

41135 Identify, prevent, and respond to biosecurity threats in an aquaculture operation

Kaupae Level	3
Whiwhinga Credit	10
Whāinga Purpose	<p>This skill standard is for people who are currently working in the aquaculture industry.</p> <p>The focus of this skill standard is to equip learners with the knowledge and practical skills to identify, prevent and respond to biosecurity threats in an aquaculture operation.</p> <p>It ensures that learners understand the importance of biosecurity to environmental sustainability, stock health and market access.</p> <p>Learners will be able to follow workplace biosecurity procedures and contribute to maintaining a safe and compliant operational environment.</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Carry out preventative procedures to control biosecurity threats in an aquaculture operation.	a. Demonstrate correct cleaning and disinfecting techniques for equipment or surfaces, using appropriate materials and following relevant industry or site-specific protocols.
	b. Manage waste according to biosecurity procedures including correct disposal, containment, or treatment of potentially contaminated materials.
	c. Implement access control measures to restrict or monitor personnel and/or vehicle movement into or within sensitive areas, following site-specific protocols and signage requirements.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
2. Recognise and respond to actual or potential breaches in biosecurity in an aquaculture operation.	a. Identify common signs of actual or potential biosecurity breaches, such as unauthorised access, unusual stock condition, or improper sanitation procedures.
	b. Describe the correct response procedures including who to respond to, how to escalate the issue and what actions should be taken to contain the breach.
	c. Complete incident documentation, including the date, nature of the breach, who was informed, and any immediate actions taken, in accordance with workplace protocols.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

Simulations are an acceptable means of assessment.

It is expected that programmes consider ngā kaupapa (the principles) o te Tiriti o Waitangi and relevant te ao Māori values and practices and provide opportunities for ākonga to apply them as appropriate to the subject matter and context.

All activities should, as relevant to candidates and/or this standard, reflect the peoples of the Pacific and other cultures, and their world views.

All activities must consider the needs of Tangata Whaikaha where possible.

Definitions:

Disease – a condition in aquatic animals caused by pathogens that negatively affects their normal physiological functions, leading to impaired health, reduced productivity, or increased mortality, and posing a risk of transmission to other stock or sites.

Invasive species – non-native aquatic organisms that are introduced (intentionally or unintentionally) into a new environment, where they establish, spread, and cause harm to native species, ecosystems, aquaculture operations, or the economy.

Sites – designated locations where aquaculture activities occur, such as breeding, rearing, growing, or harvesting aquatic organisms. Sites can be land-based (hatcheries, tanks, raceways) or water-based (ocean pens, coastal farms, seaweed lines).

Stock – the population of aquatic organisms (such as fish, shellfish, or seaweed) being bred, reared, or harvested within a farming operation.

Ngā momo whiwhinga | Grades available

Achieved

Ihirangi waitohu | Indicative content

Common biosecurity threats

- Definition of biosecurity in aquaculture and its importance.
- Overview of biological threats:
 - Disease outbreaks.
 - Invasive species.
 - Vectors of cross-contamination (nets, boots, boats, shared water sources).
- Real-world examples of past biosecurity failures and their impacts.
- Role of stock movement, movement between sites, equipment transfer, and water flow in spreading pathogens or unwanted species.
- Effect of cross-contamination of species on tanks and farms on the purity and standard of end-product being produced.
- Biosecurity requirements around hatchery operational components.

The cost of poor biosecurity

- The economic and ecological cost of poor biosecurity.
- How diseases can spread and persist in aquaculture systems.
- Environmental impacts of invasive species and cross-contamination.
- Relationship between biosecurity, certification, and international market access (MPI and export standards).
- Discussion of regulatory frameworks and sustainability guidelines in NZ and internationally.

Biosecurity procedures

- Standard operating procedures (SOPs) for cleaning and disinfecting gear and vessels.
- Types of disinfectants, their correct use, and safety considerations.
- Waste management protocols: types of waste, containment, and disposal regulations.
- Access control measures:
 - Visitor sign-in/out procedures.
 - Protective clothing and gear requirements.
 - Use of footbaths, wash stations, and vehicle sanitisation.
- Demonstration of cleaning routines and access controls.
- Procedures to prevent cross-contamination between tanks and farms.
- Identifying and reporting pest species or threat species both onshore (e.g. tanks) and offshore (e.g. kelp farms).

Recognising and responding to biosecurity breaches

- Identifying potential breaches:
 - Unauthorised access, unusual stock condition, broken containment barriers.
- Workplace reporting lines: who to tell, when, and how.
- Methods for incident documentation:
 - Using logbooks, digital systems, and incident forms.
- Communication protocols during suspected outbreak events.

- Practicing breach scenarios and responses in simulated environments.
- Introduction to legal obligations and reporting under NZ biosecurity law.

Rauemi | Resources

- [Marine Biosecurity Porthole.](#)
- [Ministry of Primary Industries - Biosecurity.](#)
- [Ministry of Primary Industries Aquaculture Biosecurity Handbook.](#)
- [The Fisheries Act 1996.](#)
- [Resource Management Act 1991.](#)
- [Sustainable Seas National Science Challenge.](#)

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Food and Fibre Industry Skills Board
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Agriculture, Forestry and Fisheries > Seafood > Aquaculture
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0052

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	26 February 2026	N/A
Kōrero whakakapinga Replacement information	N/A		
Rā arotake Planned review date	31 December 2030		

Please contact the Food and Fibre Industry Skills Board at info@foodandfibreisb.nz to suggest changes to the content of this skill standard.