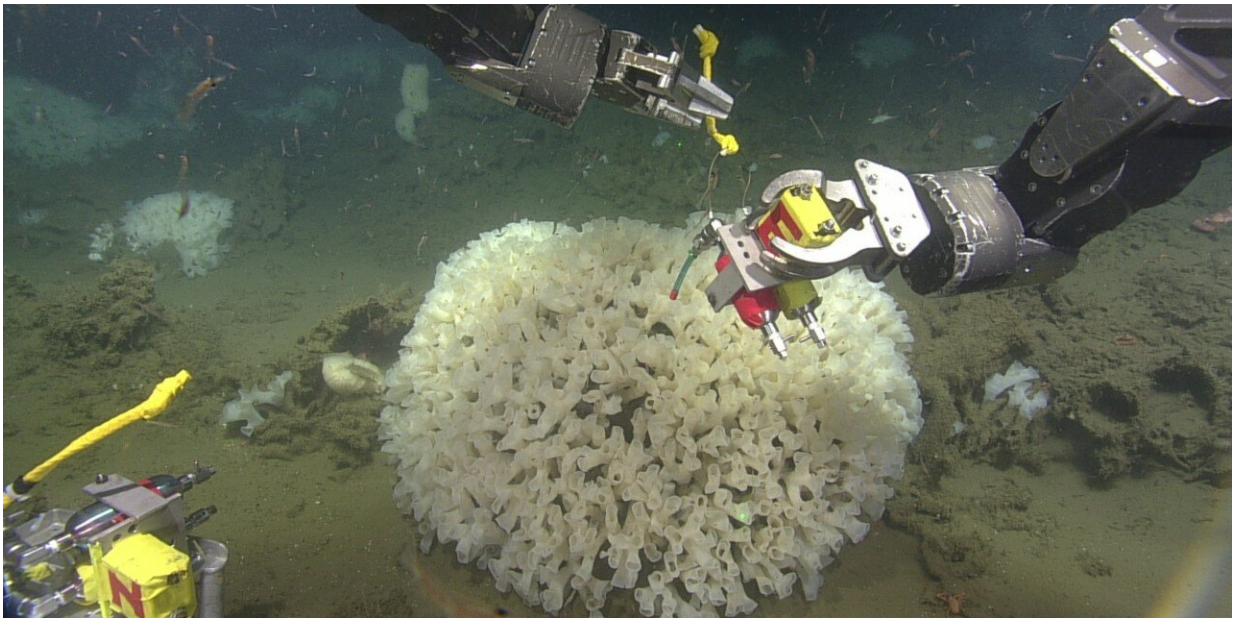


Sediment from fishing choking out sea sponges, study shows

June 6 2019, by Katie Willis



Researchers use remote-controlled vehicles to place instruments near glass sponges in a reef off the coast of northern B.C. to measure how they are affected by sediment stirred up from the seafloor. Credit: Sally Leys/CSSF-ROPOS/DFO Canada

Sediment stirred up from fishing activity has a detrimental effect on reef-building sea sponges in northern British Columbia, according to a new study by University of Alberta biologists.

The sediment is kicked up during human activities such as bottom trawling, where a weighted net is dragged across the seafloor. It includes [organic matter](#) as well as clay and silt, which can smother sponges from the outside or, if taken into their filtration system, clog them.

"If sponges are clogged, they can die, and if sponges die, then the other animals that use the sponges as homes or as food are in trouble as well," explained U of A marine biologist Sally Leys, who was lead author of the study.

"The finer the particle, the worse for the sponge. Even a week of not filtering could mean the death of the reef."

Critical to ocean health

A critical part of the marine ecosystem, sponges act as a filtration system for the sea, consuming bacteria and returning nutrients to the waters that help sustain plankton and fish. The sponges also provide habitat in the form of reefs, which provide homes to countless marine organisms.

In the study, the research team examined three species of sponge in the Hecate Strait and Queen Charlotte Sound glass sponge reefs off the coast of British Columbia.

"Sensitive areas, especially those with filter-feeding animals, need a buffer zone that is large enough to prevent the transit of suspended sediments over the animals," said Leys.

"We provide a model that shows what size the boundary or buffer zone around a region of filter feeders needs to be to safeguard the animals."

In 2017, Fisheries and Ocean Canada, which collaborated on this study, established a 2,410-square-kilometre protected area around four reefs in

the Hecate Strait and Queen Charlotte Sound.

The researchers recommended the boundaries of the existing buffer zone around this protected area, known as the Adaptive Management Zone, be expanded to at least 2.39 kilometres and up to six kilometres—about the distance the finest [sediment](#) particles can travel according to the research—to fully protect the [sponges](#). The current zone varies from just over half a kilometre to four and a half kilometres wide.

The study, "Effect of Suspended Sediments on the Pumping Rates of Three Species of Glass Sponge in situ," is published in *Marine Ecology Progress Series*.

More information: N Grant et al. Effect of suspended sediments on the pumping rates of three species of glass sponge in situ, *Marine Ecology Progress Series* (2019). [DOI: 10.3354/meps12939](https://doi.org/10.3354/meps12939)

Provided by University of Alberta

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