

Has *Dreissena polymorpha*, an older immigrant in a coastal Baltic lagoon, responded to appearance of a new non-indigenous dreissenid?

Brygida Wawrzyniak-Wydrowska¹, Anna Skrzypacz¹, Adam Woźniczka², Teresa Radziejewska¹

¹Palaeoceanology Unit, Faculty of Geosciences, University of Szczecin, Szczecin, Poland, ²National Marine Fisheries Research Institute, Gdynia, Poland

E-mail: brygida.wydrowska@usz.edu.pl

Although a non-indigenous species, *Dreissena polymorpha* (zebra mussel) has constituted a constant and abundant component of the Szczecin Lagoon biota. A congeneric dreissenid, *D. rostriformis bugensis* (quagga), was first recorded in the north of the Lagoon in 2014, already in abundance. In summer 2015, the quagga dominated over the zebra mussel in abundance and biomass. Quagga individuals there were much larger than those of *D. polymorpha*, while elsewhere in the Lagoon the zebra mussel still dominated the dreissenid assemblages. In summer 2016, the population structure of *D. r. bugensis* was substantially modified and its abundance was greatly reduced. *D. polymorpha* became the dominant again. In terms of biomass, after the initial domination, *D. r. bugensis* biomass declined substantially. The zebra mussel, although represented mostly by small individuals, has become a biomass dominant too on account of its high abundance. As of mid-2016, there has been no clear peak (evidencing the appearance of juveniles) in the quagga size distribution. The recent dreissenid samples show a large share of empty quagga shells, an effect not observed earlier. Therefore, it is plausible that the older immigrant, so far at least, has outcompeted the newcomer.

Key words: non-indigenous species, zebra mussel, quagga, lagoon

Acknowledgement: The support for the study was provided by statutory research funds of Palaeoceanology Unit, University of Szczecin and National Marine Fisheries Research Institute.