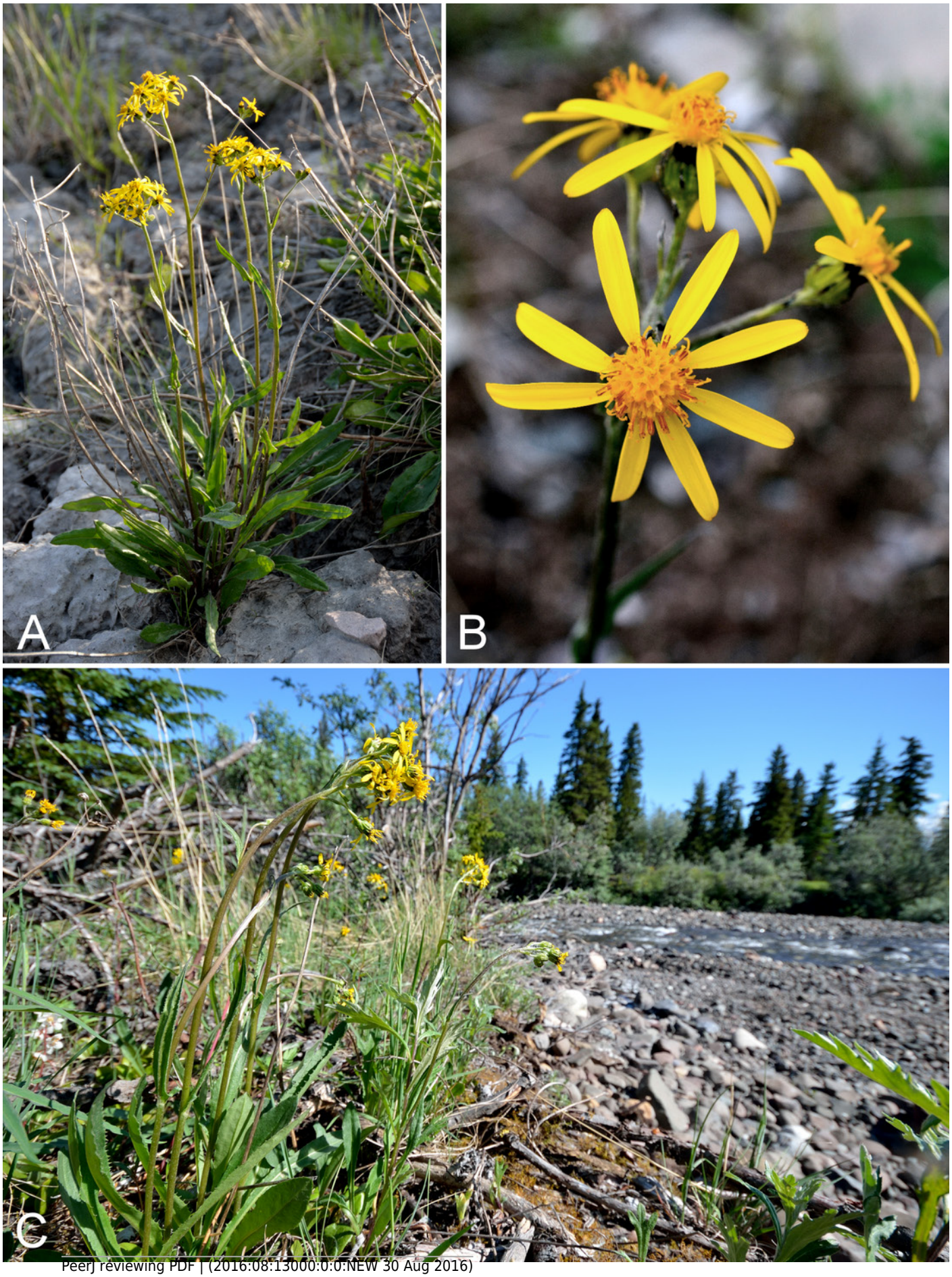
A
B
C

Figure 43

Symphyotrichum pygmaeum.

A. habit, *Saarela et al. 4219.* B. capitula, *Saarela et al. 4219.* Photographs by R.D. Bull.

A
B

Figure 44

Tephroseris palustris subsp. *congesta*.

A. habitat, Kugluktuk, Nunavut, 23 July 2014. B. capitula, *Saarela et al. 4344.* Photographs by R.D. Bull.

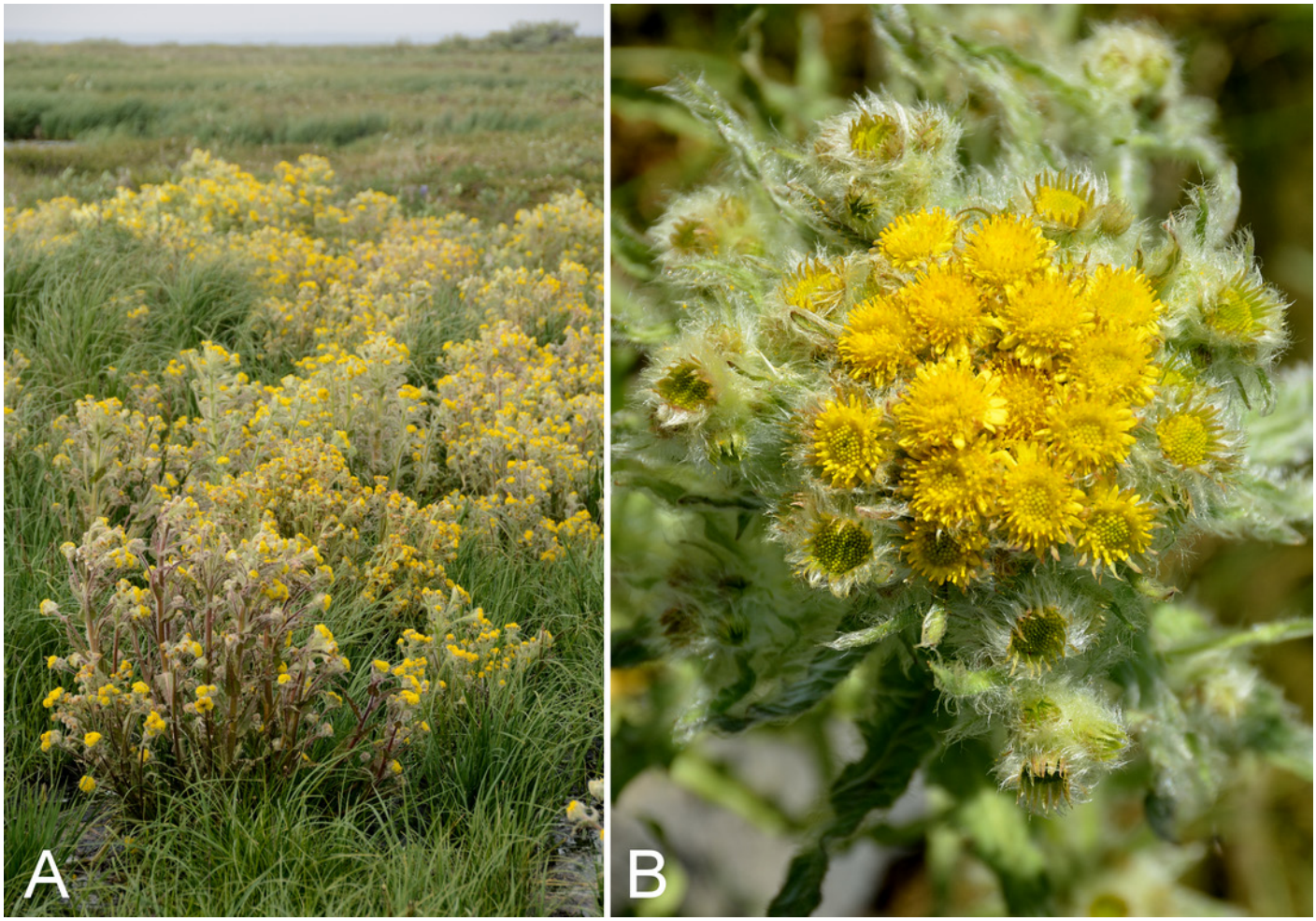

Figure 45

Alnus alnobetula.

A. staminate and pistillate catkins, *Saarela et al. 3598.* B. habit, *Saarela et al. 3598.*

Photographs by P.C. Sokoloff.

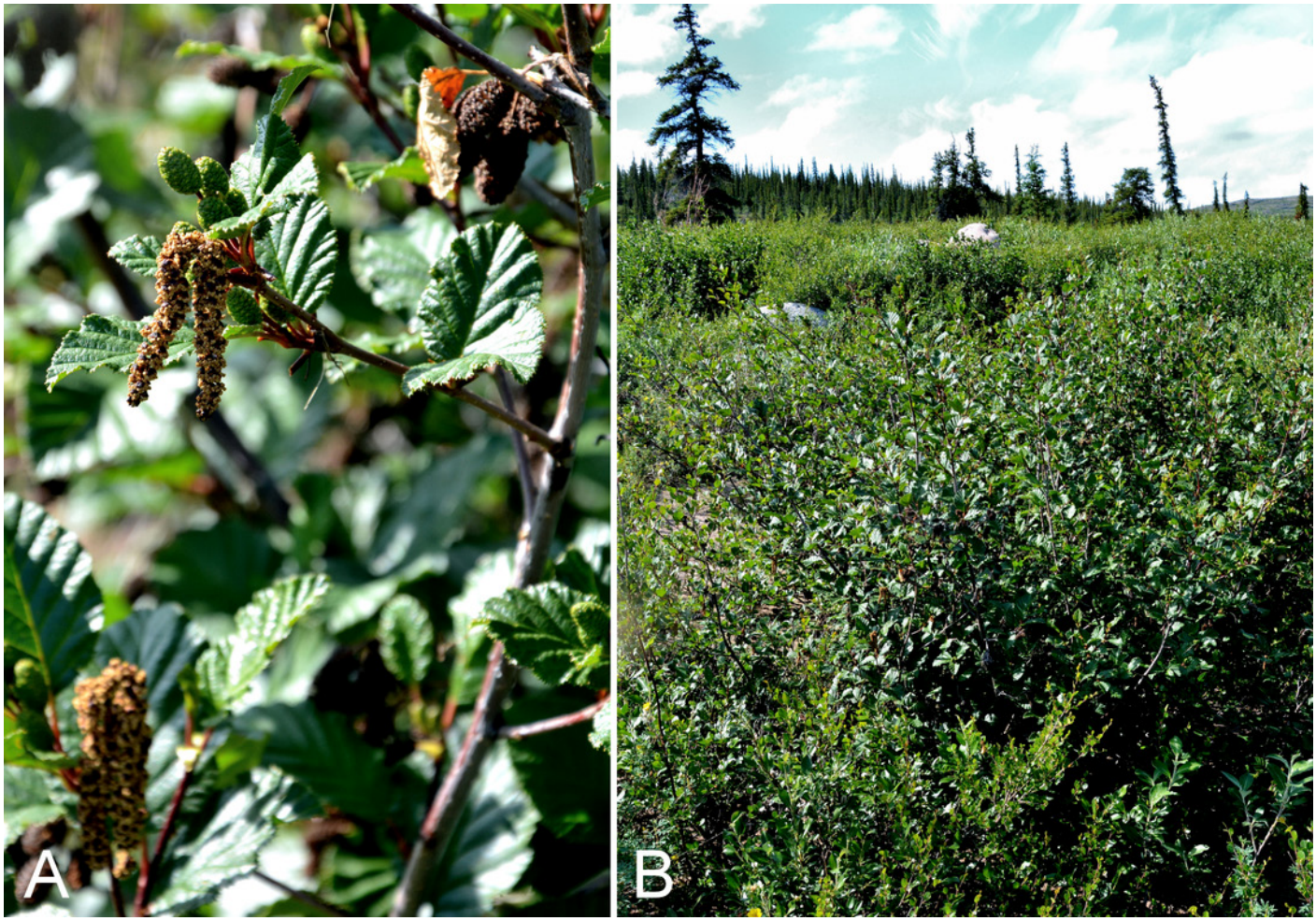

Figure 46

Betula occidentalis.

A. pistillate catkins, *Saarela et al. 4079.* B. habit, *Saarela et al. 4318.* Photographs by R.D. Bull.

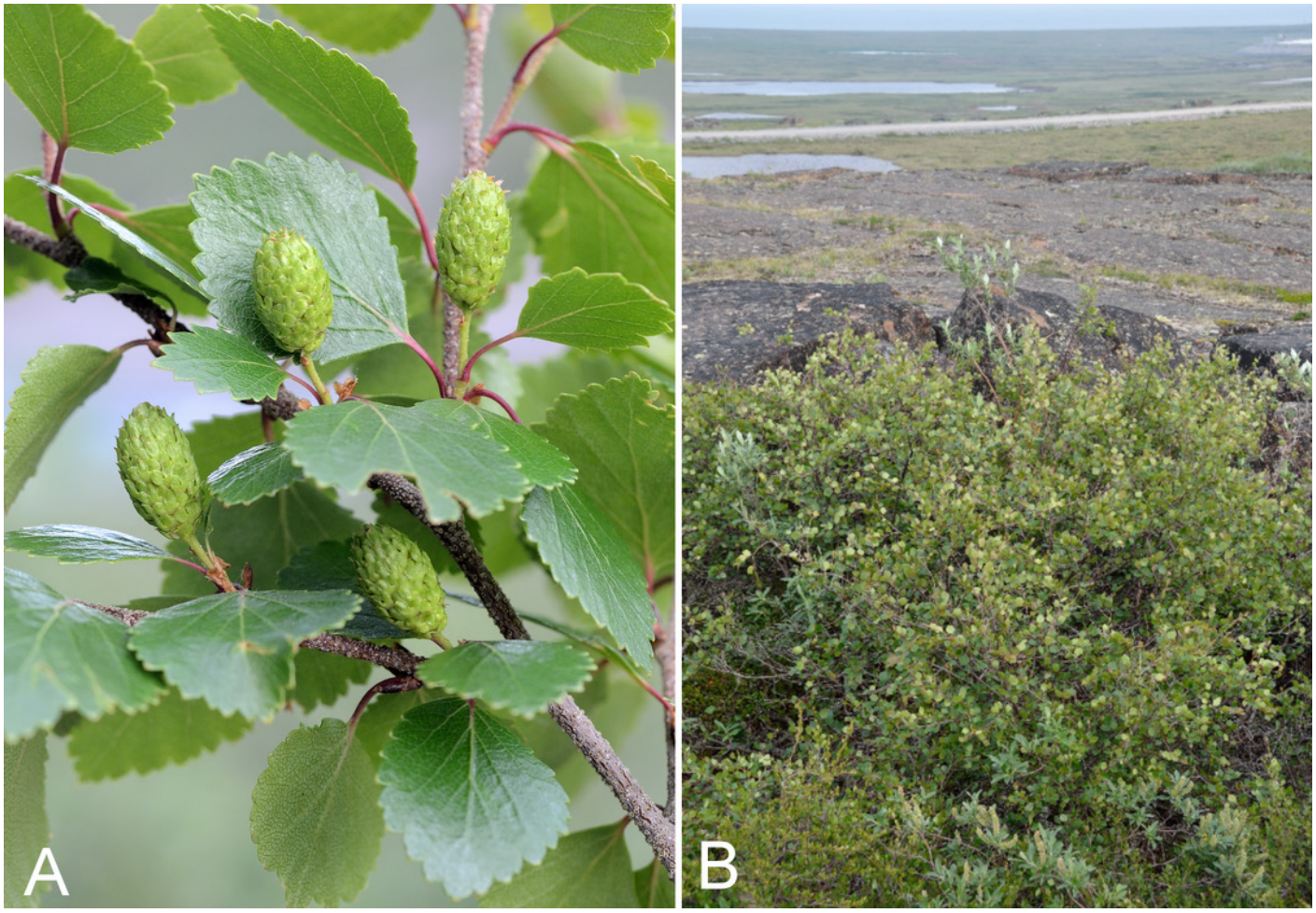

Figure 47

Mertensia maritima subsp. *tenella* and *Braya humilis* subsp. *humilis*.

Mertensia maritima subsp. *tenella*: A. habit, *Saarela et al. 3714. Braya humilis* subsp. *humilis*: B. habit, *Saarela et al. 3965.* Photographs by P.C. Sokoloff.

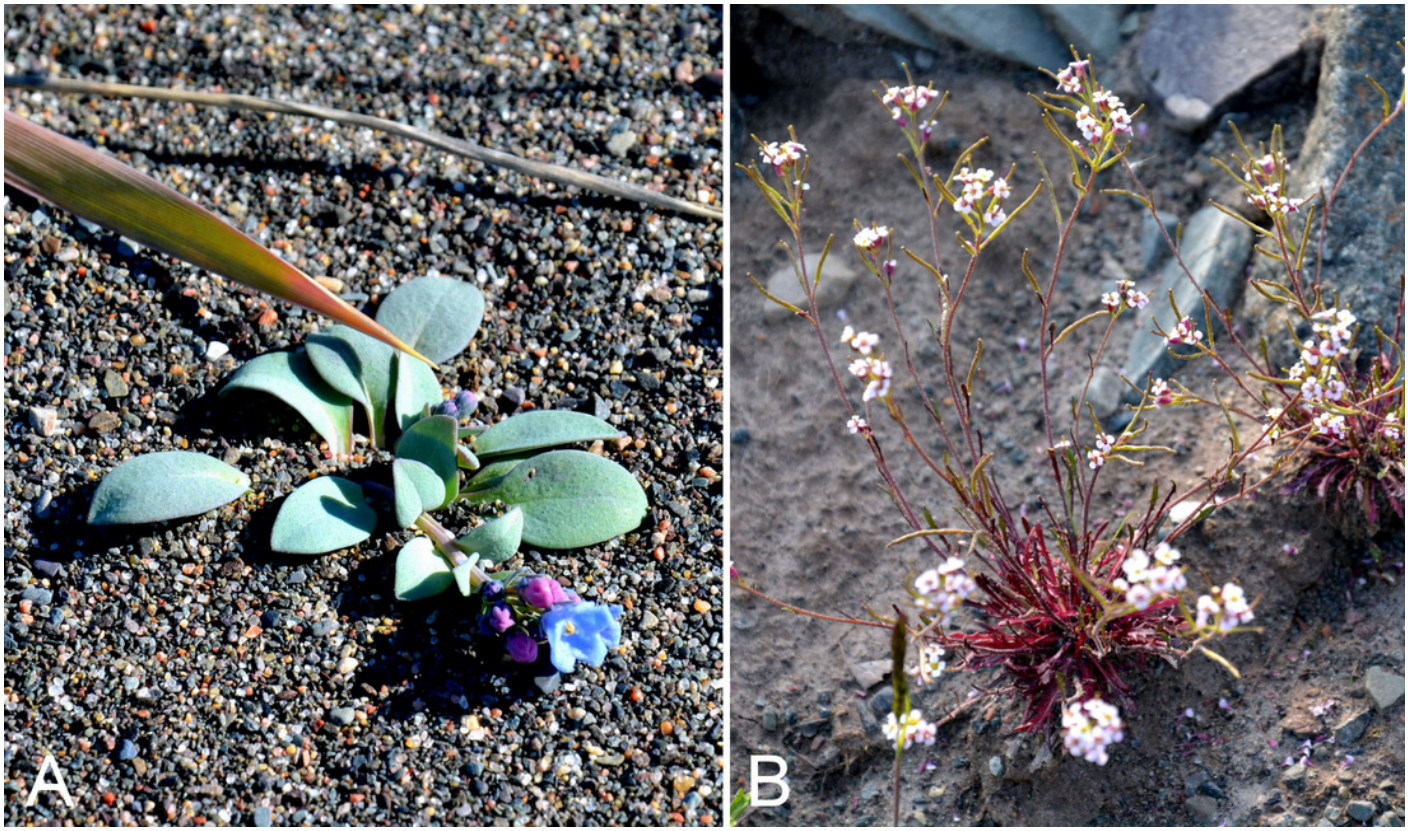

Figure 48

Erysimum coarctatum.

A. habit, *Saarela et al. 3471.* B. inflorescence, *Saarela et al. 4124.* Photographs by P.C. Sokoloff (A) and R.D. Bull (B).

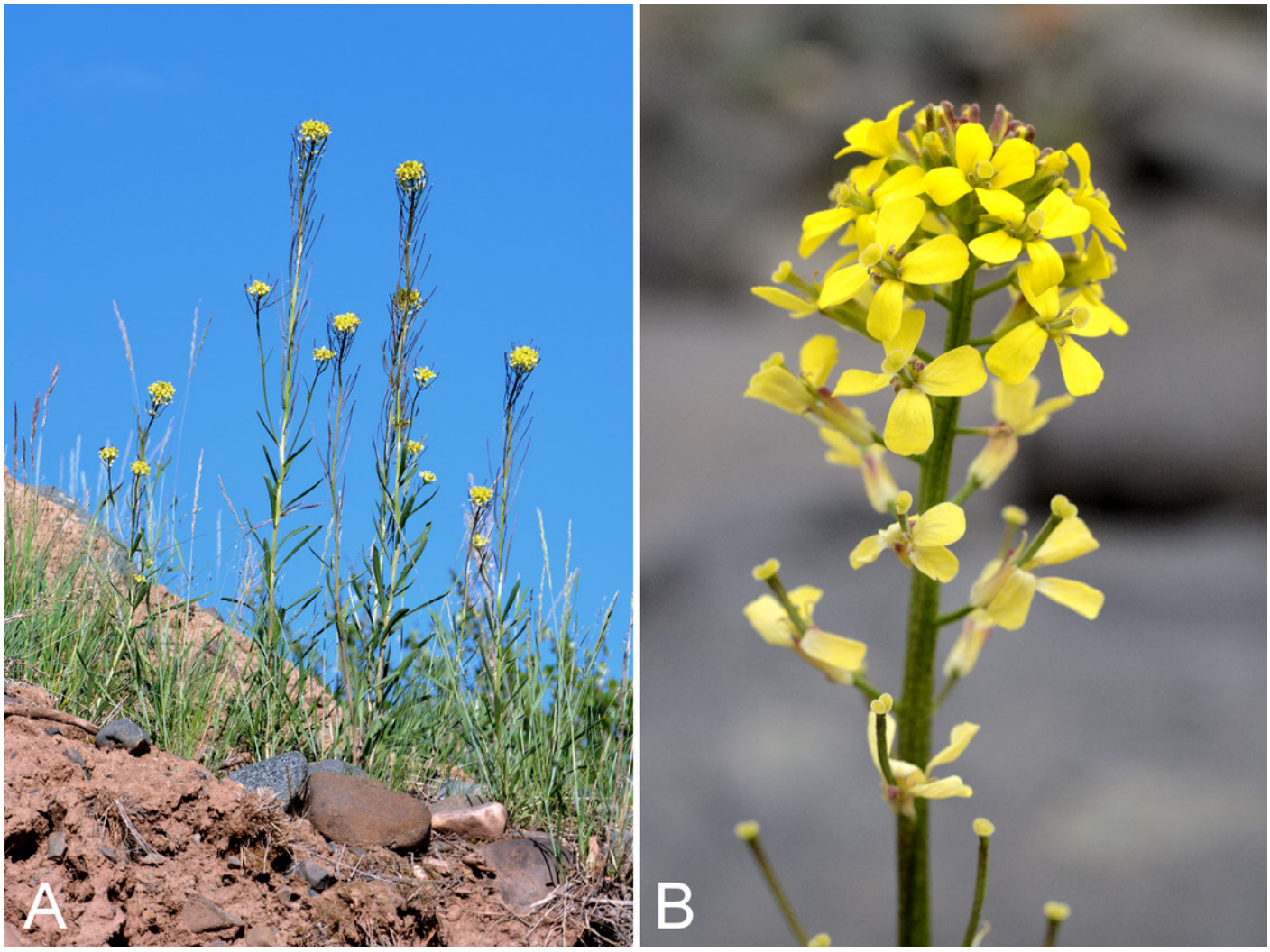

Figure 49

Physaria arctica.

A. habit, *Saarela et al. 4177.* B. fruits, *Saarela et al. 4177.* Photographs by P.C. Sokoloff.

Figure 50

Arenaria humifusa, *Eremogonecapillaris* subsp. *capillaris* and *Honckenya peploides* subsp. *diffusa*.

Arenaria humifusa: A. habit, *Saarela et al. 3264. Eremogonecapillaris* subsp. *capillaris*: B. habit, *Saarela et al. 3570. Honckenya peploides* subsp. *diffusa*: C. habit, *Saarela et al. 3708.* Photographs by P.C. Sokoloff.

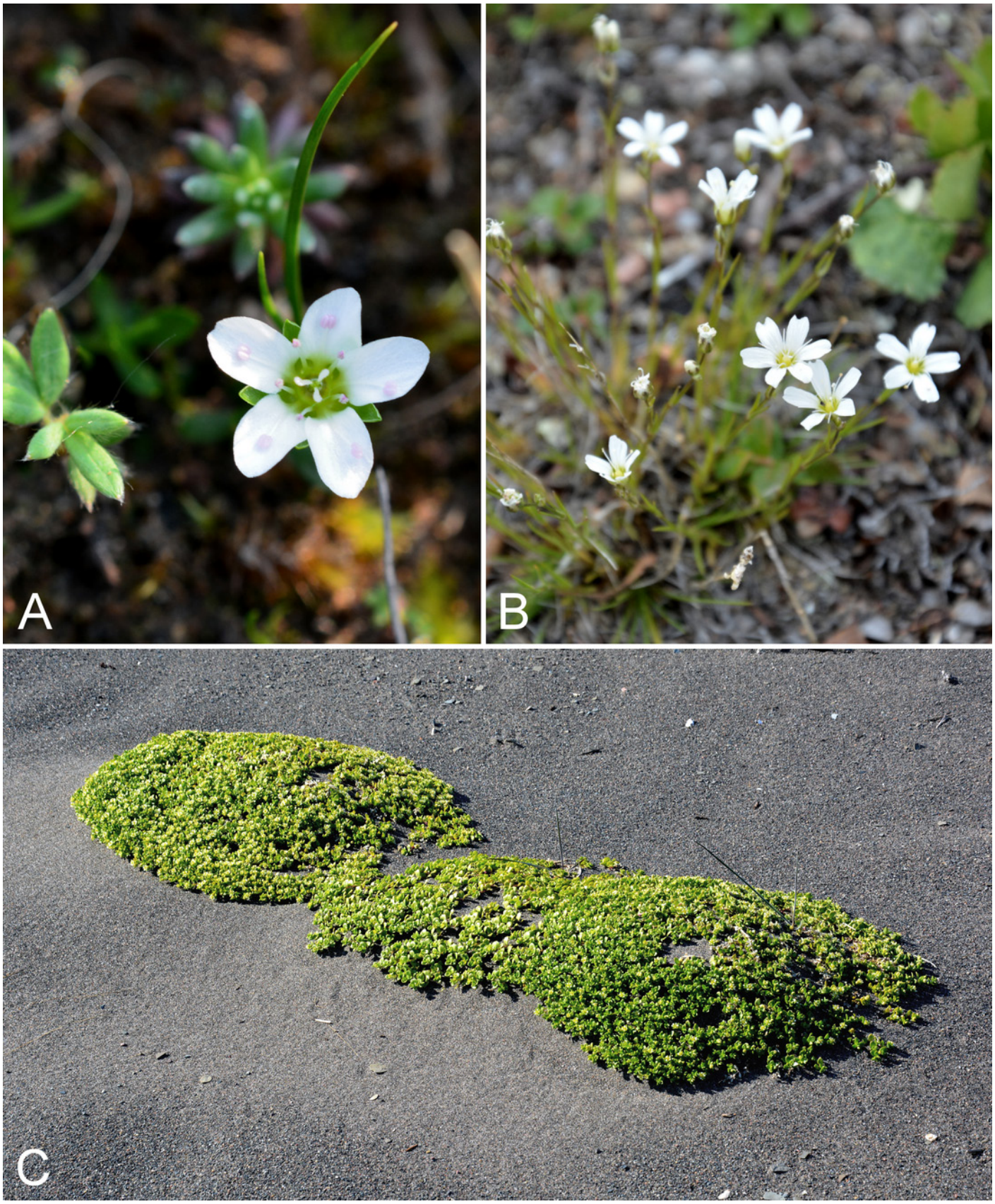
A
B
C

Figure 51

Sabulina elegans.

A. habit, *Saarela et al. 4328.* B. inflorescence, *Saarela et al. 4328.* Photographs by P.C. Sokoloff.

Figure 52

Sagina nodosa subsp. *borealis*.

A. inflorescence, *Saarela et al. 4413.* B. habit, *Saarela et al. 4413.* Photographs by P.C. Sokoloff.

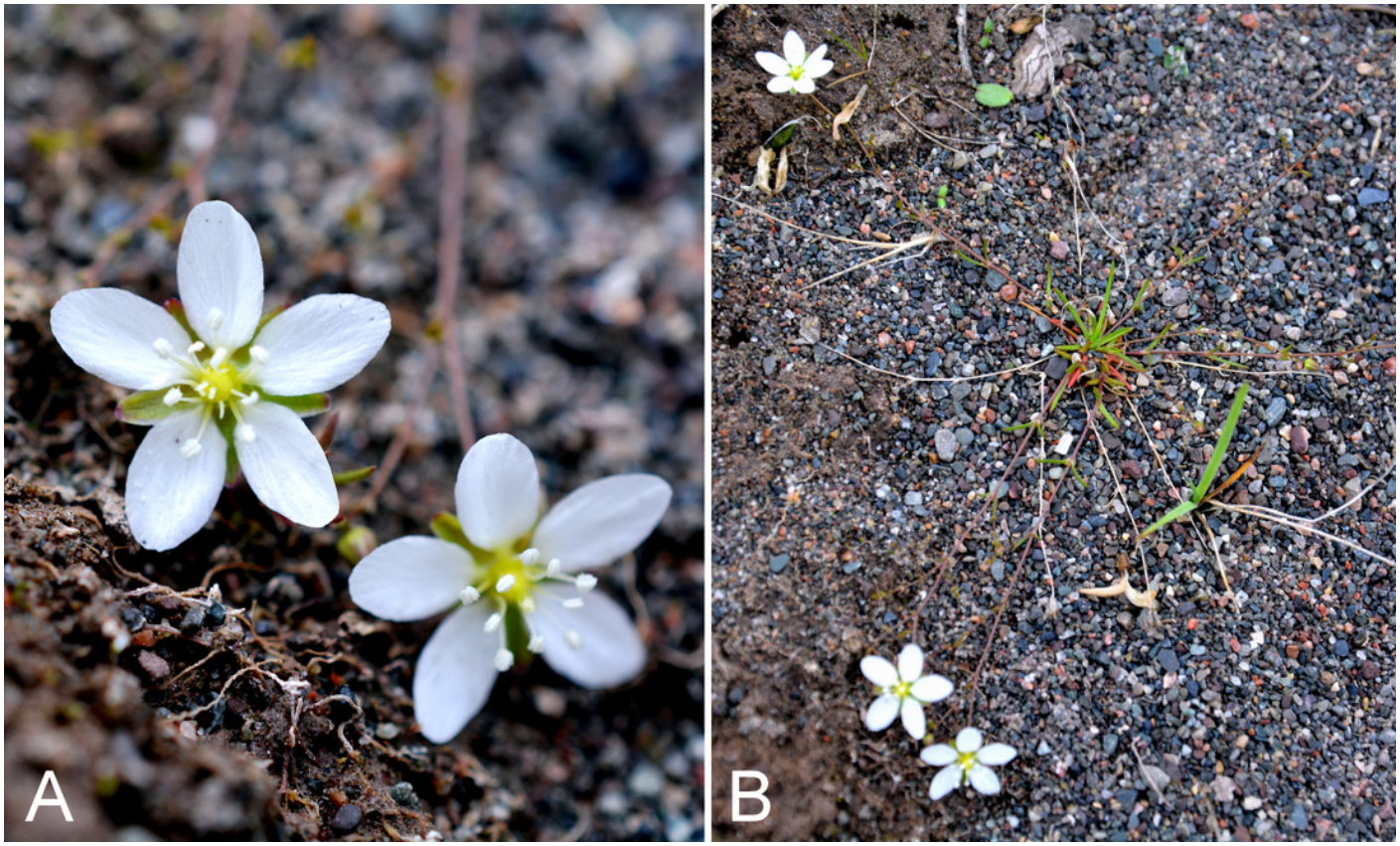

Figure 53

Suaeda calceoliformis.

A. habit, *Saarela et al. 3668.* B. habit, *Saarela et al. 3668.* C. habitat, *Saarela et al. 3668.* Photographs by R.D. Bull.

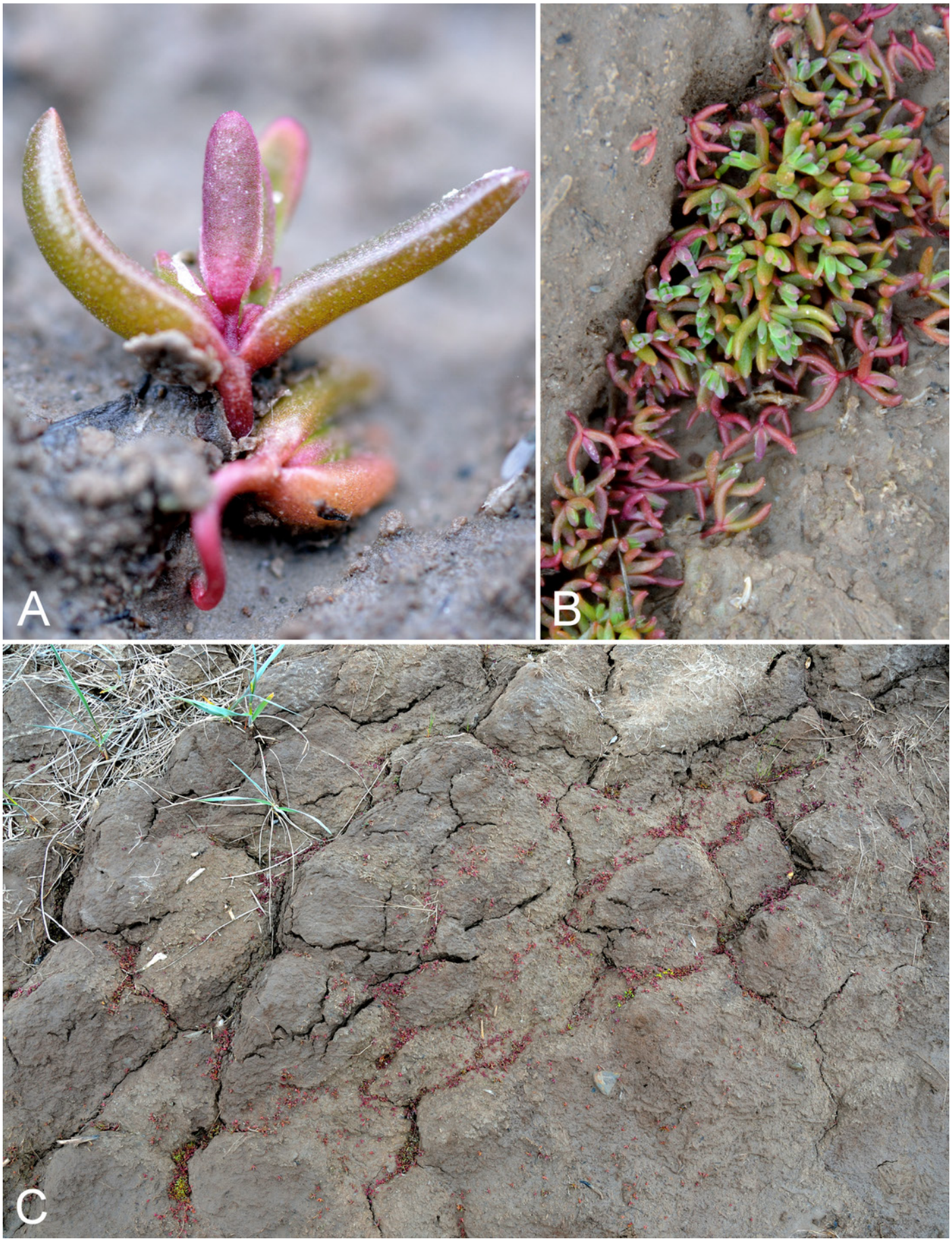
A
B
C

Figure 54

Shepherdia canadensis.

A. fruits, *Saarela et al. 3148.* B. habit, *Saarela et al. 3148.* C. habitat, *Saarela et al. 3148.*

Photographs by R.D. Bull.

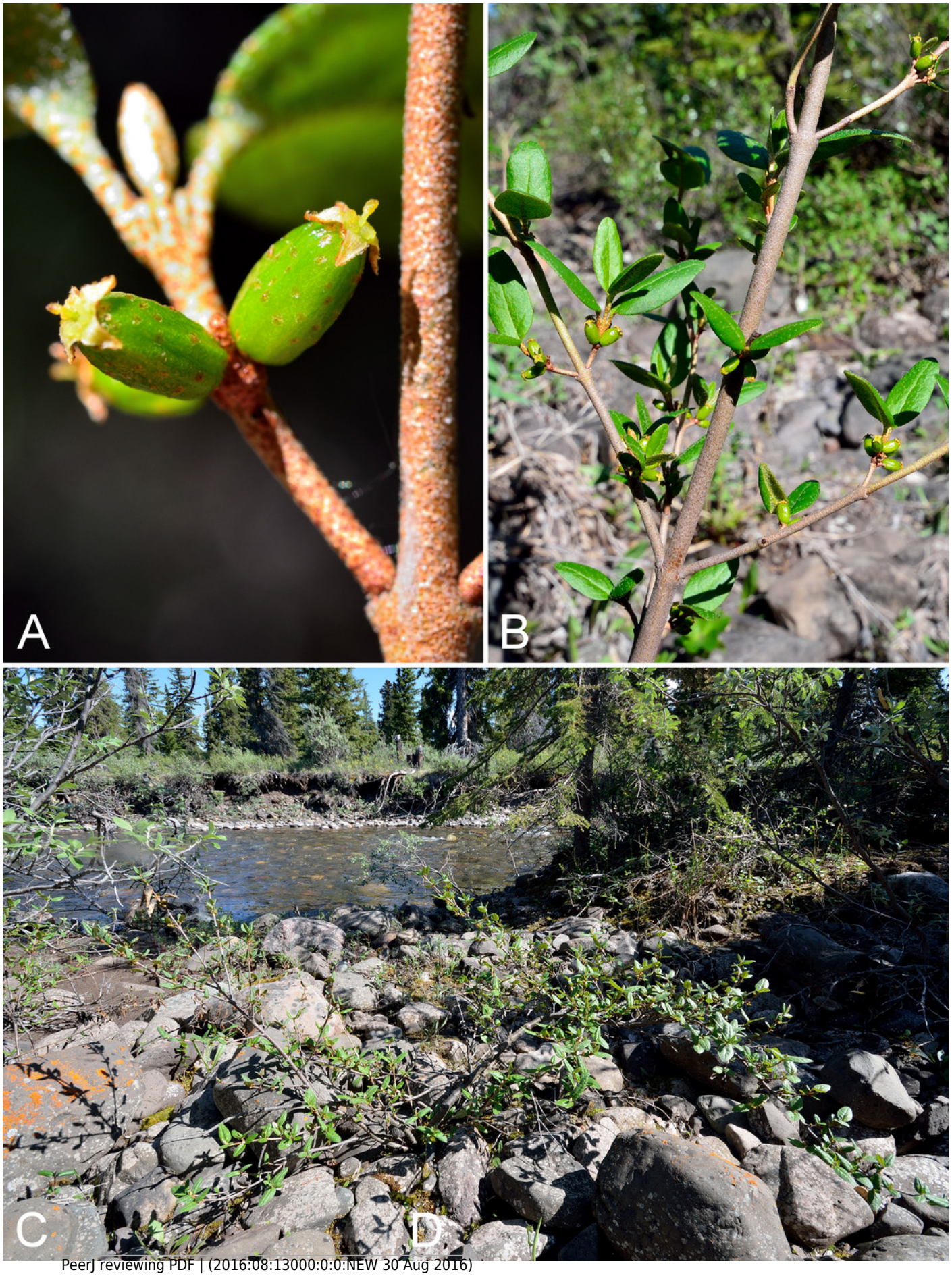
A
B
C
D

Figure 55

Hedysarum americanum.

A. inflorescence, Kugluk (Bloody Falls) Territorial Park, Nunavut, 13 July 2014. B. habitat, Kugluk (Bloody Falls) Territorial Park, Nunavut, 17 July 2014. C. habit, Kugluk (Bloody Falls) Territorial Park, Nunavut, 19 July 2014. Photographs by R.D. Bull (A, C) and P.C. Sokoloff (B).

A
B
C

Figure 56

Hedysarum boreale subsp. *mackenziei*.

A. habitat, Kugluk (Bloody Falls) Territorial Park, Nunavut, 19 July 2014. B. inflorescence, *Saarela et al. 3377.* C. habit, *Saarela et al. 3377.* Photographs by R.D. Bull (A, C) and P.C. Sokoloff (B).

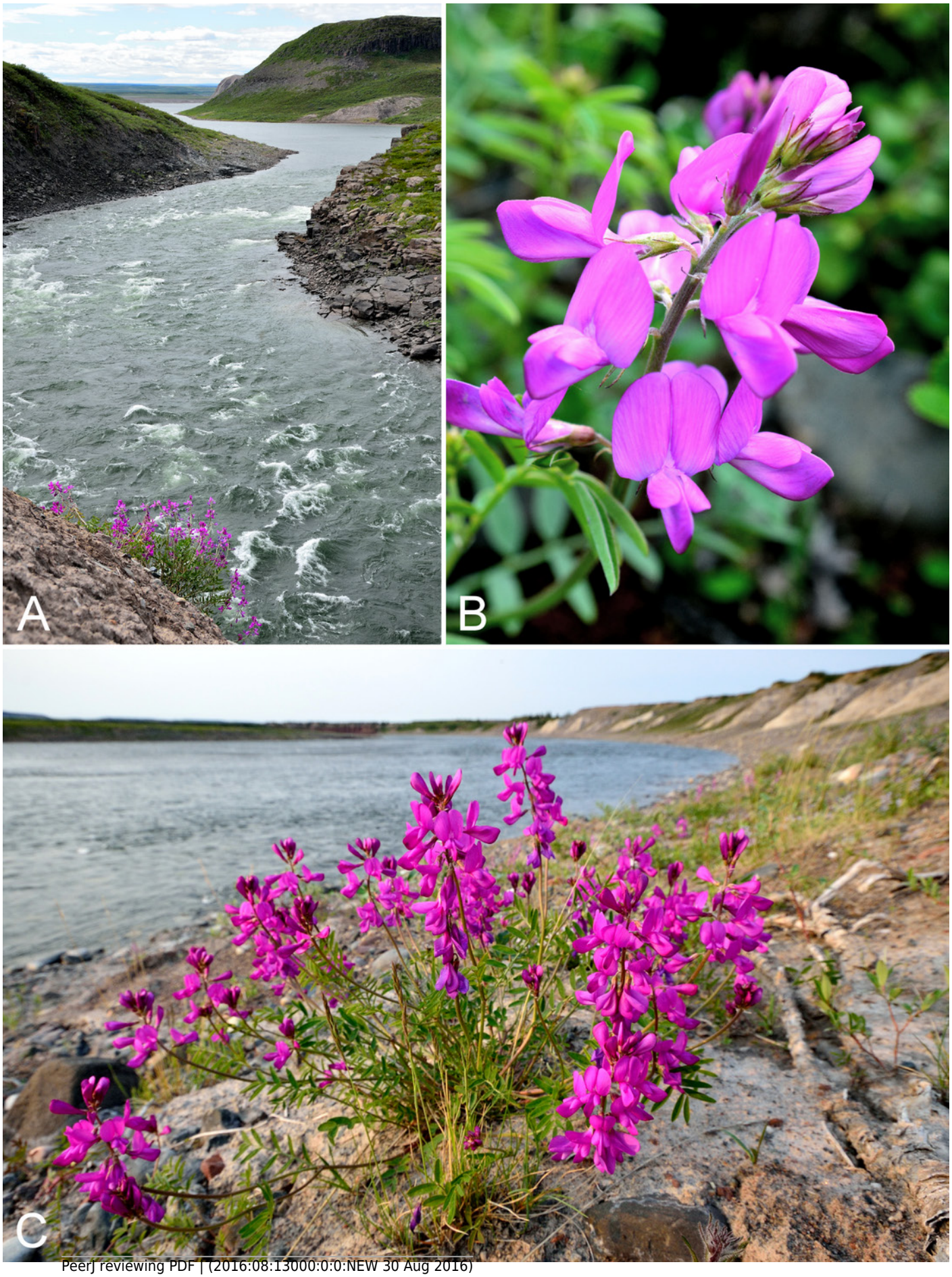
A
B
C

Figure 57

Lathyrus japonicus.

A. habitat, *Saarela et al. 3713.* B. habit, *Saarela et al. 3713.* Photographs by P.C. Sokoloff.

Figure 58

Lupinus arcticus.

A. inflorescence, *Saarela et al. 3125.* B. fruits, Kugluk (Bloody Falls) Territorial Park, Nunavut, 13 July 2014. Photographs by R.D. Bull.

Figure 59

Oxytropis maydelliana and *O. varians*.

Oxytropis maydelliana: A. inflorescence, *Saarela et al. 3154*. *Oxytropis varians*: B. inflorescence, *Saarela et al. 4212*. Photographs by R.D. Bull (A) and P.C. Sokoloff (B).

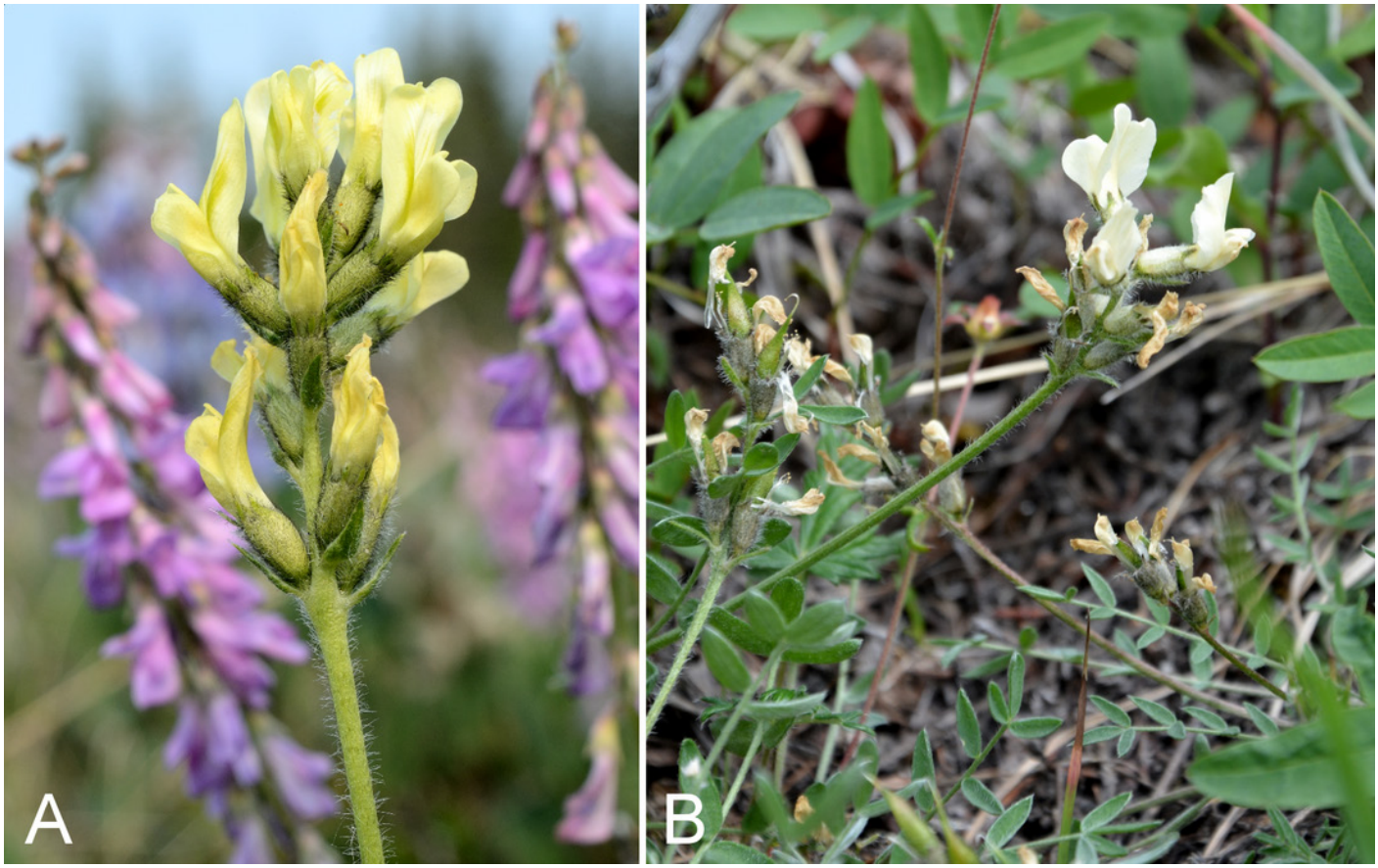

Figure 60

Gentianella propinqua subsp. *propinqua* and *Pinguicula villosa*.

Gentianella propinqua subsp. *propinqua*: A. habit, *Saarela et al. 4188*. *Pinguicula villosa*: B. habit, *Saarela et al. 4278.* Photographs by R.D. Bull.

Figure 61

Utricularia vulgaris.

A. habit, *Saarela et al. 3877.* B. bladders, *Saarela et al. 3877.* Photographs by J.M. Saarela.

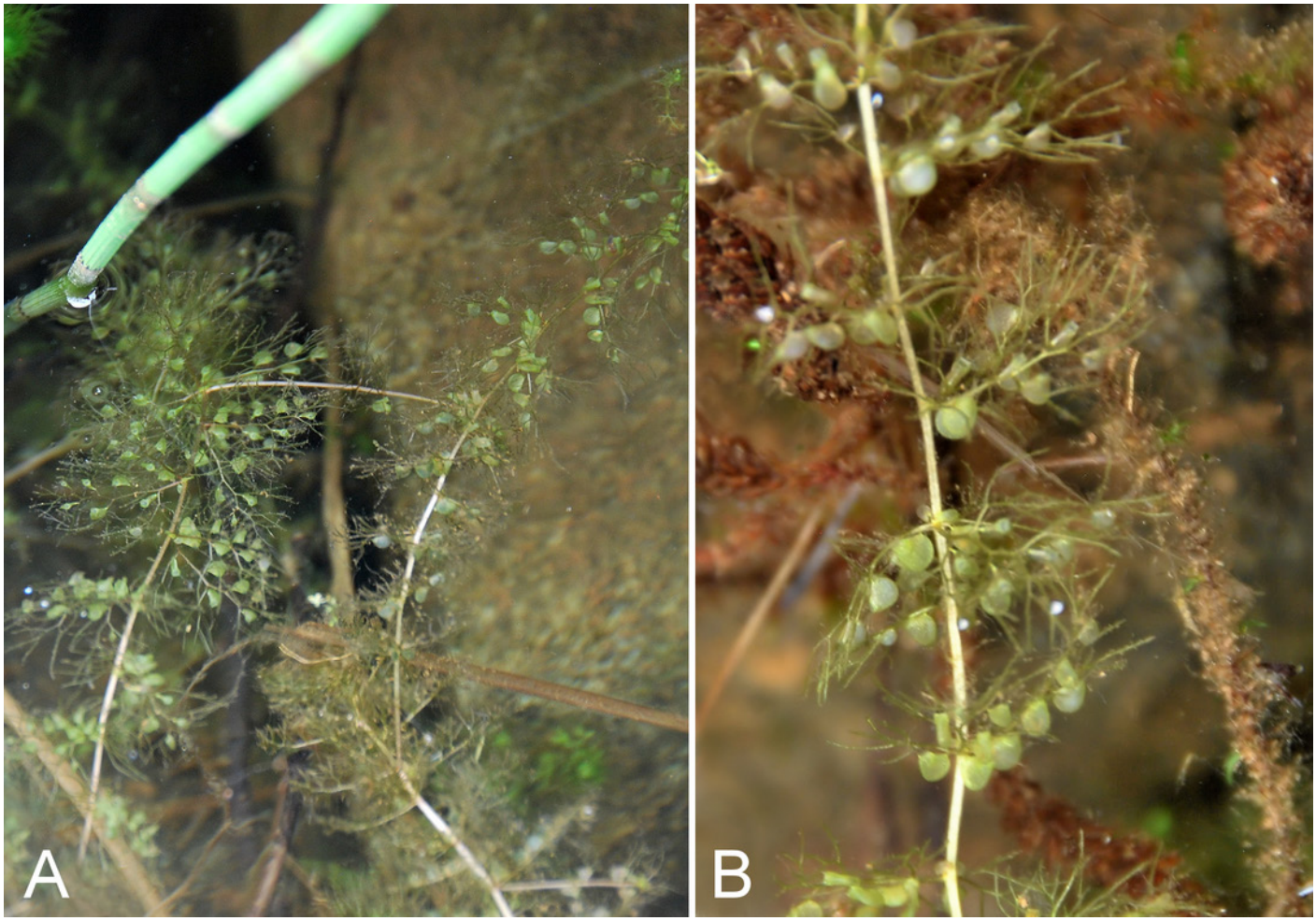

Figure 62

Linnaea borealis subsp. *americana*.

A. habit, *Saarela et al. 3646.* B. habit, *Saarela et al. 3646.* Photographs by R.D. Bull.

Figure 63

Chamerion angustifolium subsp. *angustifolium*.

A. inflorescence, vicinity of lower Coppermine River, Nunavut, 7 July 2014. B. habit, *Saarela et al. 4081.* Photographs by R.D. Bull.

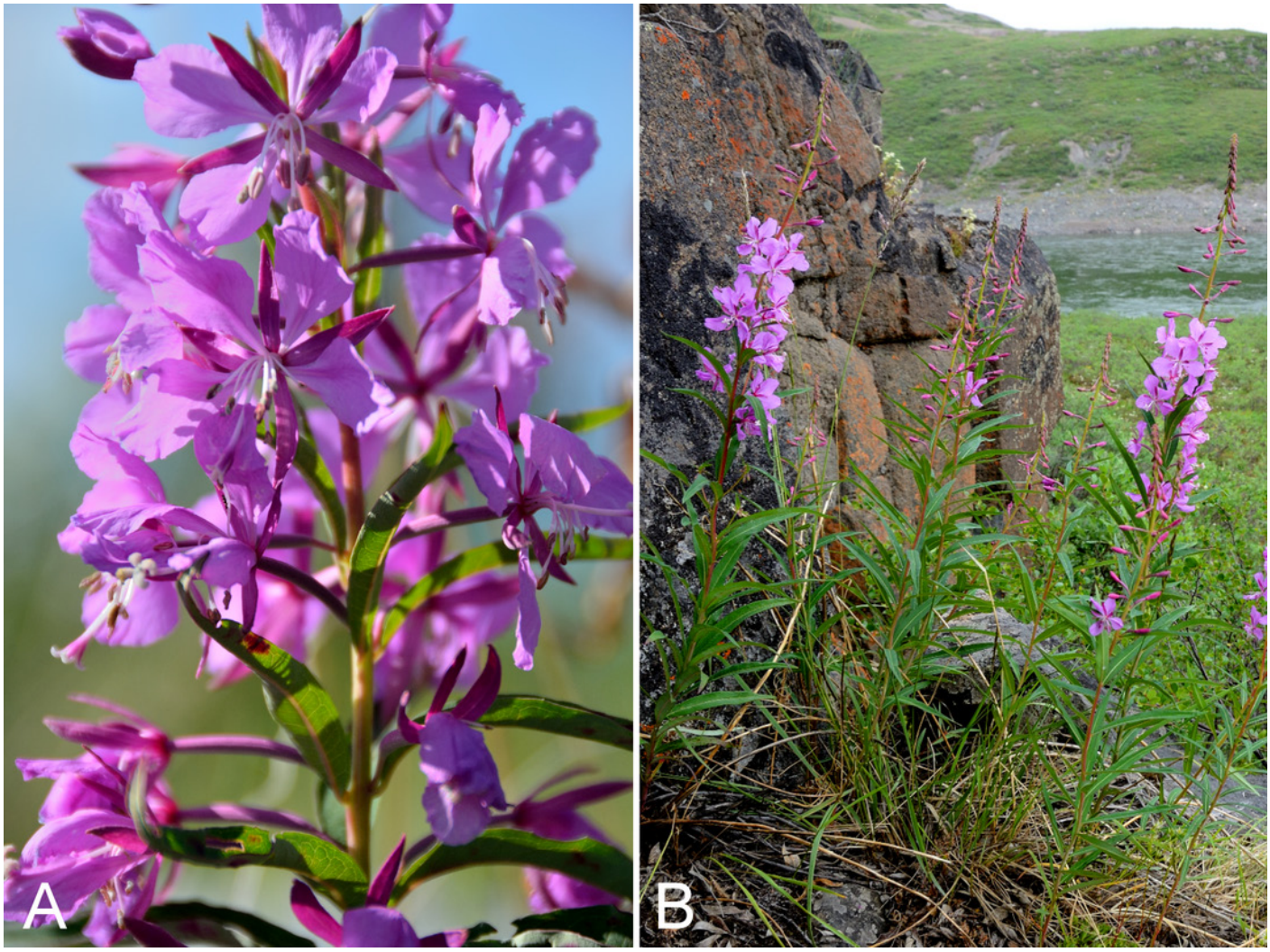

Figure 64

Epilobium palustre and *Castilleja caudata*.

Epilobium palustre: A. habit, *Saarela et al. 4103*. *Castilleja caudata*: B. habitat, *Saarela et al. 3183.* Photographs by P.C. Sokoloff (A) and J.M. Saarela (B).

Figure 65

Castilleja elegans.

A. habit, vicinity of Kugluktuk, Nunavut, 26 July 2014. B. inflorescence, vicinity of Kugluktuk, Nunavut, 26 July 2014. Photographs by R. D. Bull.

Figure 66

Pedicularis capitata and *P. flammea*.

Pedicularis capitata: A. habit, *Saarela et al. 3924. Pedicularis flammea*: B. habit, *Saarela et al. 3242.* Photographs by R.D. Bull.

Figure 67

Parnassia palustris subsp. *neogaea*.

A. habit, *Saarela et al. 4115.* B. inflorescence, *Saarela et al. 4115.* Photographs by R.D. Bull.

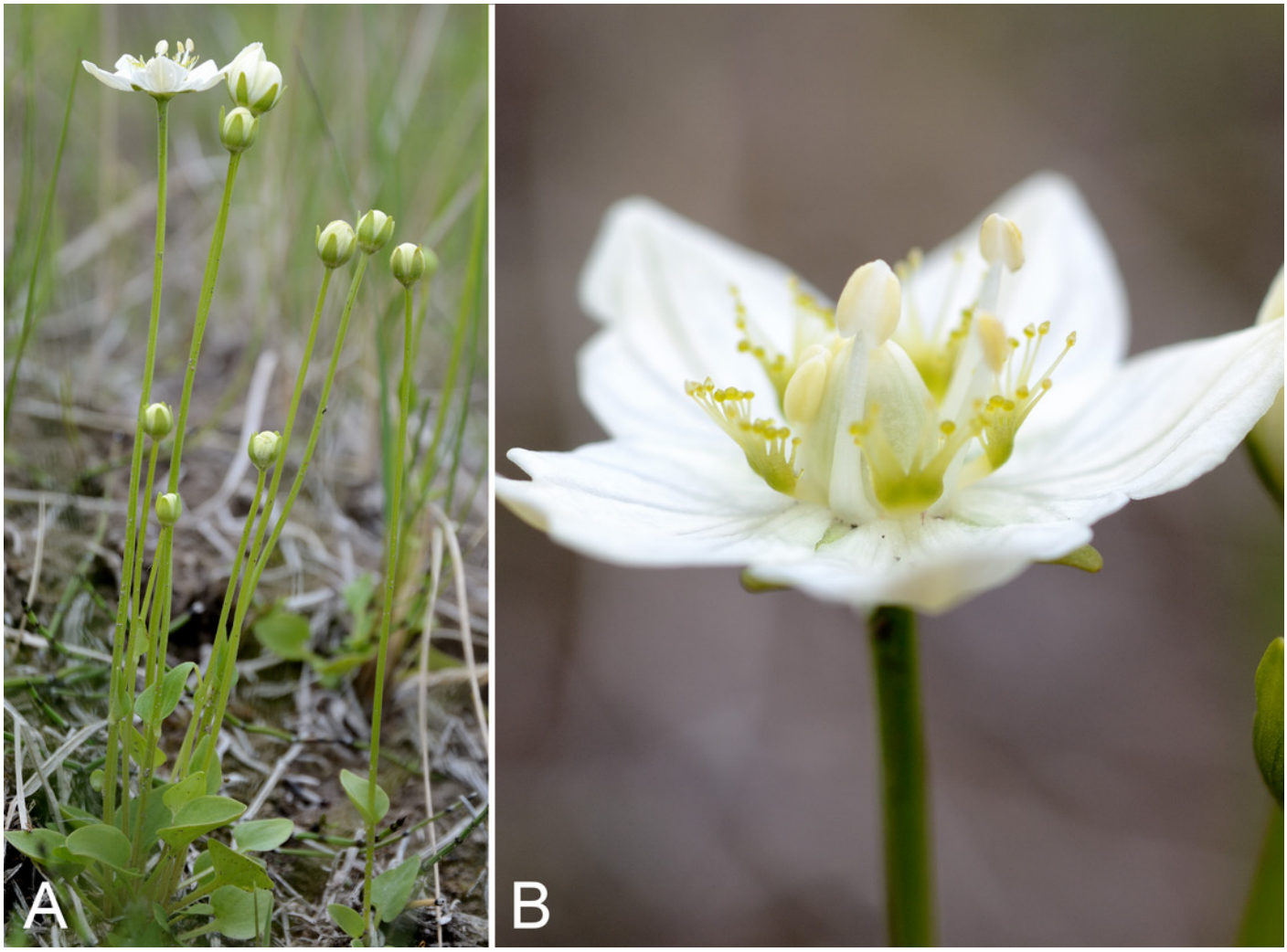

Figure 68

Bistorta vivipara and *Koenigia islandica*.

Bistorta vivipara: A. habit, Kugluk (Bloody Falls) Territorial Park, Nunavut, 17 July 2014.

Koenigia islandica: B. habit, *Saarela et al. 4315.* Photographs by P.C. Sokoloff.

Figure 69

Rumex arcticus.

A. habit, *Saarela et al. 3925.* B. inflorescence, *Saarela et al. 3925.* Photographs R.D. Bull.

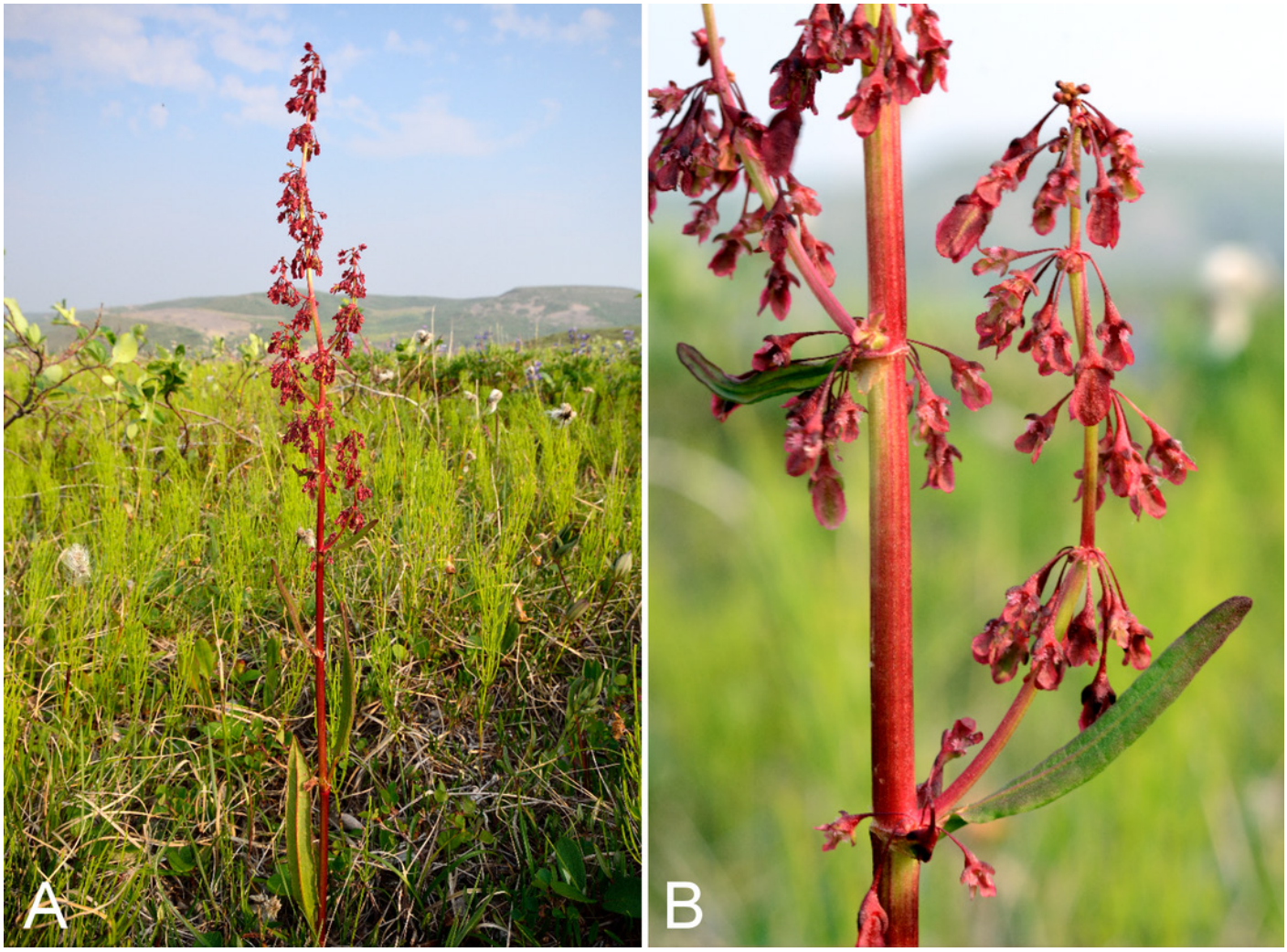

Figure 70

Caltha palustris subsp. *radicans*.

A. inflorescence, *Saarela et al. 3104.* B. habit, *Saarela et al. 3104.* Photographs by P.C. Sokoloff.

Figure 71

Halerpestes cymbalaria.

A. inflorescence and developing fruits, *Saarela et al. 4325.* B. habit, *Saarela et al. 3669.* C. habitat, *Saarela et al. 3669.* Photographs by R.D. Bull (A) and J.M. Saarela (B, C, D).

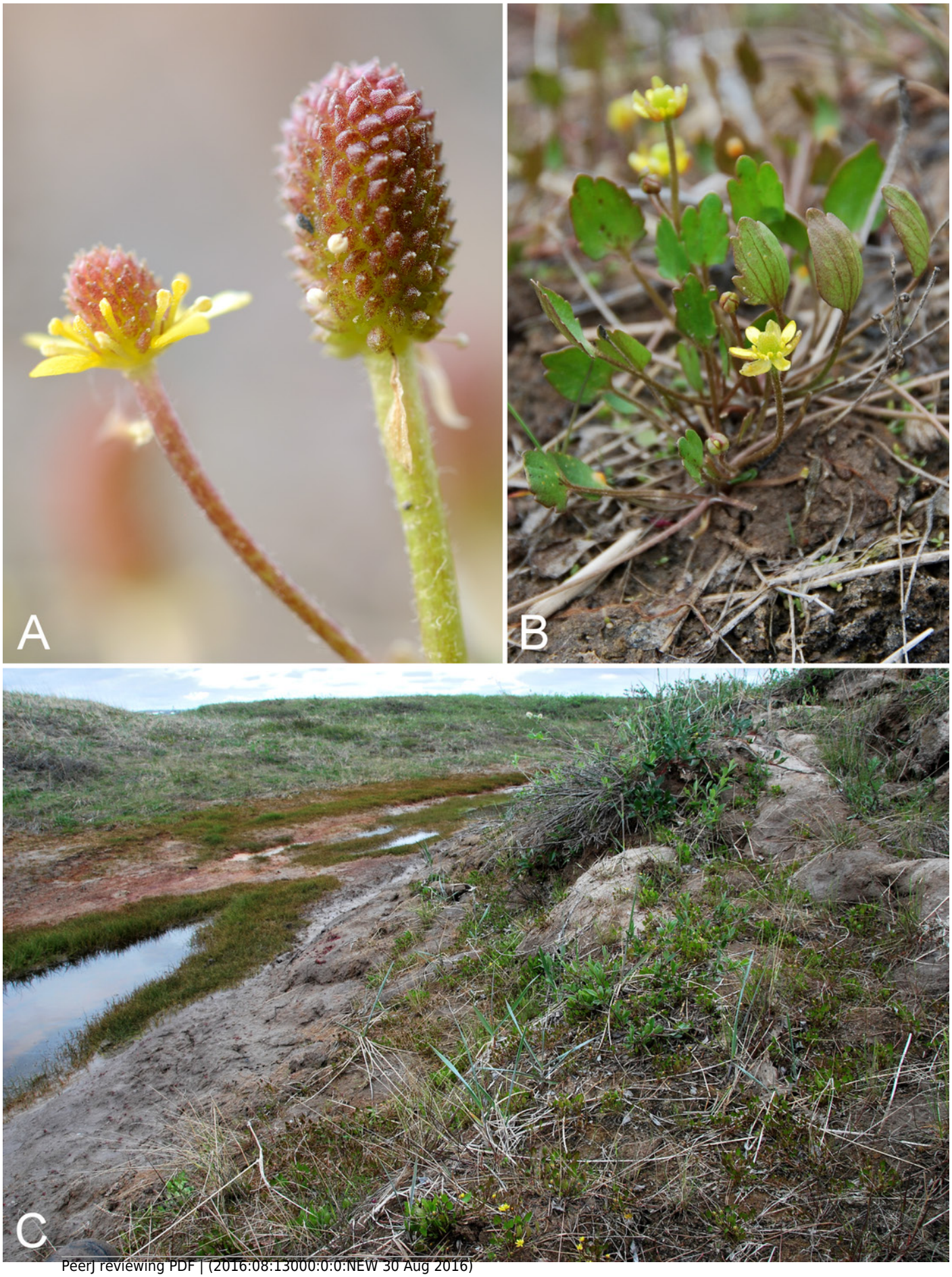
A
B
C

Figure 72

Ranunculus gmelinii subsp. *gmelinii* and *R. hyperboreus*.

Ranunculus gmelinii subsp. *gmelinii*: A. habitat, *Saarela et al. 3697. Ranunculus hyperboreus*: B. inflorescence, *Saarela et al. 3696.* C. habitat, *Saarela et al. 3696.* Photographs by J.M. Saarela (A) and R.D. Bull (B, C).

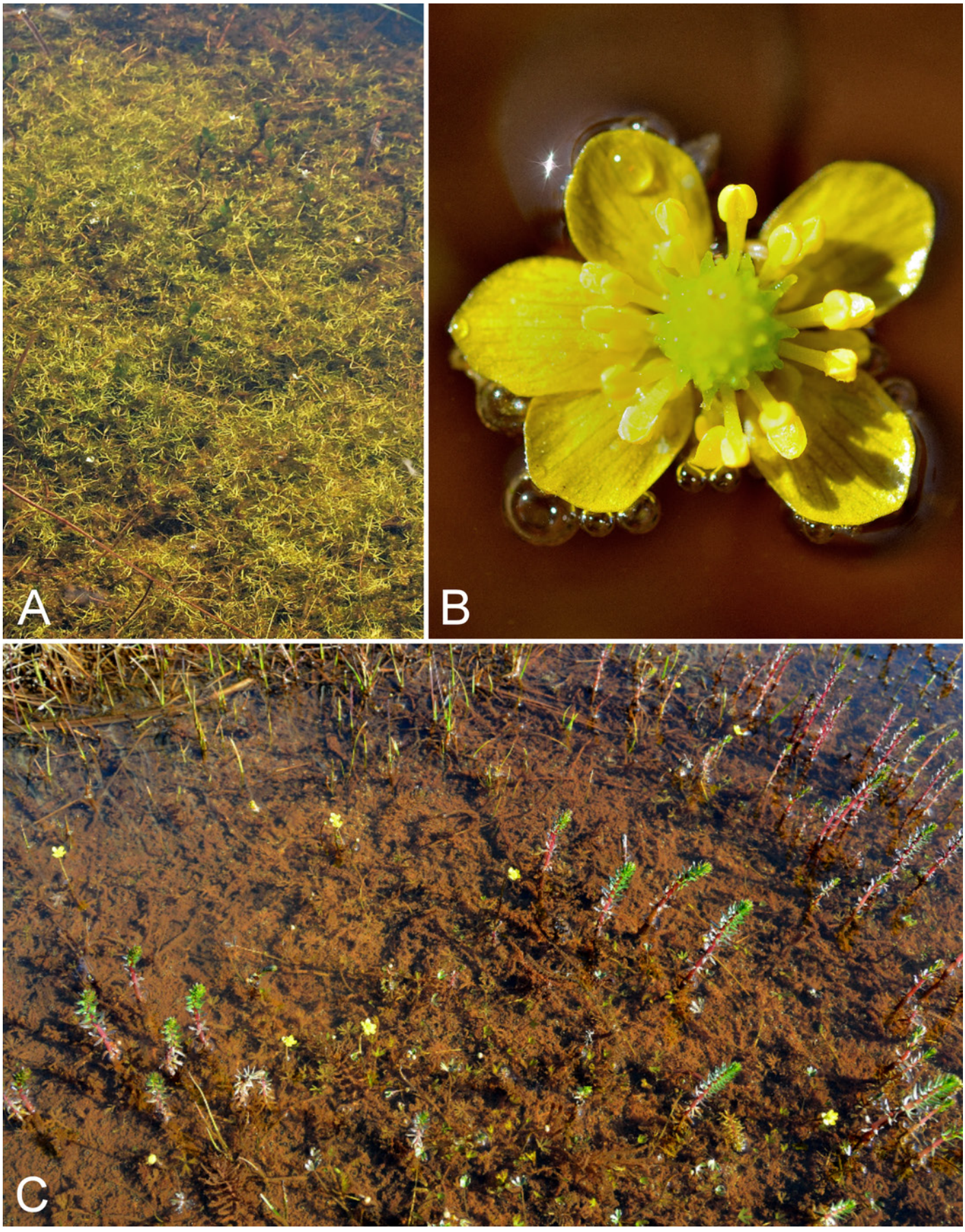
A
B
C

Figure 73

Dasiphora fruticosa.

A. habitat, *Saarela et al. 3123.* B. inflorescence, *Saarela et al. 3123.* Photographs by R.D. Bull.

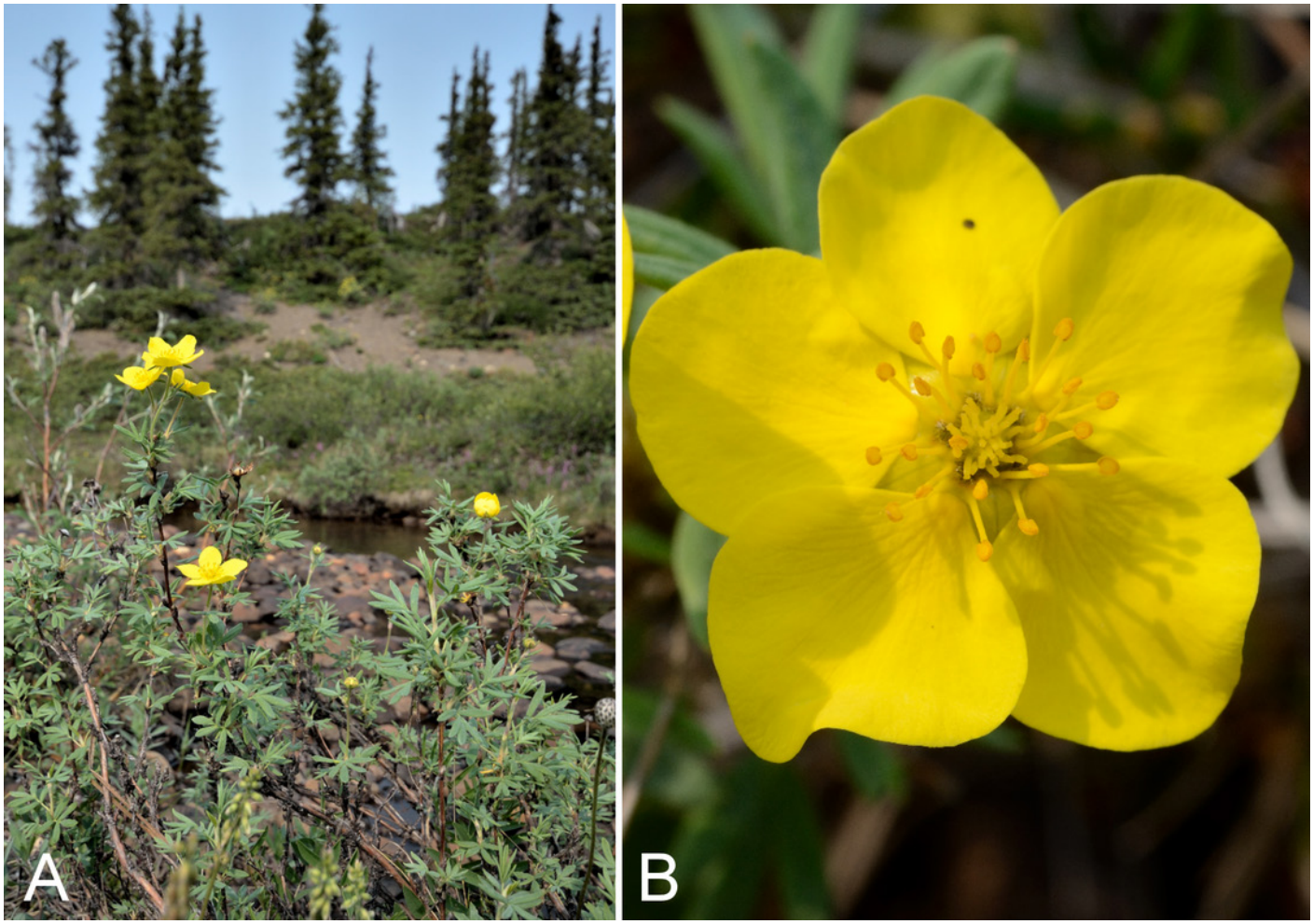

Figure 74

Potentilla biflora and *P. hyparctica*.

Potentilla biflora: A. habit, *Saarela et al. 3152*. *Potentilla hyparctica*: B. habit, Kugluktuk, Nunavut, 30 June 2014. Photographs by J.M. Saarela (A) and P.C. Sokoloff (B).

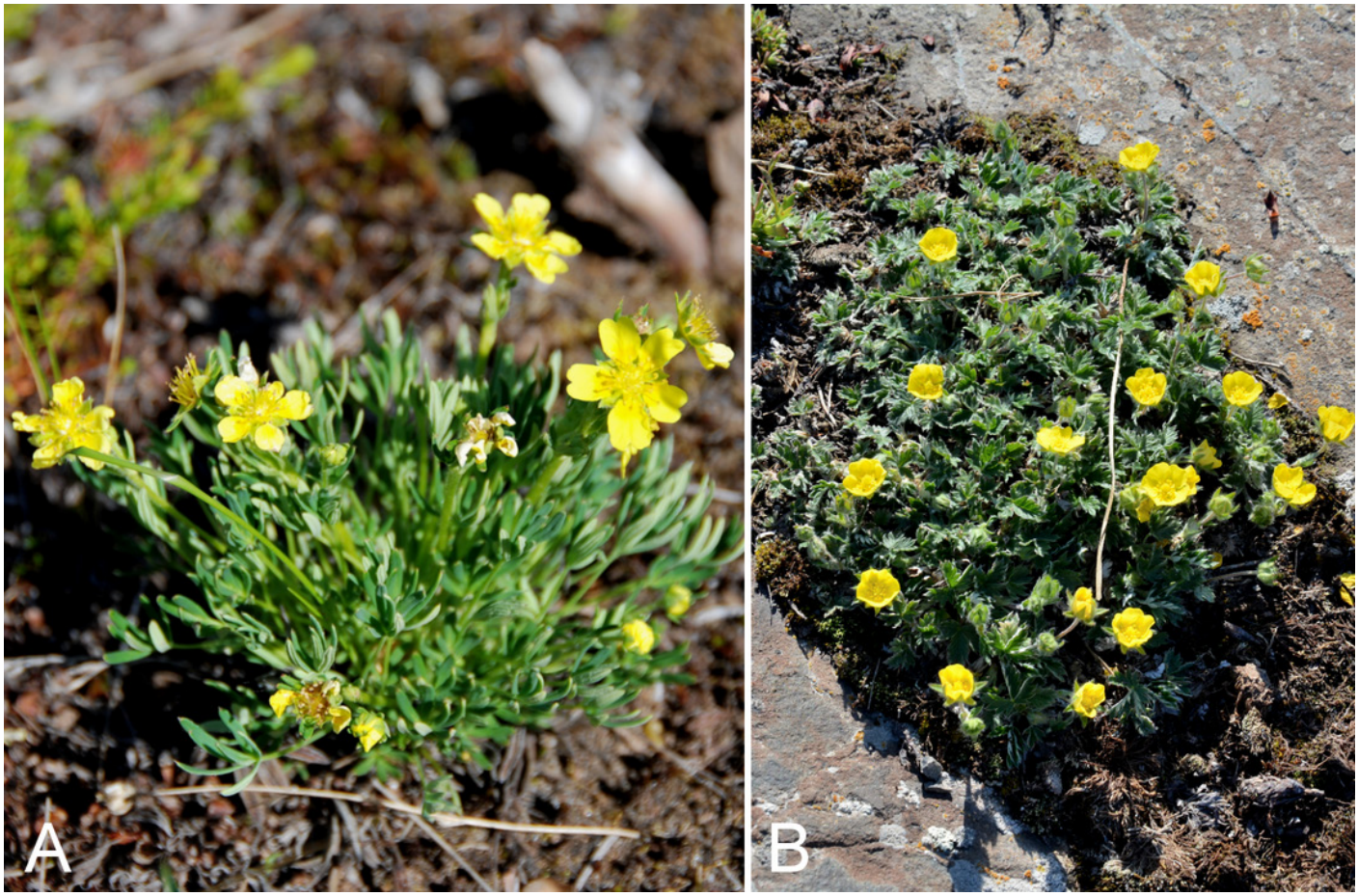

Figure 75

Rubus arcticus subsp. *acaulis*.

A. inflorescence, *Saarela et al. 3190.* B. habitat, *Saarela et al. 3190.* C. habit, *Saarela et al. 3190.* Photographs by R.D. Bull (A, C) and J.M. Saarela (B).

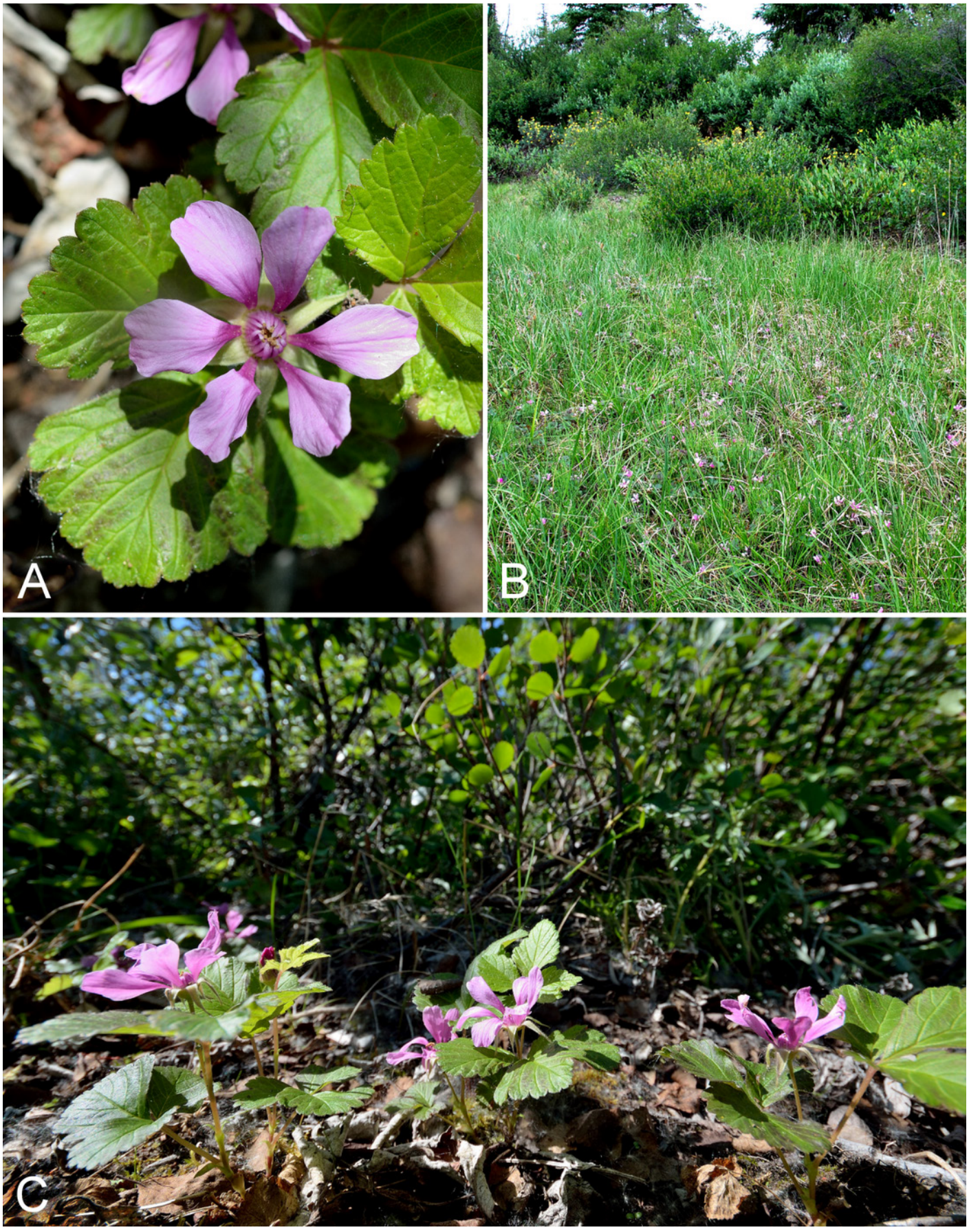
A
B
C

Figure 76

Populus balsamifera.

A. catkins, *Saarela et al. 3457.* B. habit, *Saarela et al. 3457.* C. habitat, *Saarela et al. 3457.*

Photographs by R.D. Bull.

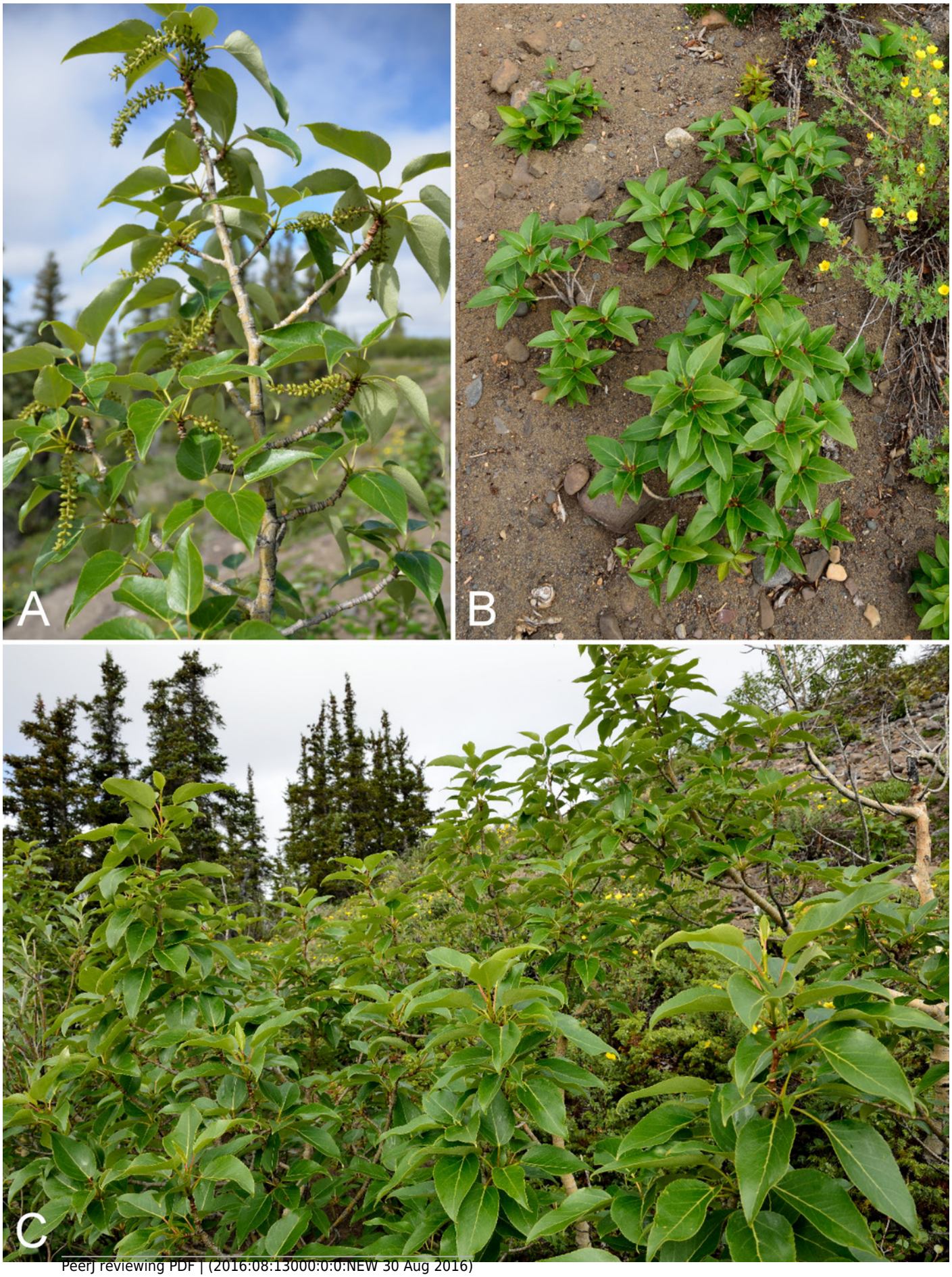
A
B
C

Figure 77

Salix alaxensis var. *alaxensis* and *S. niphoclada*.

Salix alaxensis var. *alaxensis*: A. habit, *Saarela et al. 4191. Salix niphoclada*: B. male catkins, *Saarela et al. 4019.* C. habit, *Saarela et al. 4019.* Photographs by J.M. Saarela (A), R.D. Bull (B) and P.C. Sokoloff (C).

A

B

C

Figure 78

Salix richardsonii.

A. male catkins, *Saarela et al. 3885.* B. female catkin, *Saarela et al. 3885*. C. habit, *Saarela et al. 3885.* Photographs by R.D. Bull (A, C) and J.M. Saarela (B).

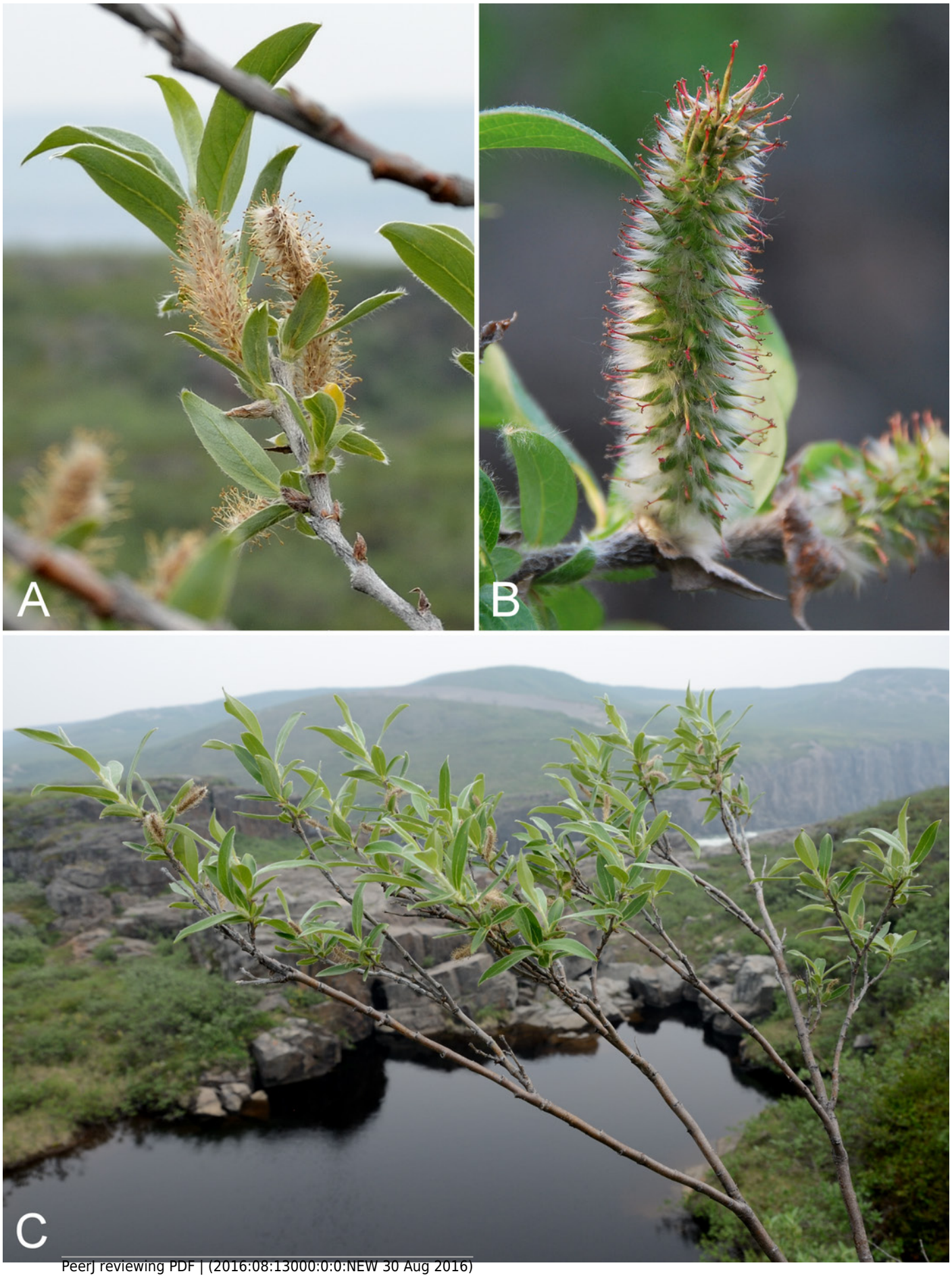
A
B
C

Figure 79

Chrysosplenium rosendahlii and *Micranthes foliolosa*.

Chrysosplenium rosendahlii: A. inflorescence and fruits, *Saarela et al. 4310. Micranthes foliolosa*: B. habit, *Saarela et al. 4382.* Photographs by P.C. Sokoloff (A) and R.D. Bull (B).

Figure 80

Micranthes porsildiana.

A. inflorescences, *Saarela et al. 4251.* B. basal habit, *Saarela et al. 4251.* Photographs by P.C. Sokoloff.