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No Where Else on Earth: Protecting the Unique Glass Sponge Reefs of Hecate Strait



Glass sponge: Heterochone calyx.

Originally thought to have disappeared with the dinosaurs, in 1991, Canadian scientists documented the first known living glass sponge reefs in the world. These amazing reefs are found only off the coast of British Columbia, Canada. Threatened by trawl fishing, many are calling for the designation of the reefs as Marine Protected Areas.



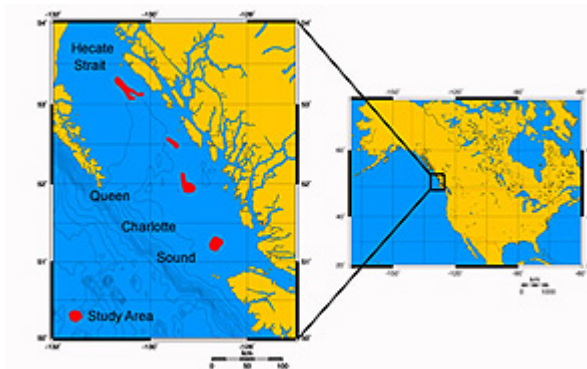
The s ponge reef belt during the Jurassic period was the largest biotic structure ever built on earth. Today's largest reef, the Great Barrier Reef in Australia, is relatively small by comparison.

The sponge reefs are found in 4 separate locations over 700 km² of seafloor in Queen Charlotte Sound and Hecate Strait, in British Columbia, Canada. Lying in depths of between 165 and 240 metres, the reefs consist of very dense populations of living hexactinosan (glass) sponges, often more than 1 m in height, creating mounds up to 19 m high and often many kilometres wide.

Sponges are among the oldest known multicellular animals. They filter water to extract food particles and live their whole adult lives in one place much like a plant. More than 7,000 species of sponges are alive today in both fresh and marine waters. Spicules that form the sponge's skeleton are made out of different materials such as silica, carbonate and protein fibres.

These glass sponge reefs grow in the deeper part of the continental shelf where surface and seabed currents are quite strong and the shelf waters are rich in nutrients making the region biologically productive. The reefs are also home to an array of other species such as rockfish (e.g. yelloweye), annelid worms, spider and king crabs, shrimp and prawns which use the openings in and around the sponges. In areas of dying sponge, sea stars and sea urchins are also common.

The reefs are very susceptible to damage caused by trawl fishing. They are currently protected by voluntary shrimp trawl fishery closures and by regulatory groundfish trawl fishery closures. Despite these efforts, on a research voyage last summer, Canadian and German scientists found new damage to the most pristine part of the reef, evidently caused by fishing trawl gear.



No where else on Earth: the current locations of the glass sponge reefs in Hecate Strait and the Queen Charlotte Sound, off the coast of British Columbia, Canada.

"We saw large areas where trawlers had smashed the sponge reefs," said Dr. Krautter, a palaeontologist and expert in sponge reefs from the University of Stuttgart. "It was a shock to discover that the northernmost reef in Hecate Strait has been damaged. What was once the most pristine part of the reef will take thousands of years to recover, if it is ever able to recover."

The Canadian Parks and Wilderness Society (CPAWS) has called for immediate action by Fisheries and Oceans Canada to impose fishing closures to protect the Hecate Strait Sponges, and to start a process to designate it as a marine protected area. Under Canada's Oceans Act, the Minister of Fisheries and Oceans (DFO) has the power to establish an emergency marine protected area that would immediately protect unique features like these sponge reefs.

DFO is currently monitoring the effectiveness of the fishery closures and working to assess the area as a potential Area of Interest for designation as a Marine Protected Area. The designation of a Marine Protected Area is a process which involves comprehensive

designation of a Marine Protected Area is a process which involves comprehensive consultations with a variety of stakeholders which can include scientists, First Nations, fishermen and concerned citizens. Based on the outcomes of these evaluations, DFO will decide whether there is a need to take the next step to protect the glass sponge reefs.



Dive down to the sponge reefs in these underwater videos.

Sources: Natural Resources Canada, University of Stuttgart, Fisheries and Oceans Canada, Canadian Parks and Wilderness Society.

Photos and videos courtesy of Natural Resources Canada and Universitat Stuttgart

**Learn More About the
Glass Sponge Reefs!**

[The Sponge Reef Project](#)
University of Stuttgart/Germany

[The Sponge Reef Project](#)
Natural Resources Canada

["DFO scientists urge quick protection of the
Hecate Strait Sponge Reefs as Marine
Protected Areas"](#)
Press Release, Canadian Parks and Wilderness Society

[Pacific Region Marine Protected Areas](#)
Fisheries and Oceans Canada

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