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Ministry of Primary Industries
Online submission

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Submission on the Proposed National Environmental Standard for Marine Aquaculture

Thank you for giving Auckland Regional Public Health Service (ARPHS) this opportunity to provide a submission on the proposed National Environmental Standard for Marine Aquaculture.

The following submission represents the views of ARPHS and does not necessarily reflect the views of the three district health boards it serves. Please refer to Appendix 1 for more information on ARPHS.

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Scope of submission and recommendations

1. The Auckland Regional Public Health Service (ARPHS) has been involved in aspects of marine farm sanitary assessment and investigation of outbreaks of human disease caused by shellfish contamination. Marine aquaculture is an important contributor to the local economy in several parts of the Auckland region, including the Mahurangi Harbour, Waiheke Island, Great Barrier Island, and Hauraki Gulf. While ARPHS supports the aim of the proposed National Environmental Standard for Marine Aquaculture (NES) to ensure continuation of aquaculture when consents expire, we wish to ensure that marine aquaculture is not adversely affected by deteriorating water quality caused by land-based activity such as urbanisation, on-site sewage treatment system discharge, land use changes and other catchment contamination, through the RMA process.
2. A number of serious shellfish contamination incidents have occurred where there has been inadequate protection of marine farms from land-based activities. In the Auckland and Northland regions these incidents have affected shellfish farms in the Waikare Inlet (Northland), Mahurangi Harbour and Clevedon.
3. Good water quality is essential for the viability of marine aquaculture. The existing marine farms in and around the Auckland region grow and harvest bivalve shellfish (i.e. mussels and oysters), which are capable of concentrating, pathogenic micro-organisms and other contaminants.
4. Human consumption of contaminated shellfish can be associated with a number of illnesses, with the more common of these including norovirus, and toxic shellfish poisoning, which includes neurotoxic, amnesic, paralytic, and diarrhoeic shellfish poisoning.
5. Contamination of commercial shellfish beds with norovirus (which causes severe gastroenteritis) is well known. Several norovirus outbreaks caused by contaminated commercially grown shellfish have been documented in New Zealand in the last twenty years; some likely caused by discharge of untreated sewage from vessels, others from failure of land-based sewage reticulation and treatment systems.
6. Several biological and environmental factors make norovirus contamination a high risk for commercial shellfish operations as well as for cultural and recreational shellfish gathering. These factors include that:
 - The infective dose of norovirus is low, under 100 viral particles.
 - Norovirus particles are excreted in very high numbers during illness – upwards of 10^9 viral particles per millilitre of faecal material. Severe episodes could involve some litres of diarrhoea and vomiting, resulting in around 10^{12} viral particles excreted. Excretion can persist for some weeks after the illness.

- Norovirus persists in seawater for some days to weeks, unlike most of the microbiological indicator organisms used for assessment and monitoring.
 - Bivalve molluscs are very effective at concentrating norovirus particles in their gut, with some research finding more than 100 viral particles per gram of shellfish flesh. The viral particles persist in oysters for several weeks, while bacterial indicators may return to acceptable limits.
 - Depending on location, dispersal and currents, a single episode of norovirus gastroenteritis could in theory contaminate several thousand cubic metres of seawater sufficiently to contaminate shellfish and cause further episodes or outbreaks of gastroenteritis.
7. As MPI are aware, an outbreak of norovirus in January this year was linked to the consumption of raw oysters from the Mahurangi/Matakana region. Between 24 January and 1 February 2017 ARPHS and MPI responded to reports of several clusters of gastroenteritis cases implicating raw oysters sourced from this region. ARPHS understands that MPI closed the Mahurangi Harbour for harvesting and further investigation, including a shoreline survey.
8. ARPHS is concerned that as urban expansion and agricultural intensification occur the risk of contamination will increase unless there is active catchment management and contaminant control. As such, ARPHS does not support any regulatory settings that preclude an assessment of the public health risk when undertaking consent renewals for existing marine farms located in marine environments which are either currently degraded, or likely to become degraded.
9. ARPHS therefore recommends the following changes be included in any proposed NES (illustrated through amendments to the Indicative NES provisions outlined in Appendix F of the discussion document):

Amend Indicative provision 5 to consider:

- Where, following the gazetting of this national environmental standard, a regional council determines through a regional coastal plan that an area of the coastal marine area is inappropriate for existing aquaculture, *or is likely to become inappropriate for existing aquaculture during the term of the consent because of deterioration of water quality caused by activities allowed in a relevant Regional or District Plan*, existing marine farms located within that area are a discretionary activity.

Add the following matter of discretion to Indicative provision 12:

- Monitoring of sea water quality – (this proposed matter of discretion aligns with policy 8: Aquaculture in the New Zealand Coastal Policy Statement 2010 (NZCPS), which recognises the need for high water quality for aquaculture activities.)

10. Inclusion of these provisions is our preferred approach as it will guarantee the opportunity to consider any potential/actual public health risks associated with existing marine farms.

Notification

11. ARPHS considers public health units should have the opportunity to comment on a replacement consent application for an existing marine farm if there has been a previous history of disease outbreaks from shellfish contamination in the previous 10 years.

Protecting shellfish farms from sewage discharge from vessels

12. Given shellfish are water quality sensitive receivers, the proposed NES development process may provide a good opportunity to review and amend the current standard for the distance a ship or offshore installation can discharge sewage from a marine farm. The Resource Management (Marine Pollution) Regulations 1998 currently state that no person may discharge sewage in the coastal marine area from a ship or offshore installation unless that discharge occurs more than 500m from a marine farm. This standard sits uncomfortably with policy 23 of the NZCPS.

13. During the Proposed Auckland Unitary Plan hearings process, ARPHS advocated that this 500m distance standard appears minimal, and is likely to be inadequate to prevent shellfish farm contamination. We also noted that currents, tides and dispersal are highly dependent on local situations.

14. We would support any future review of the Marine Pollution Regulations that considers the requirement for new vessels, including most small vessels, to be fitted with effluent holding tanks, as well as any initiatives that support the provision of on-shore collection and treatment facilities.

Conclusion

15. Thank you for the opportunity to submit on the proposed National Environmental Standard for Marine Aquaculture.

Appendix 1 - Auckland Regional Public Health Service

Auckland Regional Public Health Service (ARPHS) provides public health services for the three district health boards (DHBs) in the Auckland region (Counties Manukau Health and Auckland and Waitemata district health boards).

ARPHS has a statutory obligation under the New Zealand Public Health and Disability Act 2000 to improve, promote and protect the health of people and communities in the Auckland region. The Medical Officer of Health has an enforcement and regulatory role under the Health Act 1956 and other legislative designations to protect the health of the community.

ARPHS' primary role is to improve population health. It actively seeks to influence any initiatives or proposals that may affect population health in the Auckland region to maximise their positive impact and minimise possible negative effects on population health.

The Auckland region faces a number of public health challenges through changing demographics, increasingly diverse communities, increasing incidence of lifestyle-related health conditions such as obesity and type 2 diabetes, infrastructure requirements, the balancing of transport needs, and the reconciliation of urban design and urban intensification issues.