Biodiversity associated to the sponges and algae of the sculptures of the Underwater Museum of Art ("MUSA"), Cancún, Mexico.

Vivianne Solís-Weiss¹, Arturo Toledano-Granados¹, Jaime González-Cano², Nikita Jost³

¹ Unidad Académica de Sistemas Arrecifales, Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México, Puerto Morelos, Quintana Roo, México, 77580. email: No fax
² Instituto Nacional de la Pesca, CRIP, Puerto Morelos, Quintana Roo, México, 77580
³ Université de Montpellier, Hérault France,

Corresponding Author:
Vivianne Solís-Weiss¹
Av Niños Héroes s/n Pto Morelos, Quintana Roo, México, 77580

contacting author email address: solisw@cmarl.unam.mx
The famous Underwater Museum of Art or MUSA (>520 sculptures, 4-8m depth) located between Isla Mujeres and Cancún, Mexico, in a National Marine Park, helps in relieving tourist pressure on the worldwide-known reefs of the area, since many divers visit it annually (around 400 000). The hard substrate created by the sculptures enhances the area biodiversity by at least 16-20-fold (Rugosity measures). We compared the macrofauna associated to the dominant algae (*Lobophora variegata* and *Dictyota bartraryresii*) and sponge (*Amphimedon compressa*) growing on the sculptures and their variations with time. The two algae also have annual cycles and dominate at different times of the year, affecting their associated fauna. Samplings (quadrats 20X20cm) with SCUBA diving were made from March 2014 to February 2015. For this study, we identified 2064 marine invertebrates of the four main groups: Crustaceans dominated with 1098 (53%), followed by Polychaetes: 401 (19%), Echinoderms: 325 (16%) and Mollusks: 240 (12%). Among the latter, the gastropod *Cerithium litteratum* dominated overwhelmingly accounting for 75% of all the Mollusks. *Ophiactis* sp. (158 orgs, 49%) and *Ophiactis savignyi* (64 orgs, 20%) dominated among Echinoderms, amphipods among Crustaceans (705 organisms, 64.2%), sylillids (110 orgs, 27%) and sabellids (104 orgs, 26%) among Polychaetes. Other groups such as Sipunculans, Ascidians, Corals or Hydroids accounted for less than 1% and were not found in the sponge. Inside the sponge, Echinoderms, all juveniles, dominate overwhelmingly (93% of all Echinoderms were found there), Crustaceans follow. Polychaetes and Mollusks were almost as abundant in algae and sponge. The sponge constitutes a better shelter and probably also good feeding grounds for some macrofauna, especially Ophiuroids. *C. litteratum*, and the echinoids, being herbivorous, thrive preferably in the algal environment, especially *L. variegata*, and were never found in sponges, also the case for all large invertebrates.