

# NEW ZEALAND MARINE SCIENCES SOCIETY

TE HUNGA MĀTAI MOANA O AOTEAROA



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Spatial Planning and Allocations  
Fisheries Management  
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**Submission to Fisheries New Zealand:**  
***Proposed temporary closure of the eastern Coromandel coast  
to the harvest of scallops***

This submission is made on behalf of the membership of the New Zealand Marine Sciences Society (NZMSS). It is made in good faith in my role as President of the NZMSS and in accordance with the Code of Ethics and Rules of the Royal Society of New Zealand.

NZMSS supports the application by Ngāti Hei for a two-year temporary closure around the eastern Coromandel coast to all harvest of scallops under section 186A of the Fisheries Act. In addition, we urge significant investment in research on the impacts of dredging for scallops on seafloor ecosystems. Our detailed submission is attached.

Please contact me at the email address provided below for any further information regarding this submission.

Handwritten signature of Kathy Walls in purple ink.

Kathy Walls

President  
New Zealand Marine Sciences Society

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# **NZMSS Submission on the proposed temporary closure of the eastern Coromandel coast to the harvest of scallops**

## **The New Zealand Marine Sciences Society**

The New Zealand Marine Sciences Society, known as 'NZMSS', was formed in 1960 as a constituent of the Royal Society of New Zealand, to encourage and assist marine science and related research across a wide range of disciplines in New Zealand and to foster communication among those with an interest in marine science.

NZMSS is a professional science body and a non-profit organization. We identify emerging issues through annual conferences, annual reviews, a listserv and our website <https://nzcss.org/>. NZMSS membership covers all aspects of scientific interest in the marine environment and extends to the uptake of science in marine policy, resource management, conservation, and the marine business sector. We speak for members of the Society on matters of interest on marine research in New Zealand and engage with other scientific societies as appropriate. Our current membership comprises over 200 members.

Our submission is consistent with the Royal Society of New Zealand Code of Ethics and Rules, in particular principles 2.1 Integrity and professionalism, 4.1 Compliance with the law and relevant standards, and 10.1 Protection of the environment ([www.royalsociety.org.nz/organisation/about/code](http://www.royalsociety.org.nz/organisation/about/code)).

## **Submission**

NZMSS supports the application by Ngāti Hei for a two-year temporary closure around the eastern Coromandel coast to all harvest of scallops under section 186A of the Fisheries Act. Ngāti Hei is concerned about the overfishing of scallops and the destructive fishing methods used to harvest these shellfish. A recent community survey in Opito Bay showed that divers needed to swim on average 26 m<sup>2</sup> to find a single legal sized scallop (Bay of Plenty Times 2021). The concerns of Ngāti Hei are echoed by others in the community, including the Opito Bay Ratepayers Association, New Zealand Sports Fishing Council, LegaSea, New Zealand Underwater Association, Mercury Bay Game Fishing Club, Tairua Pauanui Sports Fishing Club, and Whangamata Ocean Sports Club.

NZMSS is also concerned about the loss of scallops from subtidal seafloor habitats, not just in the Coromandel region but across the entire country. Scallop fisheries around New Zealand are collapsing or in decline (e.g., Golden and Tasman Bays, the Marlborough Sounds, Kaipara Harbour, Whangaroa Harbour; Williams et al. 2014, Anderson et al. 2019, Northern Advocate 2021). These declines have been attributed to overfishing, anthropogenic stressors and the fishing method (dredging) that is used to harvest the scallops, which directly impairs the ability of these shellfish to recruit and grow (in addition to its other negative environmental impacts, which are outlined below). Closing the eastern Coromandel coast to all harvest of scallops will address community concerns and help prevent further decline of stocks while Fisheries New Zealand collects scientific data to support their decision on the long-term fate of this fishery.

Seafloor disturbance from fishing gear, such as the dredges used to fish for scallops, is one of the greatest threats to New Zealand's marine environment (MacDiarmid et al. 2012). Bottom fishing methods cause several direct and indirect effects to the marine environment (Thrush & Dayton 2002). Direct effects include crushing non-target organisms or removing them as by-catch, thereby reducing the types of seafloor animals present and their densities (Thrush et al. 1995, Currie & Parry 1996). Over large areas and timescales, dredging is expected to remove large, long-lived animals and select for small, mobile species that are tolerant of disturbance (Thrush et al. 1998, Thrush et al. 2001). The large, long-lived animals that are affected by dredging often play important roles in ecosystem functioning, hence their loss could have major consequences for our oceans (Lohrer et al. 2005).

As the dredging gear is dragged along the seabed, it also destroys fragile marine habitats that create three-dimensional structural complexity in an otherwise relatively homogenous soft-sediment environment (e.g., horse mussels and bryozoans; Cummings et al. 1998, Grange et al. 2003, Tuck et al. 2017). For example, Hay (1990) described an intensively fished area in the Marlborough Sounds as a *“flat, featureless bottom, completely criss-crossed with the marks of scallop dredges”*. In contrast, a nearby undredged area was found to have dense horse mussels, *“lush growth”* of red and brown seaweeds and *“abundant fish life”*. Three dimensional structure created by these marine habitats provides essential breeding and nursery spaces, refuge from predators and underpins many of the ecosystem services that we derive from the oceans (Anderson et al. 2019). Dredging also flattens small-scale topographic features, such as burrows and mounds, further reducing the spatial heterogeneity that is critical for maintaining diversity (Thrush et al. 2001). Thus, removal of habitat structure in soft-sediment systems as a result of dredging will significantly decrease their biodiversity, and consequently that of the wider marine ecosystem (Thrush et al. 2001).

Indirect effects of bottom fishing include those arising from the ploughing and resuspension of the seafloor sediments (Churchill 1989, Schoellhamer 1996, Durrieu De Madron et al. 2005), which can negatively affect the scallops themselves as well as other organisms in the ocean. For example, resuspended sediment can smother shellfish (e.g., Ellis et al. 2002), bury settlement substrates (e.g., shell debris and algae; Michael et al. 2012) and block out light, preventing the development of algal films that provide an important food source (e.g., Gillespie et al. 2000) and enhance settlement (Michael et al. 2012).

For the reasons outlined above, NZMSS considers that dredging as a method for harvesting scallops is not sustainable in the Coromandel, nor elsewhere in our coastal waters. Therefore, in addition to supporting the request by Ngāti Hei for a two-year temporary closure, NZMSS urges significant investment into research on the impacts of dredging for scallops on marine seafloor ecosystems, including investigating the recovery of the scallop beds in the proposed Coromandel closed area to help inform decision making after the two-year closure.

## Summary

- NZMSS supports of the application by Ngāti Hei for a two-year temporary closure around the eastern Coromandel coast to all harvest of scallops under section 186A of the Fisheries Act.

- NZMSS urges significant investment into research on the impacts of dredging for scallops on marine seafloor ecosystems. We further request that research into the recovery of scallop beds in the proposed closed area is undertaken to help inform decision making after the two-year closure.

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