



What are Glass Sponge Reefs?

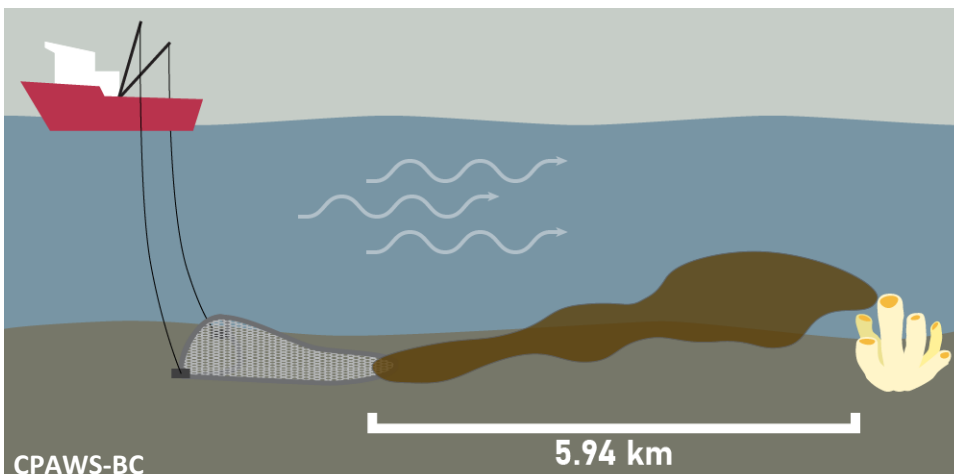
They are sponges with skeletons made of silica that are able to form large reefs by building on top of one another. They filter seawater to feed on microbes² and were common in the Jurassic period. They live up to 240 m below the surface.¹

Why are Glass Sponge Reefs Important?

British Columbia is home to the only remaining glass sponge reefs. They are 9000 years old and provide habitat for many species, sequestering carbon faster than terrestrial forests.²

Glass Sponge Reefs Need Larger Buffers

- Glass sponge reefs are ancient and **ecologically important** organisms that are unique to British Columbia.¹
- Sediment clouds from nearby **bottom trawling** are **smothering glass sponge reefs** in Hecate Strait/Queen Charlotte Sound marine protected areas,³ preventing them from feeding for over 6 hours at a time.⁵
- Current adaptive management zones (**AMZs**) are ineffective at protecting the reefs and I recommend that they be **increased to 6km** or at least 3 km to prevent sediment deposition.
- This would require a relatively small increase in protected area for a **significant increase in protection**.⁶



Why a 6km AMZ?

Plumes of sediment generated by bottom-contact fishing can pass over AMZ boundaries. Small sediments can travel up to 5.94km, so increasing the AMZs to this distance will protect the sponge reefs.³

Sediment from Trawling Decreases Sponge Feeding

-30%

When sediment smothers the sponges, they stop filtering seawater to avoid clogging their pores.¹ During these pauses, they are unable to feed for 6-12 hours at a time.⁵ Conservative estimates state that sponges exposed to sediment from trawling will lose approximately 30% of their daily food intake.¹ The physiological stress and energetic losses are detrimental and risk permanent reef damage.¹ Since half of these reefs have already been destroyed, it is critical to protect what remains.

The pictures below demonstrate a healthy reef (left) and a reef that has been partially smothered by sediment (right).³ By increasing buffer zones, we can reduce the amount of sediment that is harming these unique animals.³

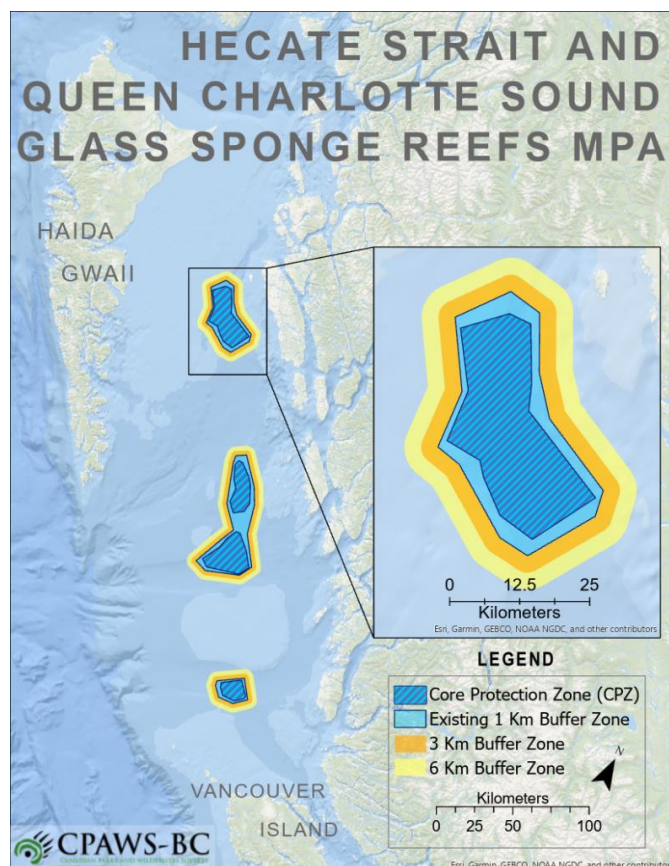


DFO, Sally Leyes



Grant et al. 2019

AMZ Size	Predicted Outcome
Current (600 m – 4.5 km)	No bottom-contact fishing is allowed within 1km of the reefs, but they are still being smothered in sediment from nearby bottom trawling. ³ The variable AMZ width provides insufficient protection for long-term survival.
3 km	Larger particles will reach the reef more infrequently, but the levels of sediment will still be above the tolerance threshold for some species to grow. ³
6 km	Plumes of sediment will likely not reach the reef, allowing sponges to feed. ³ This gives sufficient protection for long-term survival.



References

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Email: jadeshivak@gmail.com

Twitter: @JadeShivak