LEARNING PORTAL

ROYAL BC MUSEUM

Question and Answer with Benthic Ecologist Sarah Cook

Why are glass sponge reefs important?

Glass sponge reefs are amazing, complex ecosystems with lots of nooks and crannies for fish and invertebrates to hide in so they provide important refuges for lots of creatures, such as juvenile rockfish. The glass sponge reefs on the coast of BC are also the only known extant examples of this ecosystem although sponge reefs used to be common in the shallow seas of the Earth around 100 million years ago. So they are also important because they give us insight into Earth's history and what the seas were like at that time.

What inspired you to study glass sponge reefs?

At the time I was starting my Masters the sponge reefs had just been discovered and I couldn't think of anything more fascinating than to study the ecology of a completely new benthic (seafloor) ecosystem. It was an opportunity to truly discover something new!

Can you tell us a bit about your research on glass sponge reefs?

My Masters thesis focused on characterizing the ecology of the sponge reefs by characterizing the community associated with them. I did this by analyzing the video taken using submersibles and ROVs from two expeditions as well as collecting, sorting and analyzing grab samples taken both on the reefs as well as off-reef. I was also comparing areas of the reef with living reef sponges as opposed to areas only characterized by dead sponge skeletons, which were generally areas that had been exposed to bottom trawling. The most important findings from my thesis were that the live portions of the reefs had increased species richness and abundance of individuals and those areas also acted as nursery habitats for juvenile rockfish. When looking at the grab samples, I focused on the polychaete worms as they were the most numerous and diverse group found in the samples. I analyzed them at different taxonomic levels and found that the diversity of polychaetes was higher in on the reefs at the family level, although not at the species level. And although there was overlap in the species found on-reef and off-reef, overall the composition of the communities were quite different.

Why did you donate your specimens to the Royal BC Museum?

The RBCM was kind enough to give me space to work, use of their equipment, access to the taxonomic keys and the specimens in the wet collection to aid in identification of my specimens for my Masters thesis work and I was very grateful for that support. I also strongly believe in making sure data is accessible to other researchers and the RBCM was the best way to do that and hopefully help to further more research on the sponge reefs.