LEARNING PORTAL

ROYAL BC MUSEUM

Glass Sponge Reef Communities

A brief summary of Sarah Cook's thesis, "Ecology of the Hexactinellid Sponge Reefs on the Western Canadian Continental Shelf," published in 2005.

In 2005, benthic (seafloor) and coastal ecologist Sarah Cook completed a study of the megafaunal (large animals) community on and around the reef complexes found in the Hecate Strait, the Georgia Strait and Queen Charlotte Sound. She used video footage from ROVs (Remotely Operated Vehicles) and other types of submersibles to describe the megafaunal community. She also used grab samples to evaluate the diversity and quantity of worms (polychaetes) on- and off-reef. Cook found that the reefs are home to a variety of marine creatures, including snails, octopuses, sea stars, brittle stars, crabs, lobsters, shrimp, worms of all types, skates, flatfish and juvenile rockfish, which are especially important. Her research provides evidence that on-reef and off-reef community structures are significantly different and create habitats for different species. Cook concludes that due to the unique habitat the reefs create and important species they house, they should be protected with designated marine protected areas.

Processed *Amphicteis muncronata* specimens from Sarah Cook's donation. They are safely preserved in ethanol for storage. This species of worm (polychaete) has one of the highest abundances found on the sponge reefs.

Source: RBCM

Royal BC Museum Donation

Cook generously donated her specimens to the Royal BC Museum, which allows scientists from all over the world to access her research.

The donation consists of 143 known marine species. These species consist of

- Worms (Polychaetes)
- Snails, clams, scallops (Molluscs)
- Sea/brittle stars (Echinoderms)
- Squat lobsters, isopods, crabs (Arthropods)

At least one unidentified (potentially new) species of worm is also included. The donation adds a total of 443 lots to the museum invertebrate collection, 16 of them species not yet in the collection. Sarah Cook's work, along with the work of many others, helped develop marine protected areas for the glass sponge reefs.

Sarah Cook's full thesis can be found here: *Ecology of the Hexactinellid Sponge Reefs on the Western Canadian Continental Shelf* (2005 MSc thesis. University of Victoria