

41131 Explore seaweed species, their benefits and their ecological roles

Kaupae Level	3
Whiwhinga Credit	5
Whāinga Purpose	<p>This skill standard is for people who are currently working in the seaweed industry.</p> <p>The purpose of this skill standard is to equip learners with foundational knowledge of New Zealand's seaweed industry, including its key species, ecological roles, and commercial value.</p> <p>This knowledge supports informed participation in the seaweed sector and highlights the environmental and economic importance of sustainable seaweed practices.</p>

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

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Explore seaweed species, their benefits and their ecological roles.	a. Describe the key ecological roles of seaweed in the marine ecosystem.
	b. Describe distinguishing features of seaweed species currently cultivated in NZ.
	c. Outline the primary uses or products derived from seaweed species in the New Zealand industry.
	d. Explain the commercial value seaweed species in terms of size of market, demand for end product, profitability.

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

Assessment specifications:

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.

For assessment criteria 1b, 1c and 1d, evidence is required for three key seaweed species.

For assessment criterion 1b, distinguishing features include growth habitat, morphology and preferred environmental conditions.

For assessment criterion 1d, evidence is required for three seaweed species identified in assessment criterion 1b.

Definitions:

Cultivated – Grow and manage seaweed intentionally under controlled or semi-controlled conditions for commercial, environmental, or research purposes.

End-use – The final application or purpose for which a specific seaweed species or product is intended, after it has been harvested and processed.

Morphology – The form, structure and physical characteristics of a seaweed species, including its shape, size, colour and the arrangement of its parts (such as blades, stipes and holdfasts).

Wild harvested – The process of collecting seaweed directly from its natural environment, such as coastal rocks, reefs, or open waters, where it grows without human intervention.

Ngā momo whiwhinga | Grades available

Achieved

Ihirangi waitohu | Indicative content

Role of seaweed in a marine ecosystem

- Photosynthesis and oxygen generation.
- Providing shelter and breeding grounds.
- Absorbing excess nutrients.
- Nutrient cycling.
- Coastal protection: Stabilise sediment and reduce coastal erosion by dampening wave energy.
- Seaweed as a food source for marine species (herbivores and detritivores).
- Creating complex ecosystems that support a wide variety of species.
- Capturing and storing carbon.
- Contribution to water quality.
- Effect of changes in seaweed population e.g. marine diversity and ecosystem balance.

Species cultivated and/or harvested by the New Zealand seaweed industry

- Overview of current commercial and traditional uses of seaweed in Aotearoa New Zealand.
- Key cultivated and/or harvested species including identifying features.
- Harvesting vs cultivation for each species including regulations.
- Impact of global warming on these species.

The uses and commercial value of seaweed species in New Zealand

- Introduction to the major categories of seaweed end-uses.
- Species-specific end-uses and their beneficial ingredients.
- Emerging markets and innovation: new uses
- Sustainability and circular economy opportunities through seaweed bioproducts.

Rauemi | Resources

- [Ministry of Primary Industries – Seaweed farming in New Zealand fact sheet.](#)
- [Aotearoa New Zealand Seaweed Association - Resources.](#)
- [Sustainable Seas Challenge – Seaweed sector framework.](#)
- [Sustainable Seas Challenge – Seaweed characteristics and te tiriti considerations.](#)
- [Sustainable Seas Challenge - Māori marine economy: Its definition, principles, and structure.](#)

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