



REPORT TYPE: FINAL

Scoping Report

Kelp Farming Aquaculture at Bermagui and Pambula Beach,
south coast of New South Wales (NSW)

Applicant - Hormosira P/L trading as Sea Health Products

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25 May 2022



Artwork by Vicki Golding. This piece was commissioned by Alluvium and has told our story of water across Country, from catchment to coast, with people from all cultures learning, understanding, sharing stories, walking to and talking at the meeting places as one nation.

This report has been prepared by EcoFutures Consulting Australia Pty Ltd for Sea Health Products.

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EcoFutures recognises and acknowledges the unique relationship and deep connection to Country shared by Aboriginal and Torres Strait Islander people, as First Peoples and Traditional Owners of Australia. We pay our respects to their Cultures, Country and Elders past and present.

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ACRONYMS

Acronym	Meaning
AL	Aquaculture lease
AIS	Automatic Identification System
ANZECC	<i>Australian and New Zealand Environment and Conservation Council</i>
ARMCANZ	<i>Agriculture and Resource Management Council of Australia and New Zealand</i>
CEMP	Construction Environmental Management Plan
CM Act	<i>Coastal Management Act 2016 (NSW)</i>
DAWE	Department of Agriculture, Water, and the Environment
DPE	NSW Department of Planning and Environment
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
FM Act	<i>Fisheries Management Act 1994</i>
MNES	Matters of National Environmental Significance
MWSAS	Marine Water Sustainable Aquaculture Strategy
NSW	New South Wales
PN	Permit number
POEO Act	<i>Protection of Environment Operations Act 1997 (NSW)</i>
SEPP	State Environmental Planning Policy
SSD	State Significant Development
TEC	Threatened Ecological Community
UXO	Unexploded Ordnance

1 Introduction

1.1 Applicant details

Hormosira Pty Ltd, trading as Sea Health Products, (ABN 474 8210 3995 and registered address: 265 Corkhill Drive, Tilba Tilba New South Wales (NSW) 2546) is the applicant for this kelp farm project. Sea Health Products website is available here: <https://www.seahealthproducts.com.au>

Sea Health Products is Australia's first commercial seaweed business, established in 1969 in Narooma, NSW. Currently based in Tilba Tilba on the south coast of NSW, the business hand-harvests storm-cast kelp from local beaches (under licence from NSW Department of Primary Industries (DPI), Permit Number PN20/291) and produces a range of food seasonings, skin care products and wholesale kelp supply. Sea Health Products employs 2 staff and will look to expand to 5 full-time-equivalent staff in future.

1.2 Project summary

1.2.1 Objectives of the project

Sea Health Products aims to develop an innovative, sustainable commercial kelp farming industry for the south coast NSW. The demand for seaweed products is rapidly growing throughout Australia and the world, and Sea Health Products is currently unable to meet supply requirements through hand-harvesting storm-cast kelp.

Sea Health Products successfully tendered to the NSW Department of Primary Industries (DPI) for two aquaculture leases (AL) on the south coast of NSW (AL21/029 off Haywards Beach and AL21/031 in Merimbula Bay) and is now proposing to establish the first kelp farm in Australia. To progress the lease and permit applications, DPI requires the following:

- Landowners consent from Crown Lands to lodge the State Significant Development (SSD) application for the proposed kelp farm project, noting that Crown Lands will require details of the proposed SSD. (The applicant has already commenced the process of seeking landowner's consent.)
- SSD consent from the NSW Department of Planning and Environment (DPE) for assessment under Part 4 of the *Environmental Planning and Assessment Act 1979*.

This scoping report is submitted in support of a request for the Planning Secretary's Environmental Assessment Requirements (SEARs). This submission has been prepared to meet the requirements of the *State Significant Development Guidelines – preparing a scoping report (Appendix A to the state significant development guidelines November 2021)* (Department of Planning, Industry and Environment (DPIE) 2021).

This project seeks consent and approvals for the following activities:

- Construction and operation of a 30-hectare commercial marine aquaculture lease for seaweed production using longlines off Haywards Beach, approximately 3 km north of Bermagui (refer to Figure 1) (referred herein as the Bermagui lease area), including:
 - Construction of longlines within marine aquaculture lease areas.
 - Monitoring and maintaining longlines.
- Construction and operation of a 30-hectare commercial marine aquaculture lease for seaweed production using longlines off Merimbula Bay, approximately 1.5 km east of Pambula Beach (refer to Figure 2) (referred herein as the Pambula Beach lease area), including:
 - Construction of longlines within marine aquaculture lease areas.
 - Monitoring and maintaining longlines.

- Transportation of materials and staff associated with the project to construct, monitor, and maintain longlines within marine aquaculture lease areas:
 - This part of the project will utilise existing roads and commercial marina facilities at Eden Wharf (253 Imlay St, Eden NSW 2551) and Bermagui Wharf (73-79 Lamont St, Bermagui NSW 2546) to transfer equipment and staff required to construct, monitor and maintain the longlines in the lease areas.
 - No upgrades to existing marina facilities or roads are required to support the project.
 - Harvested kelp will also be received at these existing commercial marina facilities and transferred into trucks.

These project activities are classed as SSD under Schedule 1 clause 2(2) of the *State Environmental Planning Policy (Planning Systems) 2021* due to being 'development for the purpose of aquaculture located in an environmentally sensitive area of State significance', which includes 'coastal waters of the State'.

DPI cannot progress the application for a Class A aquaculture permit until the SSD assessment process is complete.

Ancillary activities for the project that have been considered as part of this proposal but are not SSD include:

- Cultivation of seed stock for use within the marine aquaculture lease areas:
 - Use of an approved hatchery to supply the seed stock (sporophytes) for the longlines to be utilised within the marine aquaculture lease areas.
- Processing of harvested kelp:
 - Harvested kelp will be transported to the existing land-based processing facility at Tilba Tilba where it will be sorted on a stainless-steel table, washed with fresh water, dried using sunlight on racks and then milled following drying. There are existing storage facilities for the processed product and road access to the site.
 - No upgrades to existing marina facilities or roads are required to support this part of the project.

Once consent and the relevant approvals for the marine aquaculture lease areas are obtained, a 1-hectare trial will be established in both lease areas for the first year. If the 1-hectare trial is successful, the operations would scale to 5 hectares in the following year (year 2) at each site, and then 10 hectares (year 3), 20 hectares (year 4), and full production of 30 hectares after 5 years.

The ultimate seaweed product from the marine aquaculture lease areas will be dried granulated or powdered kelp for food and cosmetics. Sea Health Products are currently working with the CSIRO to develop new product lines including freeze dried and fresh frozen kelp and require additional biomass to facilitate this.

The project will be decommissioned after 30 years, consistent with the lease agreements. Decommissioning will involve removal of longlines, moorings and anchors and restoration of the seabed to pre-existing conditions.

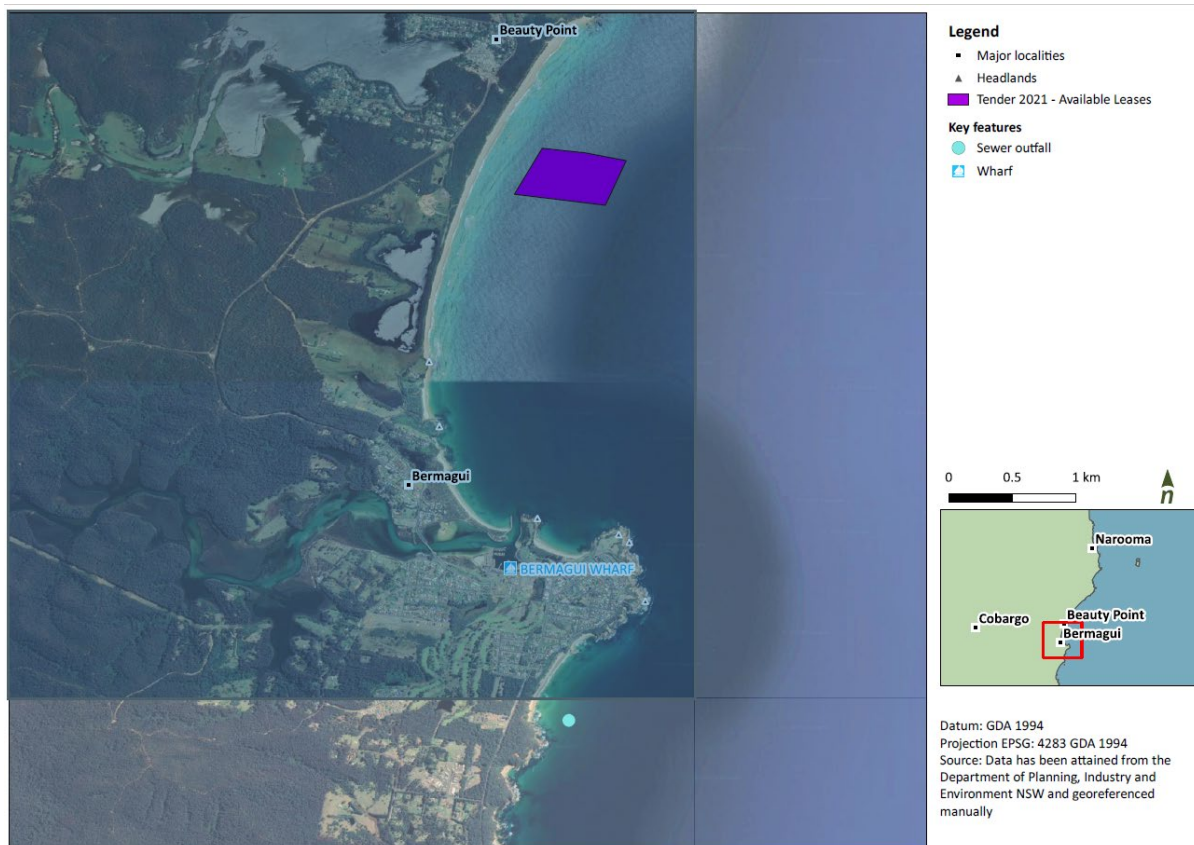


Figure 1. Bermagui commercial marine aquaculture lease area (purple polygon).

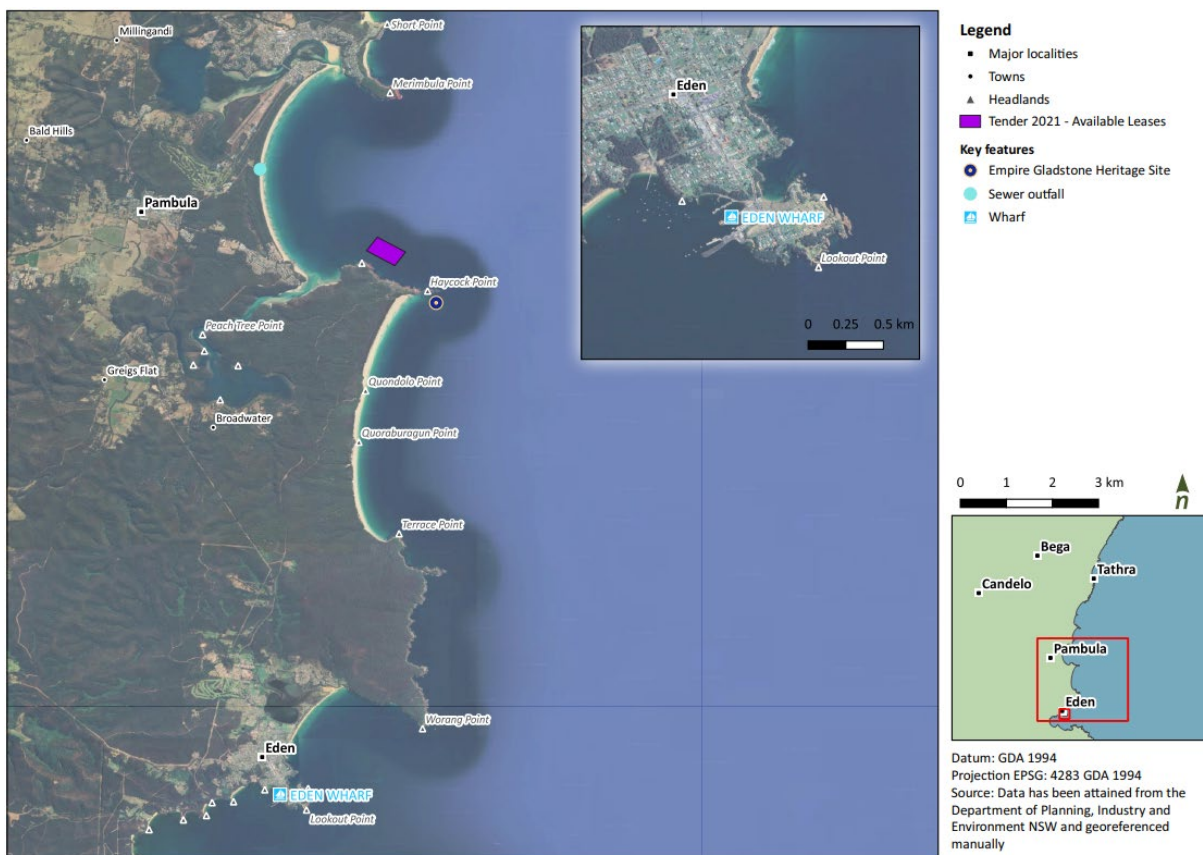


Figure 2. Pambula Beach commercial marine aquaculture lease area (purple polygon).

1.2.2 Brief overview of the project

A detailed description of the project (including the construction, operational and decommissioning phases of the project) are provided in Section 4 and summarised in Figure 3 below.

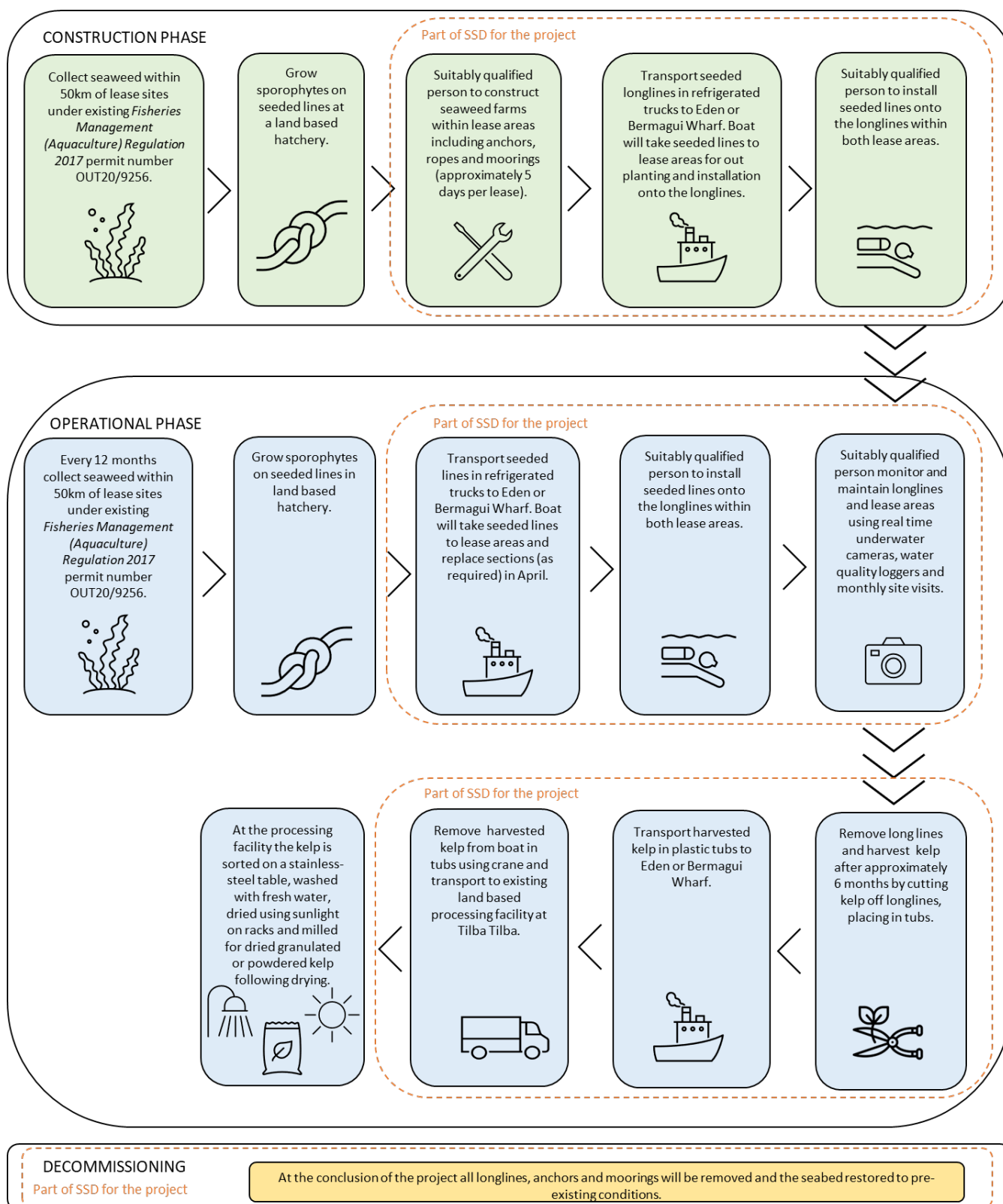


Figure 3. Key steps in the construction, operation, and decommissioning stages of the project.

1.2.3 Proposed commercial marine aquaculture lease areas for seaweed production

A map and the coordinates of the proposed commercial marine aquaculture seaweed lease areas are detailed below for:

- Bermagui lease area in Figure 4 and Table 1.
- Pambula Beach in lease area Figure 5 and Table 2.



Figure 4. Bermagui lease area boundary coordinates.

Table 1. Bermagui lease area boundary coordinates.

Description	Coordinates			
	x	y	DMS (x)	DMS (y)
Bermagui_1_SW	150.073	-36.393	150°04'22.800"E	29°55'37.200"S
Bermagui_2_NW	150.075	-36.389	150°04'30.000"E	29°55'30.000"S
Bermagui_3_NE	150.083	-36.390	150°04'58.800"E	29°55'01.200"S
Bermagui_4_SE	150.081	-36.394	150°04'51.600"E	29°55'08.400"S
Centre point of Bermagui lease	150.078	-36.392	150°04'40.800"E	36°23'31.200"S



Figure 5. Pambula Beach lease area boundary coordinates.

Table 2. Pambula Beach lease area boundary coordinates.

Description	Coordinates			
	x	y	DMS (x)	DMS (y)
Pambula_1_SW	149.929	-36.940	149°55'44.400"E	30°04'15.600"S
Pambula_2_NW	149.932	-36.936	149°55'55.200"E	30°04'04.800"S
Pambula_3_SE	149.939	-36.940	149°56'20.400"E	30°03'39.600"S
Pambula_4_S	149.936	-36.943	149°56'09.600"E	30°03'50.400"S
Centre point of Pambula lease	149.934	-36.940	149°56'02.400"E	36°56'24.000"S

1.2.4 Land-based hatchery facilities to support the project

The applicant is currently seeking approval to use an existing laboratory (measuring approximately 3m by 3m) as a commercial hatchery for the germination of the sporophytes collected by Sea Health Products for the seeded lines. The existing laboratory is within a building at the land-based processing facility at 265 Corkhill Drive, Tilba Tilba and is currently utilised for seaweed research.

Conversion of the existing laboratory to a commercial hatchery is a related but separate land-based development. It is not considered an SSD and would be subject to a Development Application. An NSW Class H aquaculture permit, or exemption is required for NSW hatcheries under Section 144(4) of the *Fisheries Management Act 1994*.

1.2.5 Existing land-based marina facilities

The project will utilise the existing commercial marina facilities at Eden Wharf (253 Imlay St, Eden NSW 2551) and Bermagui Wharf (73-79 Lamont St, Bermagui NSW 2546). These are commercial fishing wharves with trawlers, tour operators and fishing charter boats moored. Both Eden and Bermagui have vehicle access to unload kelp harvests.

1.2.6 Existing land-based processing facility at Tilba Tilba

The project will utilise existing road facilities and 1.62 hectare Sea Health Products seaweed processing facility located at 265 Corkhill Drive, Tilba Tilba.

Photos of the custom-built drying racks at the Tilba Tilba processing facility are provided in Figure 6 below. Once the kelp is dried it is processed through a mill into a powder or granules for use in organic products.

The processing site currently has a capacity for approximately 1 tonne of wet seaweed but has the area to at least double this capacity. However, the limiting factor for the project is staff and processing time. It is a labour-intensive process where the kelp is sliced and washed in freshwater before being placed on the racks to dry. Sea Health Products will harvest 1 tonne, process it (dry it and place into storage), before going out to harvest another tonne. Harvesting operations will employ 5 local staff.



Figure 6. Drying racks at Tilba Tilba land-based facility below Mount Gulaga

1.2.7 Project scheduling

The anticipated delivery schedule for the project is outlined below.

STAGE	TASKS	TIMEFRAMES	APPROXIMATE DATES
Obtain approvals	• SEARS • Detailed surveys • Detailed engineering design • Stakeholder / public consultation • EIS • EMP • Other approvals	12 months	May 2022 – May 2023
Construction	• Engage suitably qualified contractor to complete construction in lease areas • Germinate seeded long lines	1 month (approximately 1 week per lease area)	May 2023 – June 2023
Phase 1 – 1 hectare trial in year 1 (both leases)	• Install seeded long lines • Monitor • Harvest after 6 months	6 months	May 2023 – December 2023

STAGE	TASKS	TIMEFRAMES	APPROXIMATE DATES
Phase 2 – 5 hectares in year 2 (both leases)	• Install seeded long lines • Monitor • Harvest after 6 months	6 months	May 2024 – December 2024
Phase 3 – 10 hectares in year 3 (both leases)	• Install seeded long lines • Monitor • Harvest after 6 months	6 months	May 2025 – December 2025
Phase 4 – 20 hectares in year 4 (both leases)	• Install seeded long lines • Monitor • Harvest after 6 months	6 months	May 2026 – December 2026
Phase 5 – 30 hectares in year 5 (both leases) – fully operational	• Install seeded long lines • Monitor • Harvest after 6 months	6 months	May 2027 – December 2027
Decommissioning	• Remove long lines, moorings, and anchors, and restore seabed		2053

1.3 Project background

1.3.1 History of Sea Health Products

A full history of Sea Health Products is available here: <https://www.seahealthproducts.com.au/sea-health-history>

Sea Health Products was founded in the late 1960's by Betty Long who visited her father's property in Narooma on the south coast and noticed Golden Kelp rolling in. The Women's Weekly ran a story on her and her harvesting and she soon had letters from all over Australia wanting her Golden Kelp meal. Her son Scott continued the business until 2015.

Jo Lane, the current owner and director of Hormosira P/L trading as Sea Health Products (Figure 7), is a former employee of the NSW Fisheries and has a marine science degree and postgraduate qualification in environmental studies. After purchasing Sea Health Products in 2019, Jo realised that there were so many applications for kelp that she would need to farm it.

Jo Lane won the Churchill Fellowship in 2019 to investigate appropriate technologies for introducing financially viable kelp farming aquaculture to Australia. During the 12-week research trip in 2019 to Korea, Ireland, Scotland, Norway, Faroe Islands, USA, and Canada. Jo attended the International Seaweed Symposium in Jeju, South Korea and formed strong international relationships and learnt of the benefits and challenges of kelp farming.

Since 2019, Sea Health Products has worked alongside researchers from the University of Technology Sydney, the University of Tasmania, the Sydney Institute of Marine Science, the Marine Bioproducts Cooperative Research Centre, and the Safe Seaweed Coalition to optimise kelp breeding and propagation techniques and accelerate the growth of the seaweed industry in Australia. The main barrier to commercial kelp farming is the technical challenges involved in



Figure 7. Jo Lane owner of Sea Health Products

breeding seaweed, however, Sea Health Products has successfully developed a method to do this through these research partnerships.

Sea Health Products successfully tendered for the two lease sites (AL21/029 and AL21/031) on the south coast of NSW at Bermagui and Pambula in December 2021. Sea Health Products has engaged with the NSW Department of Primary Industries (DPI) and NSW DPIE (now the NSW Department of Planning and Environment (DPE)) regarding the requirements for the project over the past seven years.

Sea Health Products has established an extensive local network, community support and economic interests in the project from existing kelp industries such as the Indigenous owned South Coast Seaweed. Sea Health Products is well known within the local Bega Valley Shire Council community through regular engagement through markets where the seaweed products are currently sold, radio interviews, talks at the Ocean Lovers Festival, Narooma Oyster Festival and Seaweed Forest Festival. Sea Health Products has been involved in council initiatives, including the Bega Valley Accelerate Program in 2019, where the company received the people's choice and judges awards for the pitch to introduce kelp farming aquaculture to the south coast of NSW. The project has also received in-principle support from Andrew Taylor from Local Land Services NSW and Daniel Murphy (Business Development Manager - South East) from the Department of Regional NSW.

1.3.2 History of seaweed farming

Seaweed aquaculture, sometimes referred to as 'restorative ocean farming', involves the cultivation of a 'zero input', naturally endemic 'crop' that requires no freshwater, land, fertilisers or pesticides to grow. Kelp grows rapidly (up to five times faster than land plants), delivers significant co-benefits to the surrounding marine environment by absorbing dissolved carbon dioxide, and excess nitrogen and phosphorus, and produces a valuable and versatile biomass with applications in diverse industries. Kelp, often referred to as a 'superfood', is rich in iodine and calcium, antioxidants, vitamins, minerals, amino acids, lipids, polysaccharides and bioactive compounds, and its use in the functional food sector is expanding.

Seaweed aquaculture and associated businesses are practised and expanding in almost 50 countries (Figure 8). The global seaweed industry, including all species, is the fastest-growing component of aquaculture and overall food production globally (Cottier et al. 2016) and is valued at \$US11 billion, with forecast growth to \$US55.8 billion by 2040 (Agrifutures 2018). Australia's seaweed industry, on the other hand, captures less than 1% of the global market (\$US 3 million in year), with imports of seaweed products reaching \$40 million in 2016/17, and growing on average by 15% per year (Agrifutures 2018).

Over the past 70 years, marine and land-based seaweed aquaculture technologies have developed dramatically, mostly in Asia where the industry is well-established, but more recently in Europe and America.

Kelp farms can range in size from 2 hectares to 800 hectares and are deployed in protected bays and far offshore waters. As global attention focuses on decarbonisation and sustainable economic recovery post COVID-19, seaweed is increasingly becoming utilised as a sustainable material in growing markets for agricultural feed, fertiliser, biofuels, alternative fibres and polymers, industrial chemicals, bioplastics and bioactive compounds for the nutraceutical and pharmaceutical industries.

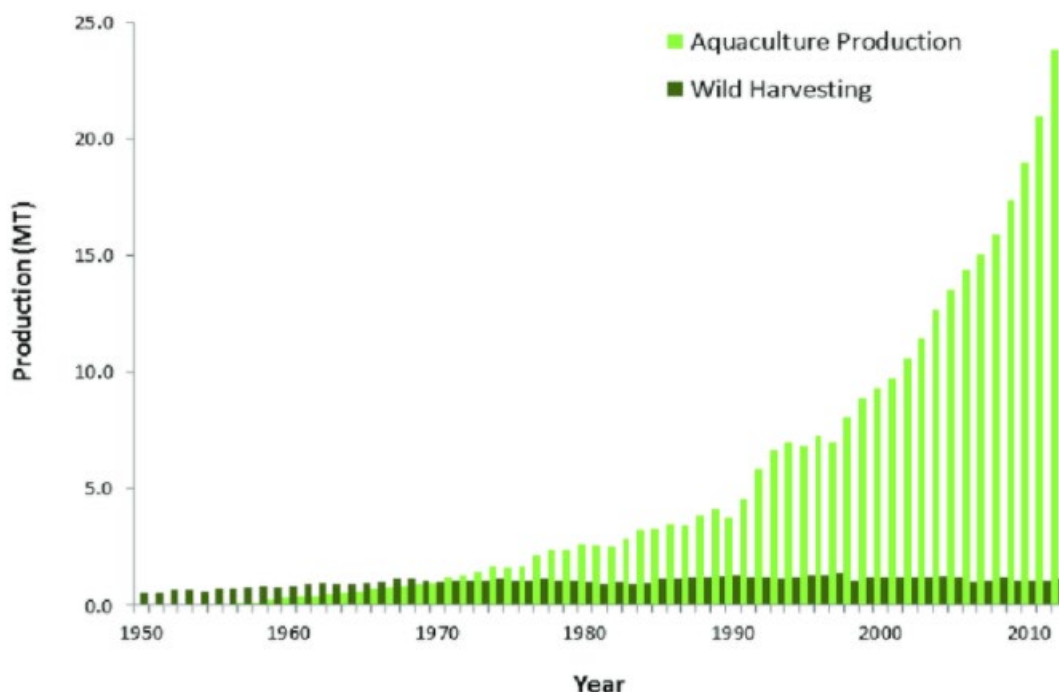


Figure 8. Global seaweed aquaculture production (1950-2014) (Image source: Cottier et al. 2016)

1.4 Key strategies to be adopted to avoid, minimise, or offset the impacts of the project to the extent known at the scoping stage

1.4.1 Building on existing knowledge of seaweed farming

Seaweed farming using the longline method has been utilised for approximately 80 years in Asia, especially Japan, China, and Korea. In the last 20 years, commercial seaweed farming has commenced in Europe and America.

Sea Health Products has an established understanding of the requirements and potential impacts associated with commercial seaweed farming through visiting numerous seaweed and kelp farms overseas and/or have met their founders – including [Cascadia Seaweed](#), [Greenwave](#), [Atlantic Sea Farms](#), [Springtide Seaweed](#), [Blue Evolution](#), [Seaweed Solutions](#), [The Seaweed Company](#), and [Ocean Rainforest](#). An understanding of the potential risks and key learnings from these overseas examples have been considered within this submission and will be incorporated within the Environmental Impact Statement (EIS) to ensure best practice methods will be employed for the project.

In addition, the project has also considered the project documents in relation to the Jervis Bay Aquaculture Facility (Application Number SSI-5657) determined in 2014, which is an SSD that encompasses similar risks to this project.

1.4.2 Site selection

In addition to legislative requirements, the proposed sites have been selected because they would provide for ideal seaweed growth and site access (e.g., locations that are not close to residential areas), based on the Kelp Farming Manual (Flavin et al. 2013):

- Adequate current.
- Sufficient nutrients.

- Limited use for existing fisheries.
- Good holding ground for moorings i.e. sandy substrate.
- Sufficient depth to ensure the kelp does not touch the bottom and reduce the amount of biofouling.
- Not in areas of protected habitat.
- Avoid conflict with existing uses.

1.4.3 Farm system design

The design of the farm system within the lease areas will consider the guidance provided in the Kelp Farming Manual (Flavin et al. 2013) and the Greenwave.org Ocean Farming Hub, as well as engagement with Ocean Rainforest, which has an open ocean operation.

1.4.4 Site operations

Operations for the project will be largely guided and based on the existing USA Ocean Approved kelp farming manual available here:

<https://usermanual.wiki/Document/OceanApprovedKelpManualLowRez25255b125255d.1722116382/view>

The project will also utilise information from the Greenwave.org Ocean Farming Hub to source learnings from other seaweed farmers overseas. Further information is available here: <https://www.greenwave.org/hub>

1.4.5 Monitoring

Monitoring will make use of latest technologies, including underwater cameras and in-situ monitoring equipment to ensure any potential issues (i.e., fauna entanglement, pest invasion, or damage to longlines) can be quickly rectified through a site visit. The project will make use of applications such as the 'Ocean Farmer' app developed on the NSW south coast

1.5 Any related development

The following existing facilities and sites will support the project:

- The project will utilise the existing 1.62 hectare Sea Health Products seaweed processing facility located at 265 Corkhill Drive, Tilba Tilba for the washing, drying and milling of the harvested seaweed.
- The applicant is currently seeking approvals to use an existing laboratory as hatchery at the processing facility at 265 Corkhill Drive, Tilba Tilba to supply the seeded lines for the seaweed lease areas. The proposed use of the existing laboratory as a future Tilba Tilba hatchery facility would be subject to merit environmental impact assessment under a Development Application.
- Existing roads and commercial marina facilities are in place and will not require upgrades to support the project.

2 Strategic context

2.1 Project justification

In 2021, the United Nations announced the Decade of the Ocean with the mission of ‘Transformative Ocean science solutions for sustainable development, connecting people and our ocean’ Kelp farming aquaculture addresses a number of Sustainable Development Goals, particularly SDG 14 Life Below Water.

Australia is currently a net-importer of seaweed products (almost \$40 million worth in 2017/18), with our domestic industry only capturing AU\$3 million (less than 0.02%) of the \$17 billion global market. The 2020 Australian Seaweed Industry Blueprint commissioned by AgriFutures Australia forecasts that with the right investment, the Australian seaweed industry can grow to be worth up to AU\$275 million, creating 1200 direct jobs by 2025 (Kelly 2017). Specifically, within the south coast of NSW there is the potential for a seaweed industry to generate up to \$50M annually in gross value of production, with 500 jobs, improvements in water quality and habitat (Kelly 2017). Continuing to rely on overseas imports not only leaves Australian businesses vulnerable to supply-chain disruptions, but hinders the growth of a competitive, million-dollar domestic industry.

There is a large opportunity to meet the gap in domestic biomass supply and international demand with aquaculture, and significant steps toward the industry’s establishment are underway in other Australian states. In 2021, ocean-farmed commercial-grade kelp was harvested in Tasmania for the first time, and over 800 hectares of seaweed marine aquaculture leases were granted in South Australia (Norwood 2021). However, despite NSW’s vast coastline, nutrient rich marine waters and well-established aquaculture industries, there are currently no commercial kelp farms in the State.

The National Aquaculture Strategy (2017 to 2027) (Department of Agriculture and Water 2017) sets a national aquaculture target to double the current value of Australia’s aquaculture industry to \$2 billion per year by 2027. The strategy is consistent with the National Marine Science Plan 2015–2025: driving the development of Australia’s blue economy (National Marine Science Committee 2015), which includes goals to focus research to improve access and allocation of aquaculture resources, streamline governance and regulatory systems and maintain the health of habitats.

The south coast of NSW has a long history of sustainable, productive aquaculture operations including oyster, mussel and scallops, that deliver high-quality products to domestic and international markets, as well as substantial socioeconomic benefits to regional coastal communities. However, despite growing domestic and international demand for seaweed biomass, the existence of well-developed seaweed farming industries in Asia and the Northern Hemisphere, and the introduction of seaweed aquaculture in other Australian states, marine seaweed aquaculture leases in NSW are yet to be developed. The NSW Marine Waters Sustainable Aquaculture Strategy (MWSAS) (NSW Department of Industry 2018) identified that current marine aquaculture operations include:

- Eden Seafarms (37.5 ha) and South Coast Mariculture (12 ha) - Twofold Bay
- South Coast Mariculture (50 ha) - Jervis Bay
- NSW DPI MARL (60 ha) - Port Stephens
- Huon Aquaculture (62 ha) - Port Stephens.

There are no artificial reefs or ranching leases in NSW currently.

The Bega Valley Shire Council has recently developed a Climate Resilience Strategy (2050) that aims to ensure that our community, environment, and economy are robust and able to respond to the key challenges that climate change presents. Within the key response areas of ‘Diverse and Thriving Economy’ there is a target to increase aquaculture production in the region.

There is strong community and government support for the project proposed by Sea Health Products. Sea Health Products has received funding and support for the project through the following grants:

- A Safe Seaweed Coalition (international) grant to optimise and scale breeding;
- Boosting Female Founders (federal) grant to assist with the complex and expensive permitting process; and
- Grant from Investment NSW (state) to assist with the project, specifically to commercialise our seeded kelp lines.

The proposed project strongly aligns with the vision of the MWSAS (NSW Department of Industry 2018), which states: *The vision for the marine aquaculture industry in NSW is for a thriving, economically and environmentally sustainable industry that meets future demands for high quality seafood supply for the state and creates economic opportunities in regional NSW.* The MWSAS is discussed in further detail below.

There is a demand for seaweed which is currently unable to be met through hand-harvesting of storm-cast kelp. The project also aligns with the NSW DPI Strategic Plan 2019-2023 objectives to increase the value of NSW primary industries by 29% by 2023. If the current development was not supported this would be a key loss to the primary industry sector and employment opportunities within the south coast of NSW. Section 4.5 has further information about alternatives that were considered to this proposal.

2.2 NSW Marine Waters Sustainable Aquaculture Strategy 2018

The MWSAS was developed by NSW Department of Industry in 2018 to guide the development of aquaculture in NSW. It has been adopted as an Aquaculture Industry Development Plan under the *Fisheries Management Act 1994* and is supported by provisions in State Environmental Planning Policies (see Section 3). The strategy provides a regulatory and industry best practice framework for the expansion of the NSW marine aquaculture industry in an ecologically sustainable and socially responsible manner.

The MWSAS identifies 23 potential site, operational and community risks associated with marine aquaculture. These were identified through consultation with various stakeholder groups, including environmental, tourism, animal welfare, recreational and commercial fishing and the wider community (NSW Department of Industry 2018). Key risks associated with the proposed project are discussed further in section 2.4 below. The EIS will address the expected outcome and assessment requirements detailed in the MWSAS in relation to each of these impacts.

The two lease sites are zoned as 'available for aquaculture' under the MWSAS. This project has been assessed against 12 constraints laid out by the MWSAS, and the lease sites are deemed permissible for marine aquaculture with SSD consent, as displayed in Table 3 for the Bermagui lease area and in Table 4 for the Pambula Beach lease area.

Table 3: Constraints for NSW marine aquaculture operations defined in the MWSAS and response in the context of this project for the Bermagui lease area

Criteria	Constraint	Response
1. Conservation exclusion zone	Must not be within land reserved or acquired under the <i>National Parks and Wildlife Act 1974</i> , nature reserves, Aboriginal or European historic sites	The proposed aquaculture lease site is not within a conservation exclusion zone.
2. Marine conservation areas	Must not be within marine park Sanctuary Zones (or equivalent) or aquatic reserves	The proposed aquaculture lease site is not within a marine conservation area. The nearest marine park boundary is Batemans Marine Park at Wallaga Lake approx. 2.2km north of Bermagui.

Criteria	Constraint	Response
3. Pipelines and cables	Must not be within 1km of sewage outfall pipelines or protection zones for submarine communication cables	The proposed aquaculture lease site is not within 1km of sewage outfalls.
4. Navigation channels and shipping port approaches	Must not be within 1km of navigation channels and established shipping and port approaches	The proposed aquaculture lease site is not within 1km of navigation channels and shipping port approaches.
5. Department of Defence operational areas	Must not be within Department of Defence operational areas (for example, Naval Trace area at Jervis Bay)	The proposed aquaculture lease site is not within Department of Defence operational areas.
6. Substrate type	Must not be located over rocky reefs (as defined by NSW DPI)	The proposed aquaculture lease site is not located over rocky reef as per constraint map provided by NSW DPI. The site will be located above subtidal sand.
7. Seagrass beds	Must not be located over seagrass beds (as defined by NSW DPI)	Preliminary surveys indicate that the proposed aquaculture lease site is not located over seagrass beds. This will be confirmed with further ecological survey as part of the EIS.
8. Marine heritage items	Must not be within 1 km of maritime heritage items (e.g. historic planes and shipwrecks)	The proposed aquaculture lease site not within 1km of maritime heritage items.
9. Artificial reefs	Must not be within 1km of purposefully constructed artificial reefs	The proposed aquaculture lease site not within 1km of purposefully constructed artificial reef as per constraint map provided by NSW DPI.
10. Marine infrastructure and monitoring equipment	Must not be within 1 km of marine infrastructure (e.g. moorings, boat ramps and marinas), and monitoring equipment e.g. wave rider buoys	This proposed aquaculture lease site is not within 1km of marine infrastructure.
11. Species	Culture species must be spawned from the endemic population or from brood stock collection originating from the east coast of Australia. Culture species must not be genetically modified through the addition of any foreign genetic material (DNA) into an organism	Culture species will be spawned from the endemic population or from brood stock collection originating from the east coast of Australia within 50km of the lease sites. Sea Health Products have a purpose-built laboratory and have successfully bred sporophytes ready for out planting.
12. Distance between aquaculture leases	Must address biosecurity separation distances between farm operations.	Project complies with this requirement. The proposed aquaculture lease site will be situated at least 2km from other farm

Criteria	Constraint	Response
		operations, so as not to cause any biosecurity issues.

Table 4: Constraints for NSW marine aquaculture operations defined in the MWSAS and response in the context of this project for the Pambula Beach lease area

Criteria	Constraint	Response
1. Conservation exclusion zone	Must not be within land reserved or acquired under the <i>National Parks and Wildlife Act 1974</i> , nature reserves, Aboriginal or European historic sites	The proposed aquaculture lease site is not within a conservation exclusion zone.
2. Marine conservation areas	Must not be within marine park Sanctuary Zones (or equivalent) or aquatic reserves	The proposed aquaculture lease site is not within a marine conservation area. The nearest marine park boundary is Batemans Marine Park at Wallaga Lake approx. 3 km north of Bermagui.
3. Pipelines and cables	Must not be within 1km of sewage outfall pipelines or protection zones for submarine communication cables	The proposed aquaculture lease site is not within 1km of sewage outfalls.
4. Navigation channels and shipping port approaches	Must not be within 1km of navigation channels and established shipping and port approaches	The proposed aquaculture lease site is not within 1km of navigation channels and shipping port approaches.
5. Department of Defence operational areas	Must not be within Department of Defence operational areas (for example, Naval Trace area at Jervis Bay)	The proposed aquaculture lease site is not within Department of Defence operational areas.
6. Substrate type	Must not be located over rocky reefs (as defined by NSW DPI)	The proposed aquaculture lease site is not located over rocky reef as per constraint map provided by NSW DPI. The site will be located above subtidal sand.
7. Seagrass beds	Must not be located over seagrass beds (as defined by NSW DPI)	Preliminary surveys indicate that the proposed aquaculture lease site is not located over seagrass beds. This will be confirmed with further ecological survey as part of the EIS.
8. Marine heritage items	Must not be within 1 km of maritime heritage items (e.g. historic planes and shipwrecks)	The proposed aquaculture lease site not within 1km of maritime heritage items.
9. Artificial reefs	Must not be within 1km of purposefully constructed artificial reefs	The proposed aquaculture lease site not within 1km of purposefully constructed

Criteria	Constraint	Response
		artificial reef as per constraint map provided by NSW DPI.
10. Marine infrastructure and monitoring equipment	Must not be within 1 km of marine infrastructure (e.g. moorings, boat ramps and marinas), and monitoring equipment e.g. wave rider buoys	This proposed aquaculture lease site is not within 1km of marine infrastructure.
11. Species	Culture species must be spawned from the endemic population or from brood stock collection originating from the east coast of Australia. Culture species must not be genetically modified through the addition of any foreign genetic material (DNA) into an organism	Culture species will be spawned from the endemic population or from brood stock collection originating from the east coast of Australia within 50km of the lease sites. Sea Health Products have a purpose-built laboratory and have successfully bred sporophytes ready for out planting.
12. Distance between aquaculture leases	Must address biosecurity separation distances between farm operations.	Project complies with this requirement. The proposed aquaculture lease site will be situated at least 2km from other farm operations, so as not to cause any biosecurity issues.

2.3 Local planning and land use strategies

Relevant policies and strategies from the Bega Valley Shire Council relevant to the project to be considered by the EIS are summarised below.

2.3.1 Bega Valley Shire Council Local Environment Plan (2013)

Bega Valley Shire Council has a Local Environment Plan (2013) which sets out permitted and prohibited uses in the zones. The aquaculture lease areas are not zoned within the Local Environment Plan (2013). Zoning relevant to the two wharf facilities to be used for the retrieval of kelp from the boat are as follows:

- Bermagui Wharf located at 73-79 Lamont St, Bermagui NSW 2546 is currently zoned as SP3: Tourist. Marinas, jetties, and boat building and repair facilities are all permitted with consent under this zone.
- Eden Wharf located at 253 Imlay St, Eden NSW 2551 is currently zoned as IN4: Working waterfront, B4: Mixed use, UL: Unzone land and RE1: Public Recreation. Zone IN4: Working waterfront permits the following activities with consent: aquaculture, boat building and repair facilities, jetties, and wharf or boating facilities.

The existing zones and permitted uses under the Local Environment Plan (2013) will be considered further in the project EIS.

2.3.2 Bega Valley Shire Community Strategic Plan 2040

The Bega Valley Shire Community Plan 2040 defines long term priorities and aspirations for the future of the community. It is for use by individuals, organisations, Council and other levels of government to help build a stronger and better Bega Valley Shire. The Plan was developed following extensive engagement involving around 2,000 members of Bega Valley Shire community through the Understanding Our Place project.

The plan identified that there are opportunities and challenges for the region including the expansion of existing agriculture and aquaculture industries and opportunities for new emerging industries, including small producers.

The six outcomes for the Bega Valley Shire Community Plan 2040 will be considered as part of the Kelp Farm EIS, including:

1. Active and healthy communities
2. Employment and learning opportunities
3. Sustainable living
4. Liveable places
5. Connected communities
6. Strong, consultative leadership

2.3.3 Bega Valley Shire Coastal Processes and Hazards Definition Study (2015)

BMT WBM prepared the Bega Valley Shire Coastal Processes and Hazards Definition Study – Volume 1: Final report in 2015. The report provides a summary of the regional and local coastal processes affecting the Bega Shire coastline and presents the methodology and outcomes of investigations undertaken to assess coastal hazard extents (coastal erosion, recession, and inundation) within the Bega Valley Shire study area. Erosion/recession hazards have been defined for three timeframes (immediate, 2050 and 2100) using a risk-based approach providing for variability and uncertainty.

The outcomes of this report will be considered in the EIS in terms of the assessment of potential impacts of coastal processes on the construction, operation and decommissioning phases of the project.

2.3.4 Bega Valley Shire Council Climate Resilience Strategy (2050)

The Bega Valley Shire Council also has a Climate Resilience Strategy (2050) that aims to ensure that the local community, environment and economy are robust and able to respond to the key challenges that climate change presents. Within the key response areas of ‘Diverse and Thriving Economy’ there is a target to increase aquaculture production.

The Climate Resilience Strategy (2050) will be considered in the EIS for the project, including further stakeholder consultation.

2.3.5 Bega Valley Shire Council Policy 2.02 Live Work Invest Policy 2.02

This policy outlines the Council’s direction to generate opportunities for current and new populations to live, work and invest in the Bega Valley. This policy includes positioning the Council and the local community to benefit from new and emerging industries and support the growth of traditional industry, through:

- Working with a range of industries to raise the income levels of Shire residents.
- Nurture and support innovation and challenge existing businesses to embrace change.
- Supporting business growing locally or considering moving to the area.

The project aligns with this Council policy, and this will be considered as part of consultation for the EIS for the project.

2.4 Key project risks or hazards

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Policy Statement 2.2 for Offshore Aquaculture (Commonwealth of Australia 2006) identifies the major environmental issues associated with aquaculture as being:

- 1) Water quality and seabed impacts from aquaculture operations

- 2) Introduction of pest species through translocation and possible escapes
- 3) Introduction of diseases (i.e. bacterial and viral)
- 4) Genetic impacts from possible escapes
- 5) Compromising habitat and amenity values including habitat alteration and ecosystem change
- 6) Interactions with protected species
- 7) Creating changes in wildlife populations associated with creation of additional seaweed habitats
- 8) Shore-based impacts (e.g. impacts associated with processing and operating loading facilities).

This policy statement also noted that localised benthic smothering (in areas which are not vulnerable and do not contain important habitat such as seagrass beds or corals) were deemed to be very minor and only small in scale (Commonwealth of Australia 2006).

The MWSAS (NSW Department of Industry 2018) identifies 23 potential site, operational and community risks associated with marine aquaculture identified through extensive consultation with various stakeholder groups, including environmental, tourism, animal welfare, recreational and commercial fishing, and the wider community. These have been refined for the project and presented in Figure 9.

The two lease areas (AL21/029 and AL21/031) have been selected to minimise major environmental risks. The lease areas are not heavily trafficked by recreational boaters and have access to safe harbours. Both sites are above subtidal sand and have good current flows and upwelling of nutrients. In addition, they are both in areas that avoid visual amenity impacts with existing surrounding land uses to the greatest extent possible.

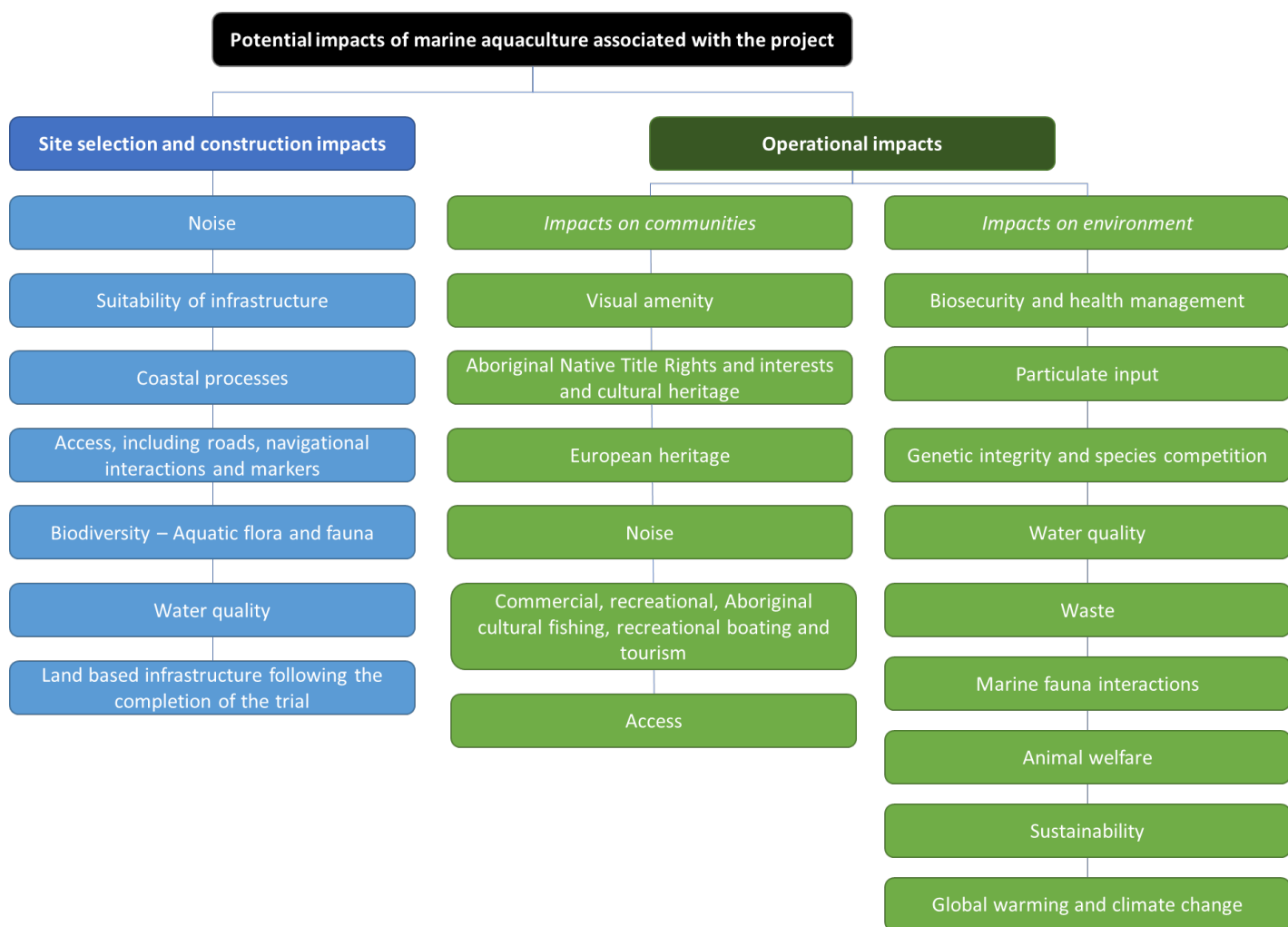


Figure 9. Potential impacts of marine aquaculture, refined and adapted from the MWSAS (NSW Department of Industry 2018).

2.4.1 Bermagui lease area (AL21/029)

This 30-hectare site is located off Haywards Beach, approximately 3 km north of Bermagui (as indicated on the maps below). Key features include:

- The site is located on Crown land.
- The site is located over subtidal sand areas and not over a rocky reef or seagrass bed (refer to Figure 10 and Figure 11). Information provided by the DPI indicate that rocky reefs are unlikely to be present at the lease location. However, the exact location of the lease area would be confirmed as part of the EIS through further surveys to confirm that rocky reef or seagrass beds are not present.
- Site has been selected to minimise impacts to visual amenity and noise to residential areas as the closest land use immediately west of the site is ‘environmental conservation’ (refer to Figure 12). The nearest residential land uses are approximately 0.7km from the lease area.
- According to the NSW Fisheries Spatial Data Portal (DPI 2022) this site is not located within a marine park zone, key fish habitat areas, NSW oyster reefs, NSW estuarine macrophytes, NSW Blue Carbon priority area, or existing aquaculture lease area.

- Marine traffic within 1km of the lease is limited. However, marine traffic near the lease area is moderate with approximately 28 ships with an automatic identification system (AIS) receiver recorded approximately 5km from the site during 2020-2021 on the Marine Traffic Map (API 2022).
- Site located outside Department of Defence operational areas or mapped on the Unexploded Ordinance (UXO) map (Department of Defence 2022).
- Site is not located within 1km of sewage outfall pipelines. The nearest sewage outfall pipeline location is located approximately 5km from the lease area (refer to Figure 14).
- The site will be accessed by boat from Bermagui Wharf approximately 3.6km from the Bermagui lease site (refer to Figure 14).
- Site is not located within 1km protection zones for submarine communication cables according to the submarine cable map and the Submarine Telecommunications Cables NSW Protection Zones: Southern Protection Zone.
- Site is not located within 1km of marine infrastructure according to the boating maps for NSW waterways for Bermagui River, Wallaga and Corunna Lakes, Brogo Dam (map ref 13B) (NSW Government 2022).
- Site is located outside known courses for yacht club competitions.
- Site is located outside known maritime heritage sites on the maritime heritage database (Department of Premier and Cabinet 2022).
- Site is located outside known heritage sites (Aboriginal place, State heritage register, Interim Heritage Order, and local environmental plan) as mapped by the State Heritage Inventory Map (Department of Planning and Environment 2022).

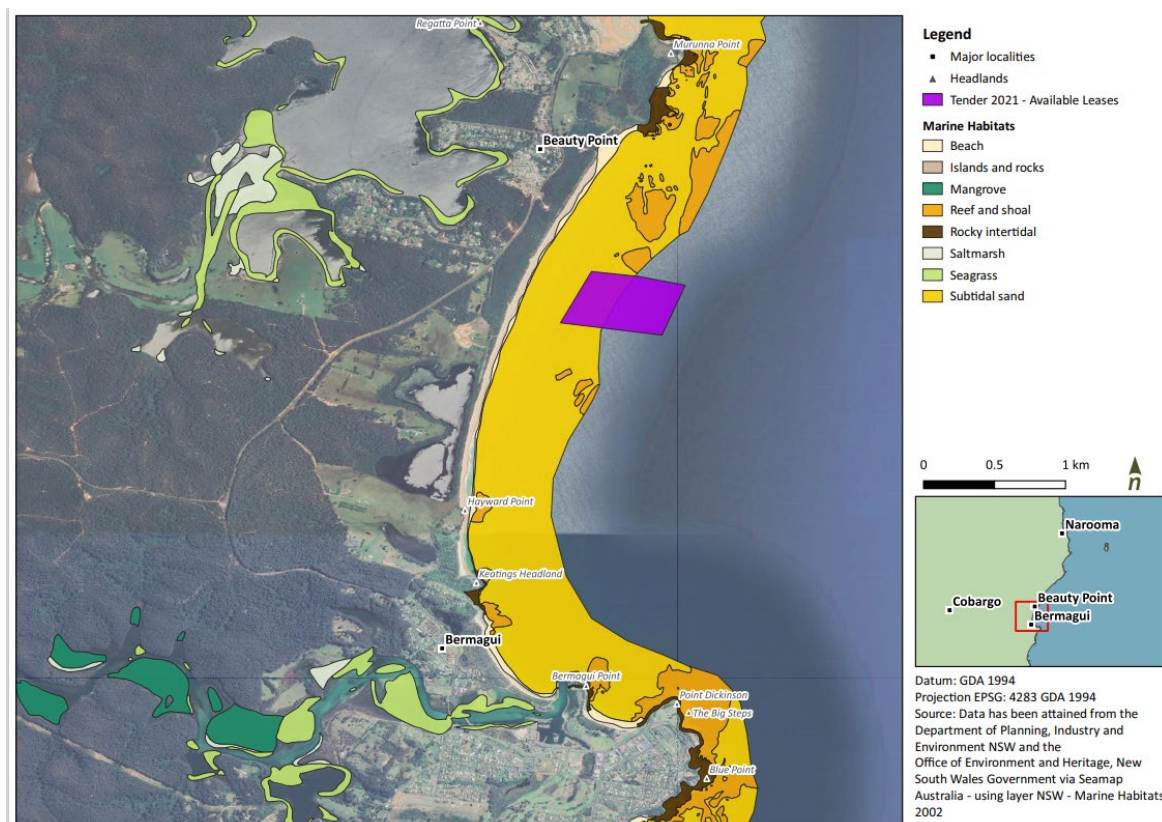


Figure 10. Coastal habitat mapping for the Bermagui lease area

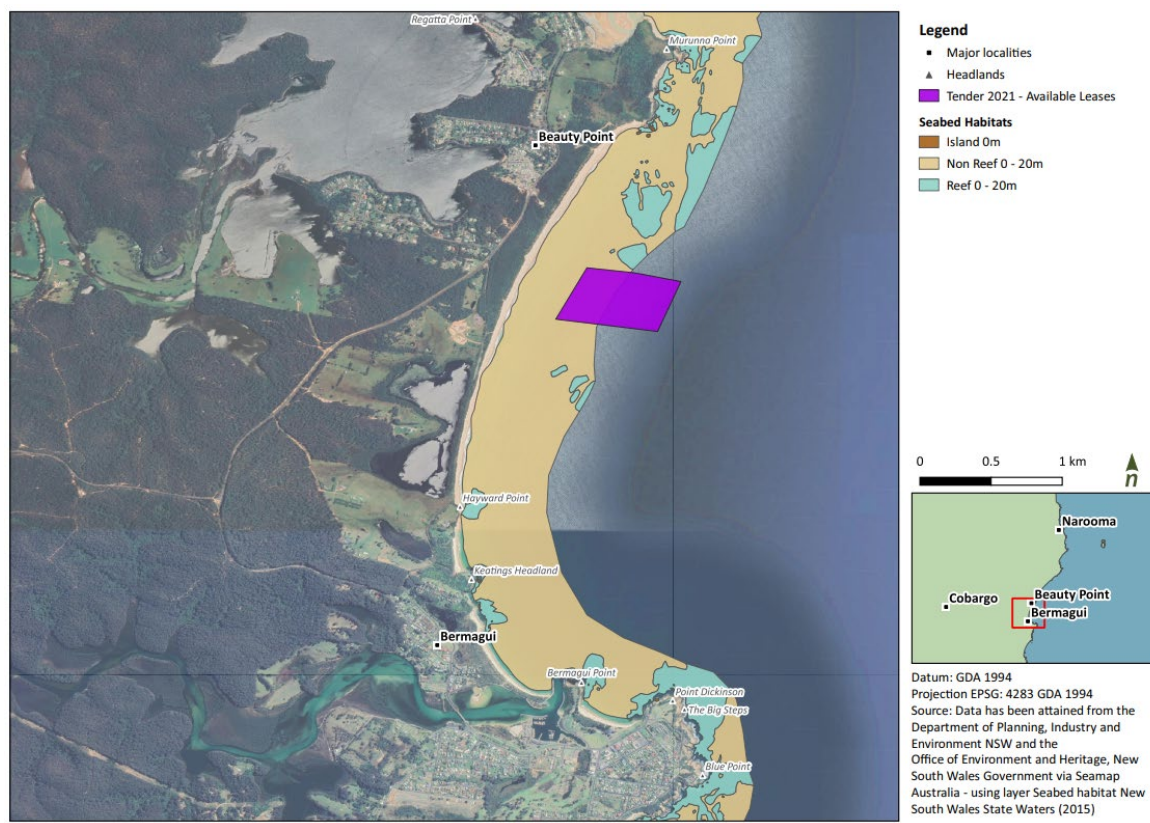


Figure 11. Seabed habitats mapped for the Bermagui lease area (purple square)

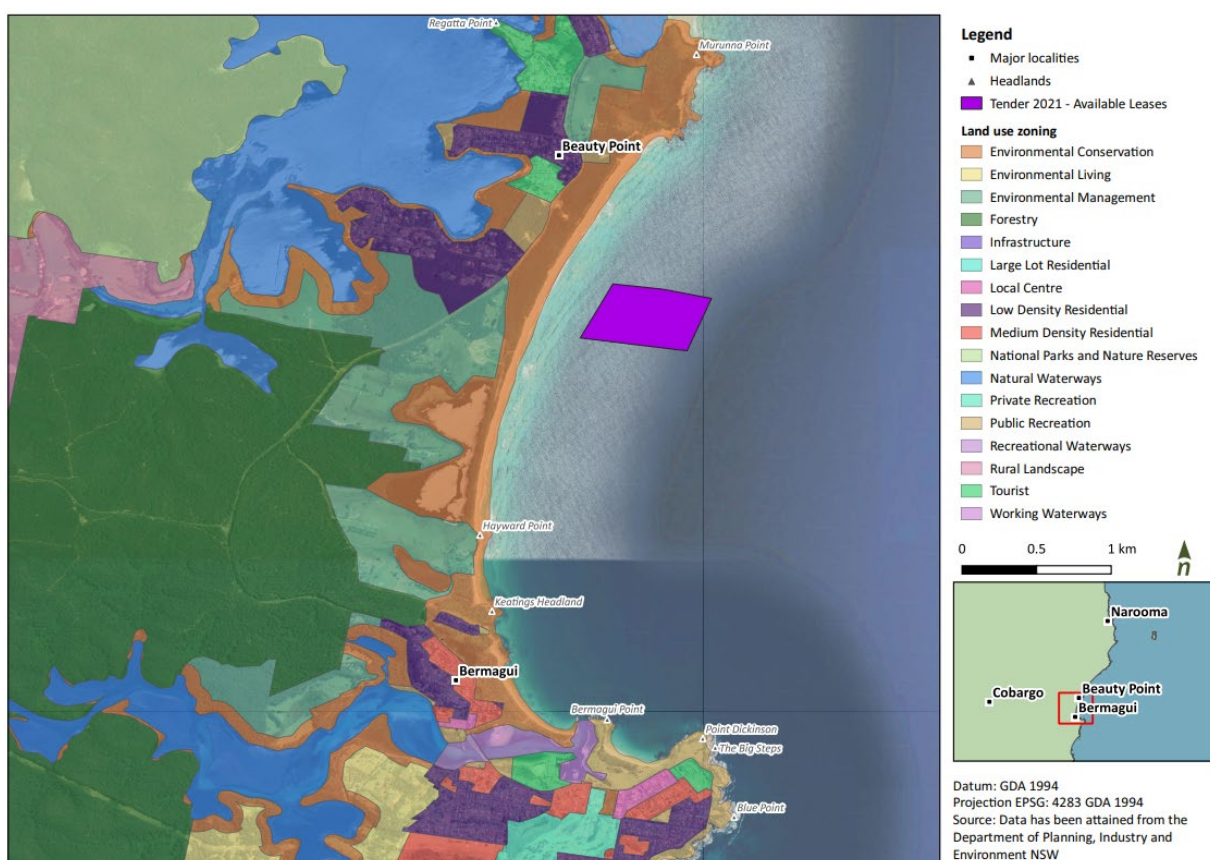


Figure 12. Surrounding land uses for the Bermagui lease area (purple square)

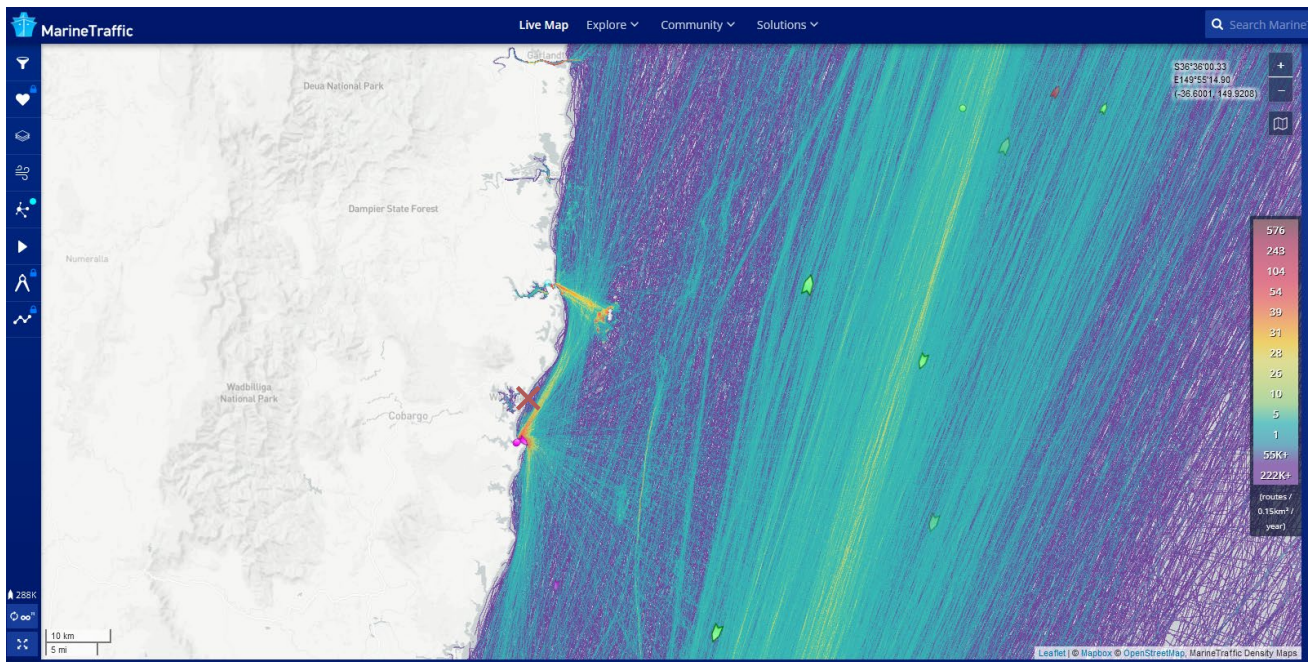


Figure 13. Approximate location of Bermagui site (marked with X) and shipping density. (Image source API 2022).

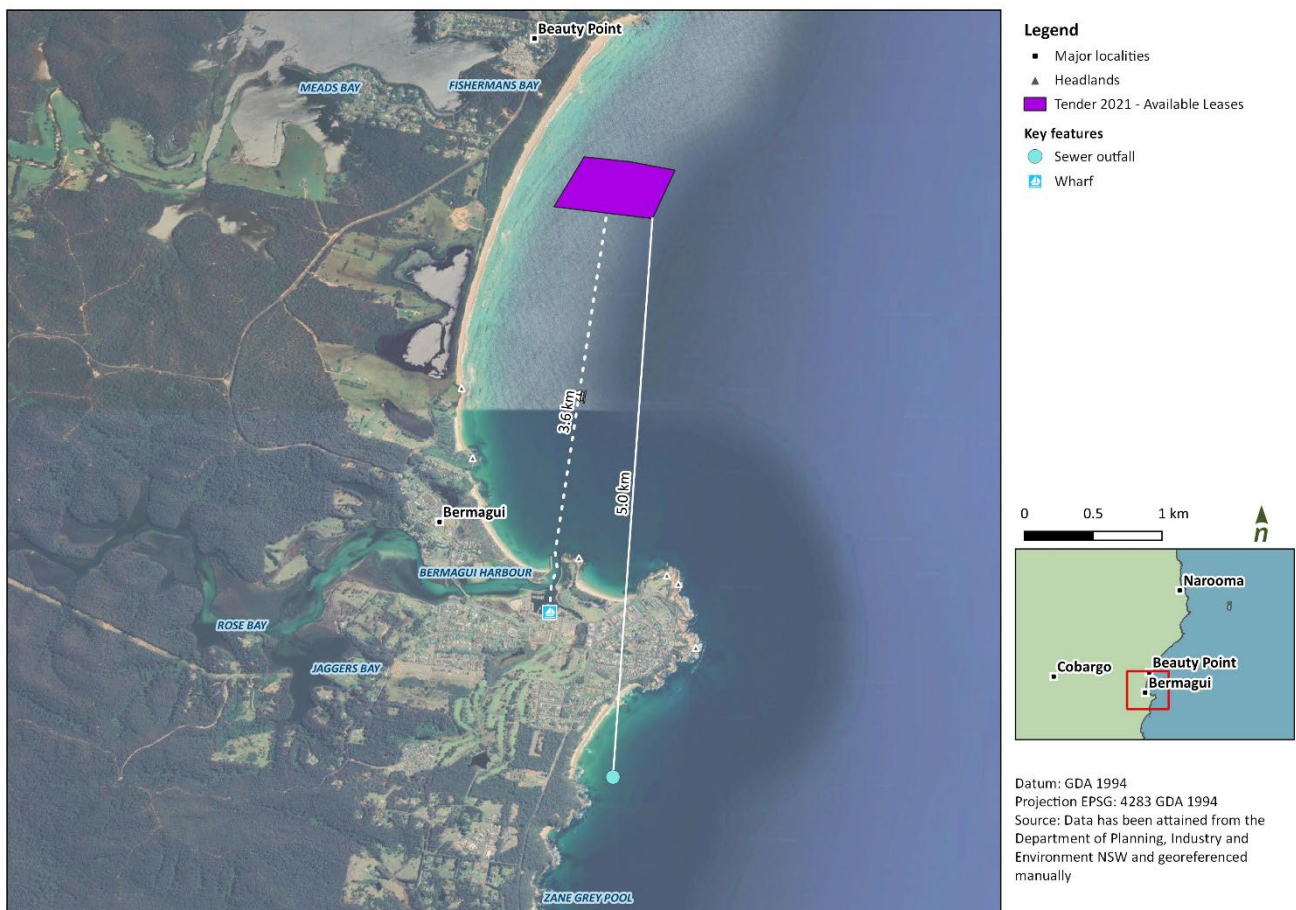


Figure 14. Sewage outfall pipe location (approx. 5km) and Bermagui Wharf (approx. 3.6km) from the Bermagui lease site (purple square).

2.4.2 Pambula Beach lease area (AL21/031)

This 30-hectare site in Merimbula Bay is approximately 1.5 km east of Pambula Beach (refer to maps below).

Key features include:

- Site is located on crown land.
- Site will not be located over a rocky reef or seagrass bed (refer to Figure 15 and Figure 16). Information provided by the DPI indicates that rocky reefs are unlikely to be present at the lease location. However, the exact location of the lease area would be confirmed as part of the EIS through further surveys to confirm that rocky reef or seagrass beds are not present.
- Site has been selected to minimise impacts to visual amenity and noise to residential areas. The nearest residential areas are approximately 1.7km from the lease area (refer to Figure 17).
- According to the NSW Fisheries Spatial Data Portal (DPI 2022) this site is not located within a marine park zone, key fish habitat areas, NSW oyster reefs, NSW estuarine macrophytes, NSW Blue Carbon priority area, or existing aquaculture lease areas.
- Marine traffic near the lease area is low with approximately 5 ships with an AIS receiver recorded with 5km of the site during 2020-2021 on the Marine Traffic Map (API 2022) (refer to Figure 19).
- Site located outside Department of Defence operational areas or mapped on the Unexploded Ordinance (UXO) map (Department of Defence 2022).
- Site is not located within 1km of sewage outfall pipelines. The nearest sewage outfall location is located approximately 3.1km from the lease area (refer to Figure 18).
- The site will be accessed by boat from Eden Wharf, approximately 20.9km from the Pambula Beach lease area (refer to Figure 18).
- Site is not located within 1km protection zones for submarine communication cables according to the submarine cable map and the Southern Sydney protection zone.
- Site is not located within 1km of marine infrastructure according to the boating maps for NSW waterways for Merimbula and Pambula Lakes (map ref 14A) (NSW Government 2022).
- Site is located outside known courses for yacht club competitions.
- Site is located outside known maritime heritage sites on the maritime heritage database (Department of Premier and Cabinet 2022). The nearest heritage site is the *Empire Gladstone* (heritage site ID 1521, Latitude: 36.9523 Longitude: 149.9465 AGD66) is mapped approximately 1.5km to the south-east of the site at a depth of approximately 12m and will not be impacted by the proposed development (refer to Figure 20).
- Site is located outside known heritage sites (Aboriginal place, State heritage register, Interim Heritage Order and local environmental plan) as mapped by the State Heritage Inventory Map (Department of Planning and Environment 2022).

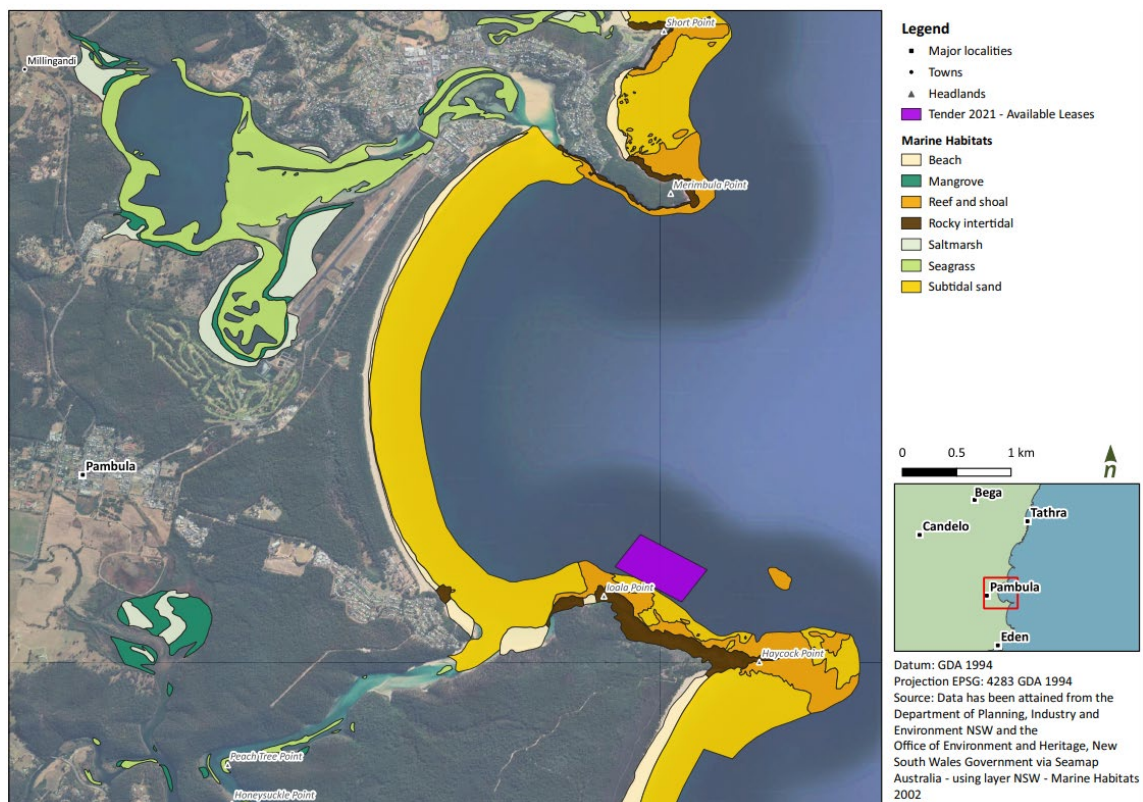


Figure 15. Coastal habitat mapping for the Pambula Beach lease area (purple polygon)

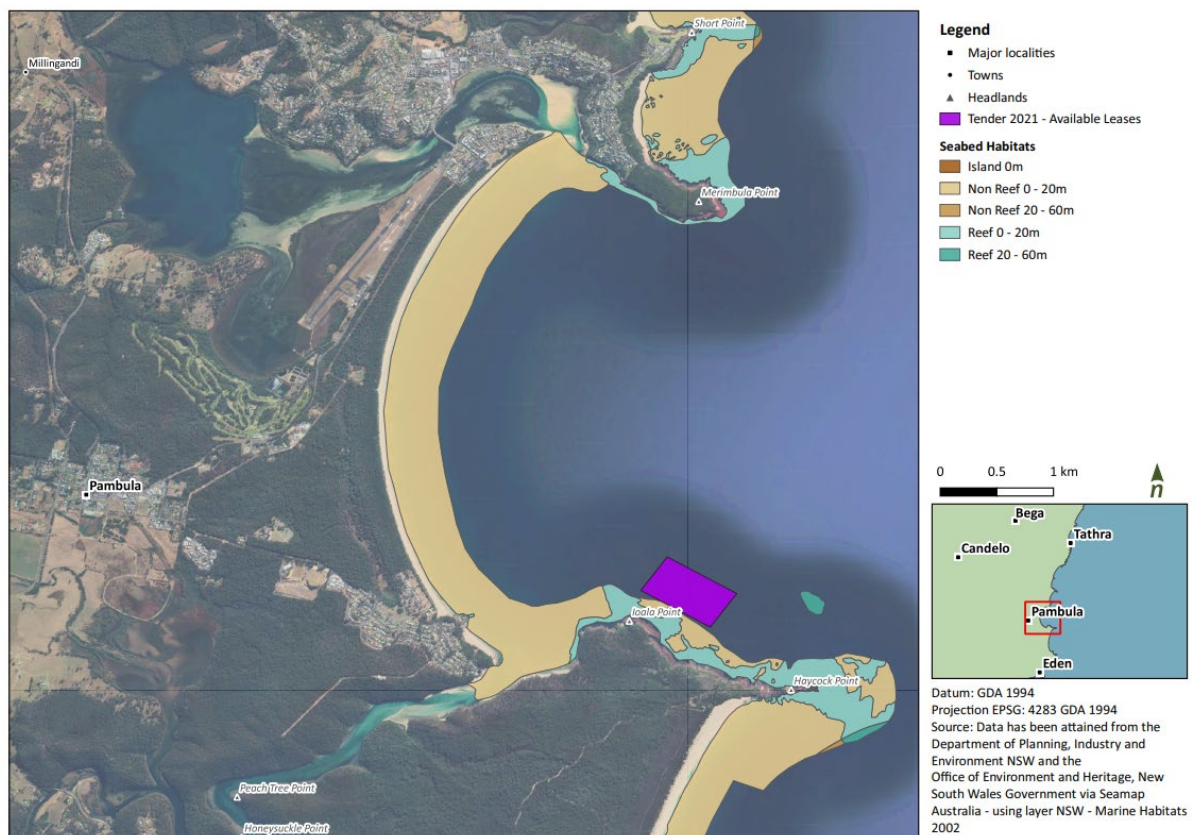


Figure 16. Seabed habitats mapped for the Pambula Beach lease area (purple polygon)

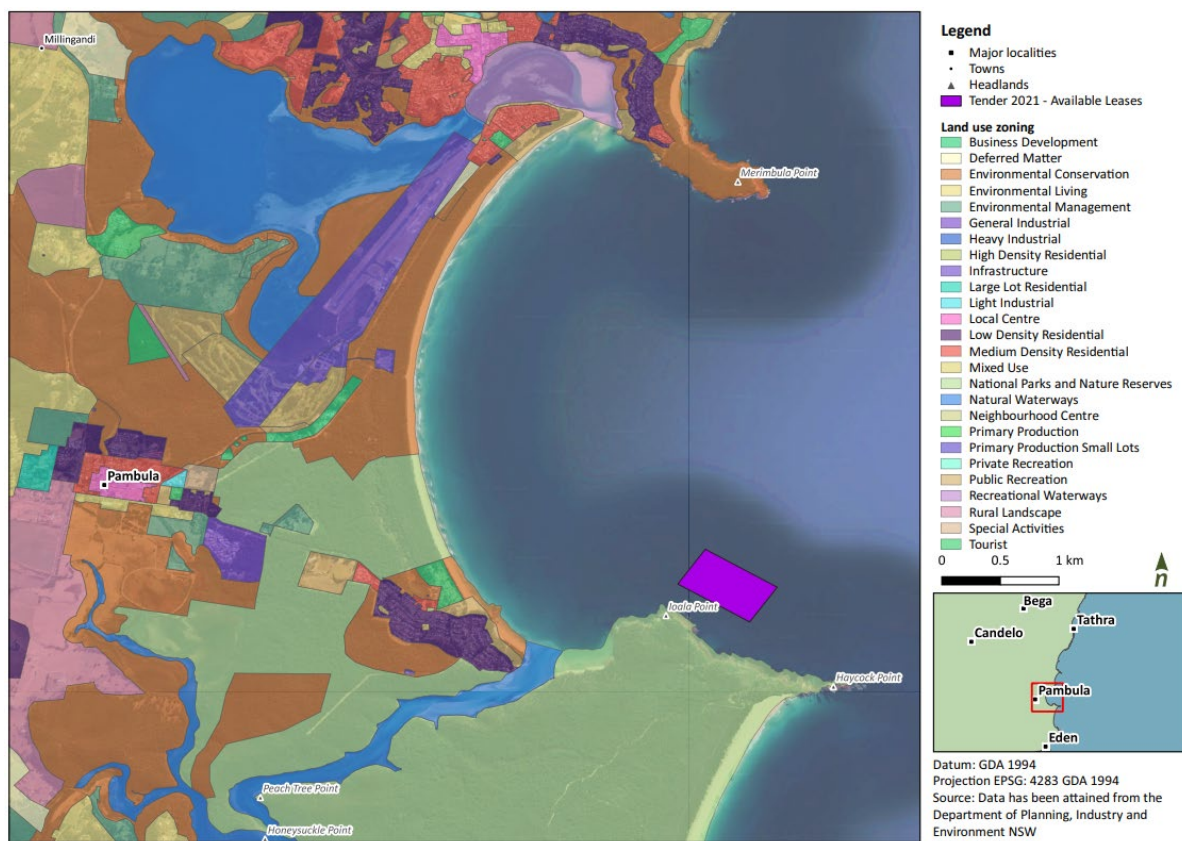


Figure 17. Surrounding land use near Pambula Beach lease area (purple polygon)



Figure 18. Sewage outfall pipe location (approx. 3.1km) and distance from Eden Wharf (approx. 20.9km) from the Pambula Beach lease area (purple polygon)

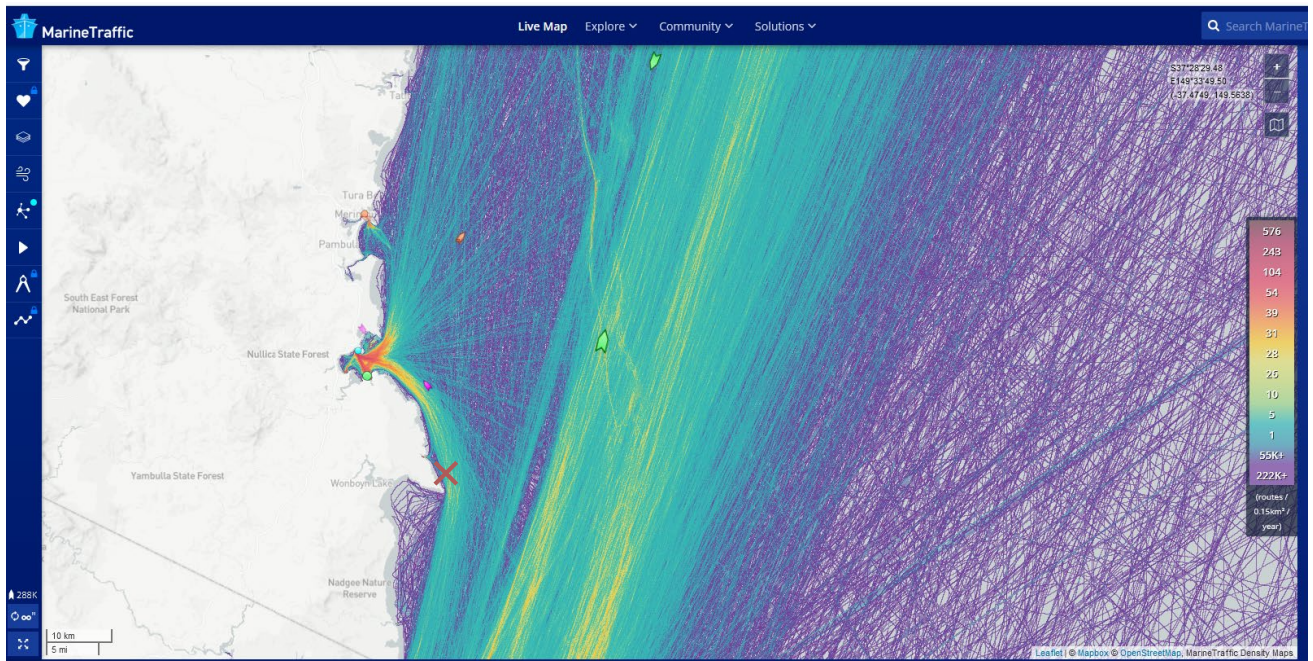


Figure 19. Marine traffic mapped near the Pambula Beach site (approximate location marked with X). (Image source API 2022)

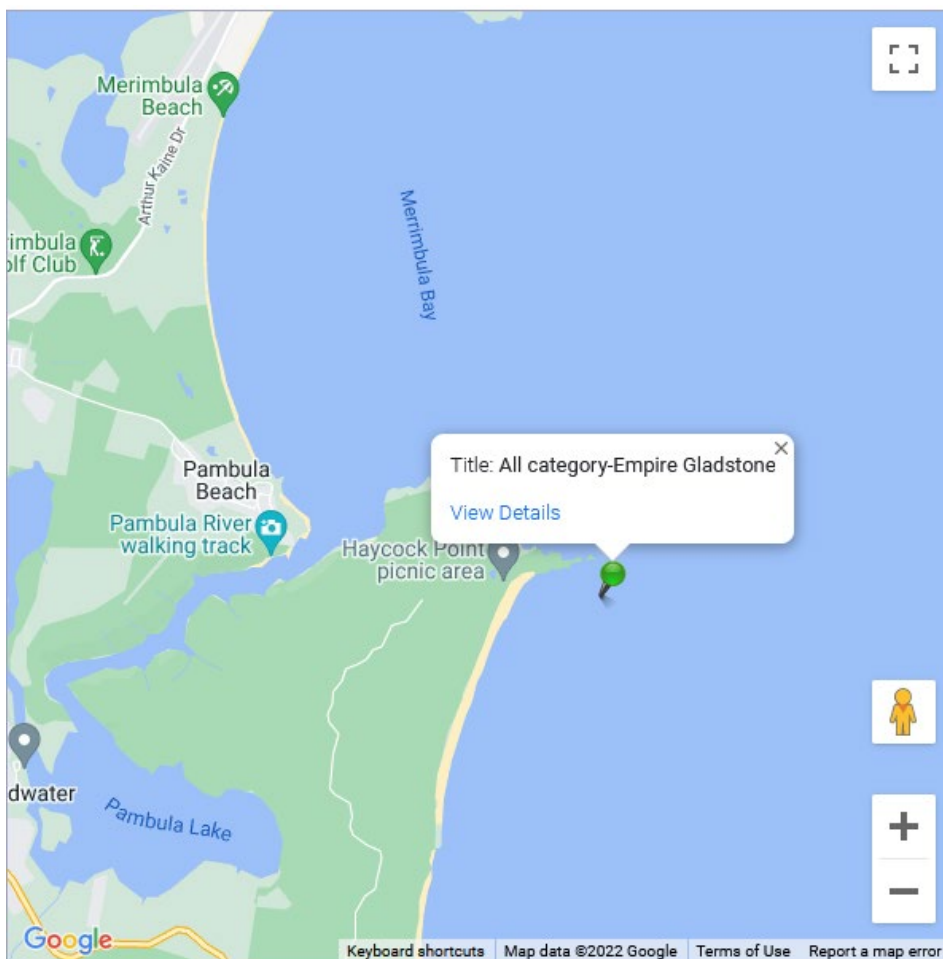


Figure 20. Empire Gladstone heritage site mapped approximately 1.5km to the south-east of the Pambula Beach site

2.5 Cumulative impacts

The *Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE 2021)* was reviewed in relation to the proposed project and potential impacts identified. Based on the design, construction and operational requirements of the project, cumulative impacts are not anticipated at this stage of the project. However, this will be confirmed as further information comes to hand during the impact assessment process.

Potential environmental impacts during construction and operational phases of the project would be managed through the development and implementation of an environmental management plan, as well as continuous monitoring of the lease areas using underwater cameras and in-situ remote monitoring devices.

All longlines, anchors and moorings will be removed at the conclusion of the project, and the seabed will be restored to pre-existing conditions. This is expected to require minimal rehabilitation effort as the project is being undertaken in sandy substrates and not rocky reefs or seagrass beds.

3 Statutory context

3.1 Commonwealth legislation

Key Commonwealth legislation considered in relation to the project are outlined below.

3.1.1 *Control of Naval Waters Act 1918*

The *Control of Naval Water Act 1918* regulates activities that occur within naval waters, such as mooring and anchoring, vessel speeds, restricting use of fire and lights and regulating entry into these waters. Naval waters do not exist within the lease areas or the routes to access the lease areas. Therefore, impacts to naval waters are not anticipated to occur as part of the project.

3.1.2 *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*

The objects of the EPBC Act are to:

- (a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and*
- (b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and*
- (c) to promote the conservation of biodiversity; and*
- (d) to provide for the protection and conservation of heritage; and*
- (e) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples; and*
- (f) to assist in the co-operative implementation of Australia's international environmental responsibilities; and*
- (g) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and*
- (h) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.*

A search of the Protected Matters Search Tool for both lease areas 500m from the approximate lease area locations was completed on 5 May 2022 and these reports are provided in Appendix A. A self-assessment will be completed to determine if it is a controlled action and referral is required under the EPBC Act. If required, the NSW Government will confirm whether the action can be assessed under the bilateral agreement with the Australian Government.

The project will be assessed in the EIS with consideration of the EPBC Act, in accordance with:

- Significant Impact Guidelines 1.1 – Matters of National Environmental Significance
- EPBC Act Policy Statement 2.2 – Industry: Offshore aquaculture
- Guidelines for biological survey and mapped data
- Survey guidelines for Australia's threatened mammals, fish, etc.

Bermagui lease site Protected Matters Search results (refer to Appendix A)

For the Bermagui lease site, a summary of the Protected Matters Search Tool results is presented below:

- 6 Threatened Ecological Communities (TECs) were identified within the search area but are unlikely to be impacted by the project as these are located on the adjacent land.

- 72 threatened species were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 77 listed marine species were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 12 whales and other cetaceans were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 55 migratory species were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 1 key ecological feature – upwelling east of Eden
- Batemans Marine Park is located approximately 2.2km to the north of the lease area.

Pambula lease site Protected Matters Search results (refer to Appendix A)

For the Pambula lease site, a summary of the Protected Matters Search Tool results is presented below:

- 3 TECs were identified within the search area but are unlikely to be impacted by the project as these are located on the adjacent land.
- 68 threatened species were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 81 listed marine species were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 12 whales and other cetaceans were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 50 migratory species were identified within the search area and species which have the potential to be impacted by the project will be considered.
- 1 key ecological feature – upwelling east of Eden
- Ben Boyd National Park is located approximately 0.5km to the south-west of the lease area.

3.1.3 Native Title Act 1993

The *Native Title Act 1993* recognises and protects native title. It provides that native title cannot be extinguished contrary to the Act. The South Coast People have lodged a claim over both lease areas in 2018 (refer to Figure 21). This claim is active and has not yet been determined. The proposed commercial seaweed leases do not grant exclusive use and do not extinguish native title. Consultation with the South Coast People will be included within the EIS for the project.

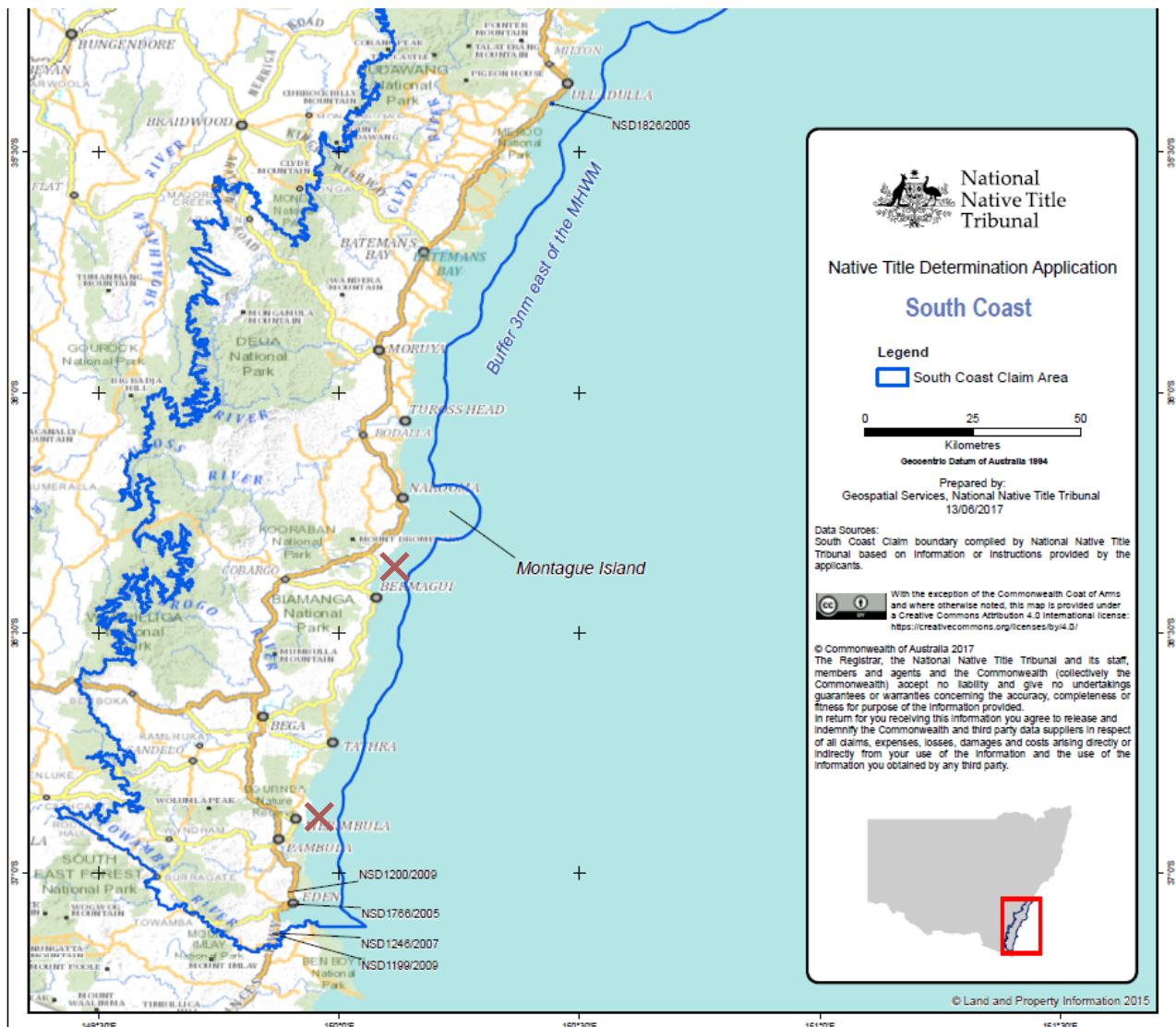


Figure 21. Native title claim by the South Coast People over the marine waters where the lease areas are proposed (approximate location of lease locations are marked with an X) (Image sourced from the National Native Title Tribunal 2022)

3.1.4 Underwater Cultural Heritage Act 2018

The *Underwater Cultural Heritage Act 2018* came into effect on 1 July 2019, replacing the *Historic Shipwrecks Act 1976* (Historic Shipwrecks Act). The UCH Act continues the protection of Australia's shipwrecks and has broadened protection to sunken aircraft and other types of underwater cultural heritage including Australia's Aboriginal and Torres Strait Islander Underwater Cultural Heritage in Commonwealth waters.

When undertaking actions in the marine environment, proponents and their contractors must adhere to all requirements of the UCH Act including:

- do not take actions that impact on underwater heritage without a permit;
- observe the requirements of protected zones and obtain a permit to enter or operate in a protected zone if it is required; and
- provide a notification of the discovery of any suspected underwater heritage identified during the course of the proposed action within 21 days of the discovery.

There are no historic shipwrecks that have been identified in the Australasian Underwater Cultural Heritage Database (DAWE 2022) in proximity to the lease sites that may be impacted by this project. However, benthic surveys will be completed as part of the EIS to confirm that no potential impacts to underwater heritage will occur.

3.2 State legislation

Key State legislation considered in relation to the project are outlined below.

3.2.1 *Aboriginal Land Rights Act 1983*

The *Aboriginal Land Rights Act 1983* provides a mechanism for compensating Aboriginal people of NSW for loss of their land. This is unlikely to be triggered for the project as the proposed aquaculture leases do not grant exclusive use. Consultation with the the South Coast People who currently have a native title claim over the lease areas will be included within the EIS for the project.

3.2.2 *Biodiversity Conservation Act 2016*

The intent of the *Biodiversity Conservation Act 2016* is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

Part 7, Division 2, subsection 7.9 (Biodiversity assessment for State significant development or infrastructure) requires an application for development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* for SSD to be accompanied by a Biodiversity Development Assessment Report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values, in which case a BDAR waiver will be required.

Ecological assessments (e.g. under Fisheries Management Act) which do not comply with the Biodiversity Assessment Methodology (BAM) (DPIE 2020) can be included in the BDAR or waiver as separate chapters or can be in a stand-alone report. The methodology for assessment of ecological impacts for the project will be determined by the suitably qualified person as part of the EIS.

However, the ecological impact assessment will need to consider the following documents in terms of the potential impacts associated with the project:

- *NSW Marine Estate Management Strategy 2018 – 2028* (NSW Marine Estate Management Authority 2018): The EIS will need to consider the management initiatives and management strategies detailed in this document as part of the consideration of impacts to biodiversity.
- *NSW Marine Estate Threat and Risk Assessment (TARA) final report* (BMT WBM Pty Ltd 2017): This document identifies how various activities, including aquaculture, may affect environmental assets, or social or economic benefits that accrue from the marine estate. Whilst this report focuses on estuarine aquaculture, the EIS will need to consider relevant use, activities or stressors associated with the project.

A search of NSW BioNet Atlas (BioNet 2022) for both lease areas was completed and within a 10km-by-10km area there were 800 records and 736 records for animals, plants, fungi, communities, threats, and endangered populations identified for the Bermagui and Pambula Beach lease areas respectively (refer to Appendix A).

The EIS will consider in detail the potential impacts of the project on threatened species, populations and communities, and provide appropriate mitigation actions to ensure no significant impacts occur to these as part of the project. No removal or disturbance of terrestrial habitat or native vegetation is proposed.

3.2.3 Biosecurity Act 2015

The intent of the *Biosecurity Act 2015* is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers, or potential carriers.

The *Biosecurity Act 2015* supports the Biosecurity Strategy 2013-2021 which shares the responsibility of pests, weeds and diseases between government, industry, and the community.

The project will be required to consider the *Biosecurity Act 2015* and the *Biosecurity Strategy 2013-2021* to ensure the protection of aquatic environments from the introduction of new pests and diseases that will reduce the value and function of aquatic ecosystems.

The applicant will also be required to comply with the 'general biosecurity duty' found in Part 3, section 22 of the *Biosecurity Act 2015*: *Any person who deals with biosecurity matter or a carrier and who knows, or ought reasonably to know, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing has a biosecurity duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised.*

3.2.4 Coastal Management Act 2016 (CM Act)

The object of the CM Act is to manage the coastal environment of New South Wales in a manner consistent with the principles of ecologically sustainable development for the social, cultural and economic well-being of the people of the State.

Part 2, subsection 5 defines the 'coastal zone' and the project is located within the 'coastal environment area' (light blue) in Figure 22.

Part 2, subsection 8 defines 'coastal environment areas' are *the land identified as land containing coastal features such as the coastal waters of the State, estuaries, coastal lakes, coastal lagoons and land adjoining those features, including headlands and rock platforms*. The management objectives for these areas include:

- a) *to protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons, and enhance natural character, scenic value, biological diversity and ecosystem integrity,*
- b) *to reduce threats to and improve the resilience of coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change,*
- c) *to maintain and improve water quality and estuary health,*
- d) *to support the social and cultural values of coastal waters, estuaries, coastal lakes and coastal lagoons,*
- e) *to maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system operating at the relevant place,*
- f) *to maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.*

Part 3 of the CM Act outlines that coastal management programs can be developed by local councils to set the long-term strategy for the co-ordinated management of land within the coastal zone with a focus on achieving the objects of the CM Act. Since 2016, Bega Valley Shire Council, supported by the NSW Government, have been developing a range of Coastal Management Programs to guide the management of the coastline (Bega Valley Shire Council 2022). Bega Valley Shire Council is currently developing a *Scoping Study* in line with Stage 1 of the Coastal Management Manual which will cover 225km of coastline and 29 estuaries. The *Scoping Study* will review current management, identify issues, determine what studies are needed to fill knowledge gaps, undertake a risk assessment to prioritise threats and prepare a forward program for preparing Coastal Management programs to guide future management of the coast and estuaries of the Bega Valley.

The project will consider the management objectives of the CM Act for coastal environmental areas and outcomes of the Scoping Study should this be available prior to the preparation of the EIS.

In addition, the applicant is required to map relevant sediment compartments listed in Schedule 1 of the CM Act and provide evidence that the proposed infrastructure will not interrupt sediment transport.

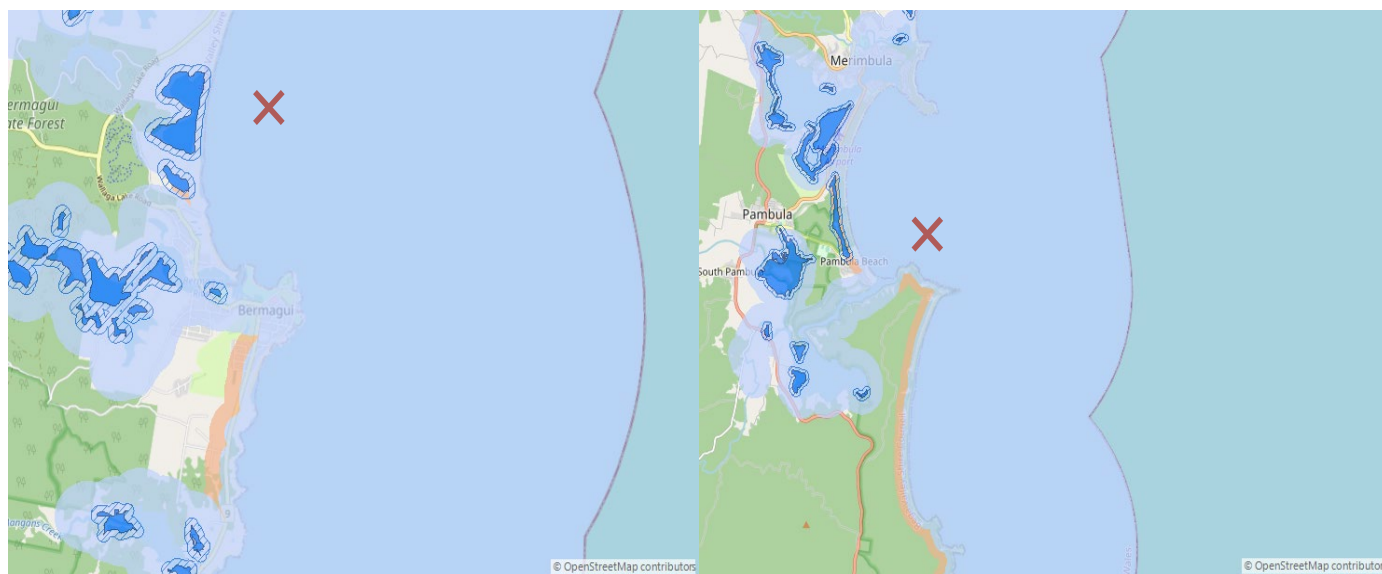


Figure 22. Coastal environment areas (light blue buffer) defined under the *Coastal Management Act 2016* for Bermagui (left) and Pambula (right) lease sites with approximate locations marked with a X (Image sourced from NSW Government 2022)

3.2.5 Crown Lands Management Act 2016

The proposed areas for the commercial seaweed aquaculture leases are located on submerged Crown land. The applicant has requested landowner's consent from Crown Lands to lodge the SSD application.

3.2.6 Environmentally Hazardous Chemicals Act 1985

The *Environmentally Hazardous Chemicals Act 1985* governs the use and disposal of potentially hazardous chemicals and waste material. Any use and/or removal of hazardous chemicals and material defined under the *Environmentally Hazardous Chemicals Act 1985* require licensing and must be appropriately declared. It is not expected that any hazardous chemicals will be used as part of the project, apart from fuel utilised for boats and cars for transport for the project.

3.2.7 Environmental Planning and Assessment Act 1979 (EP&A Act)

The *Environmental Planning and Assessment Act 1979* (EP&A Act) provides the legislative framework for the assessment and determination of the development in NSW.

Section 4.36 of the EP&A Act identifies types of development, which due to their size or level of impact are potentially of State significance. Subject to Section 4.36(2): *A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.*

The proposed development is SSD, as detailed below in section 3.2.12 (*State Environmental Planning Policy (Planning Systems) 2021*).

Section 4.12(8) of the EP&A Act requires an SSD application to be accompanied by an EIS that complies with the Planning Secretary's Environmental Assessment Requirements (SEARs) for approval by the Minister.

Division 4.7 of the EP&A Act outlines relevant assessment requirements. Section 4.41 outlines approvals that do not apply to SSD and section 4.42 outlines approvals that cannot be refused where required to complete the SSD. Table 5 outlines the approvals listed under these sections of the EP&A Act and their relevance to the project.

Table 5. Summary of EP&A Act section 4.41 and 4.42 approvals

Approval	Relevance
Section 4.41 of the EP&A Act	
A permit under section 201, 205 or 219 of the <i>Fisheries Management Act 1994</i>	Not applicable. The project does not include dredging or reclamation (under section 201 of the <i>Fisheries Management Act 1994</i>). Sea Health Products already has a permit under section 205 of <i>Fisheries Management Act 1994</i> to take marine vegetation that will be used as seed stock for the project. The project does not include impacts to fish passage under section 219 of the <i>Fisheries Management Act 1994</i>.
An approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977	Not applicable. No heritage items have been identified at the proposal sites.
An Aboriginal heritage impact permit under section 90 of the <i>National Parks and Wildlife Act 1974</i>	Not applicable. No heritage items have been identified at the proposal sites.
A bush fire safety authority under section 100B of the <i>Rural Fires Act 1997</i>	Not applicable. The proposal site is not located on bushfire prone land.
A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the <i>Water Management Act 2000</i>	Not applicable.
Section 4.42 of the EP&A Act	
An aquaculture permit under section 144 of the <i>Fisheries Management Act 1994</i>	Applicable. Class A aquaculture permit will be required for the two lease areas under section 144. Class H aquaculture permit under section 144 will be required for the hatchery at Tilba Tilba.
An approval under section 15 of the <i>Mine Subsidence Compensation Act 1961</i>	Not applicable. There are no mining activities proposed.
A mining lease under the <i>Mining Act 1992</i>	Not applicable. There are no mining activities proposed.

Approval	Relevance
A production lease under the <i>Petroleum (Onshore) Act 1991</i>	Not applicable There are no petroleum activities proposed.
An environment protection licence under Chapter 3 of the <i>Protection of the Environment Operations Act 1997</i> (for any of the purposes referred to in section 43 of that Act)	Not applicable An environmental protection licence will not be required.
A consent under section 138 of the <i>Roads Act 1993</i>	Not applicable A section 138 approval will not be required from Bega Valley Shire Council.
A licence under the <i>Pipelines Act 1967</i>	Not applicable. The construction of a pipeline is not proposed.

3.2.8 Fisheries Management Act 1994 (FM Act)

The object of the FM Act is to conserve, develop and share the fishery resources of the State for the benefit of present and future generations.

Both aquaculture leases will require a Class A aquaculture permit under section 144 of the *Fisheries Management Act 1994*. Class A aquaculture permits authorise extensive (no supplementary feeding) aquaculture on public water land (submerged Crown land) that is subject to an aquaculture lease. This permit class is required for the cultivation of various species including oysters (e.g. Sydney Rock, Native (Angasi), Pacific Oysters) and other shellfish (e.g. Clams and Cockles). This activity is commonly undertaken in NSW estuaries utilising infrastructure such as racks and longlines with the shellfish grown on sticks, trays or within baskets.

Both aquaculture leases will also require an aquaculture lease under section 163 of the *Fisheries Management Act 1994*.

The hatchery to be established at the existing land-based processing facility at Tilba Tilba will also require an NSW Class H aquaculture permit under section 144(4) of the *Fisheries Management Act 1994*. This related but separate land-based development is not considered an SSD.

3.2.9 Food Act 2003

The *Food Act 2003* is administered by the NSW Food Authority with the object of ensuring food for sale is both safe and suitable for human consumption. A Food Authority Licence under the Food Regulation 2010 will be required for seaweed harvested for human consumption for the project. In addition, Sea Health Products is working with Integrity Compliance Solutions on developing an Australian food safety plan for seaweed.

3.2.10 Heritage Act 1977

Under Section 51 of the *Heritage Act 1977*, a permit is required to move, damage, or destroy any historic shipwreck. The Heritage Act 1977 does not apply to State waters that are waters to which the Commonwealths *Historic Shipwrecks Act 1976* applies. Impacts or damage to shipwrecks in proximity to the two lease sites are not anticipated as part of the project.

The two lease areas are not located over known shipwrecks. The EIS will consider the nearest heritage site to Pambula Beach which is the *Empire Gladstone* (heritage site ID 1521, Latitude: 36.9523 Longitude: 149.9465 AGD66)

approximately 1.5km to the south-east of the site at a depth of approximately 12m. This wreck is currently not protected under the *Heritage Act 1977*.

3.2.11 State Environmental Planning Policy (Resilience and Hazards) 2021

The *State Environmental Planning Policy (Resilience and Hazards) 2021* commenced on 1 March 2022 and provides for an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objectives of the *Coastal Management Act 2016*.

The proposed aquaculture leases are within the 'coastal environment area map' and the existing wharves are within the 'coastal use area map' of the Resilience and Hazards SEPP 2021, so the environmental impact assessment and consent authority must consider matters under:

- Division 3 Coastal environment area
- Division 4 Coastal use area
- Division 5 General

These include, but are not limited to:

- (a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,
- (b) coastal environmental values and natural coastal processes,
- (c) the water quality of the marine estate
- (d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,
- (e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,
- (f) Aboriginal cultural heritage, practices and places,
- (g) the use of the surf zone.

3.2.12 State Environmental Planning Policy (Planning Systems) 2021

This *State Environmental Planning Policy (Planning Systems) 2021* consolidates the former *State Environmental Planning Policy (State and Regional Development) 2011*, *State Environmental Planning Policy (Aboriginal Land) 2019* and *State Environmental Planning Policy (Concurrences and Consents) 2018*.

The *State Environmental Planning Policy (Planning Systems) 2021*:

- identifies State or regionally significant development, State significant Infrastructure, and critical State significant infrastructure
- provides for consideration of development delivery plans by local Aboriginal land councils in planning assessment
- allows the Planning Secretary to elect to be the concurrence authority for certain development that requires concurrence under nominated State environmental planning policies.

Development is declared to be State significant development (SSD) if:

- a) *the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Environmental Planning and Assessment Act 1979, and*
- b) *the development is specified in Schedule 1 or 2.*

Part 4, Division 4.2 (Consent authority), subdivision 4. of the EP&A Act 1979 requires consent for SSD from either the Independent Planning Commission or the Minister before they proceed.

Schedule 1, subdivision 2 of the *State Environmental Planning Policy (Planning Systems) 2021* outlines the criteria for SSD for aquaculture, which includes:

- 1) *Development for the purpose of aquaculture that has a capital investment value of more than \$30 million.*
- 2) *Development for the purpose of aquaculture located in an environmentally sensitive area of State significance.*
- 3) *This clause does not apply to development for the purpose of oyster aquaculture. Note. Subclause (3) is affected by clause 19 of State Environmental Planning Policy No 62—Sustainable Aquaculture, which relates to applications under the Act with respect to oyster aquaculture that were made but not finally determined prior to 1 August 2005*

Subclause (1) above does not apply as the proposed project is less than \$30 million.

Subclause (2) above does apply as the lease locations are located within an environmentally sensitive area (coastal waters). Chapter 2, Part 2.1 preliminary, subdivision 2.1 defines environmentally sensitive areas of state significance as: Coastal waters of the State.

Subclause (3) above does not apply as the project is not for oyster aquaculture.

3.2.13 State Environmental Planning Policy (Primary Production) 2021

The *State Environmental Planning Policy (Primary Production) 2021* commenced on 1 March 2022.

This SEPP contains planning provisions:

- to manage primary production and rural development including supporting sustainable agriculture
- for the protection of prime agricultural land of state and regional significance as well as regionally significant mining and extractive resources.

Division 2 (Permissible marine waters aquaculture development) specifies that this division applies to development for the purpose of marine waters aquaculture (other than oyster aquaculture development).

Subdivision 2.20 (Marine waters aquaculture permissible with consent) outlines that development must only be carried out with development consent and consent must not be granted unless the consent authority is satisfied that:

- (a) the development will not be undertaken in an excluded place specified in Part 1 of Schedule 2 (NOT DESIGNATED – BLANK IN SCHEDULE), and
- (b) the development complies with the site location and operational requirements (if any) set out in Part 2 of Schedule 2 (NOT DESIGNATED – BLANK IN SCHEDULE) for the development (the minimum performance criteria).
- (3) The requirements set out in Part 2 of Schedule 2 are minimum requirements and do not limit the matters a consent authority is required to take into consideration under the Act or the conditions that it may impose on a development consent.

The Minister is the consent authority for marine waters aquaculture development and under subdivision 2.22 must take into consideration provisions of an aquaculture industry development plan that are relevant to the subject of the development application. The aquaculture industry development plan is the MWSAS 2018 and this has been closely considered in the project proposal.

3.2.14 Marine Parks Act 1997

Provisions for the protection of marine biological diversity, marine habitats and ecological processes in marine parks, as well as ecologically sustainable resource use are administered by Fisheries NSW under the *Marine Parks Act 1997*. The lease areas for the project are not located within any marine park zones.

3.2.15 *Marine Estate Management Act 2014*

The object of the *Marine Estate Management Act 2014* is to manage the marine estate of NSW consistent with the principles of ecologically sustainable development. The marine estate is defined as the coastal waters of NSW within the meaning of Part 10 of the *Interpretation Act 1987*.

The NSW Marine Estate Management Strategy 2018-2028 sets the overarching framework for the NSW Government to coordinate the management of the marine estate over the next decade in accordance with the objects of the *Marine Estate Management Act 2014* and the NSW Government's vision for the marine estate which is: *A healthy coast and sea, managed for the greatest wellbeing of the community, now and into the future.*

The two lease areas are not located within a marine park or aquatic reserve, and vessels servicing the lease areas will not travel through marine park or aquatic reserves; therefore section 55 of the *Marine Estate Management Act 2014* does not need to be considered further.

However, the project will need to consider the following documents in terms of the potential impacts associated with the project:

- *NSW Marine Estate Management Strategy 2018 – 2028* (NSW Marine Estate Management Authority 2018): The EIS will need to consider the management initiatives and management strategies detailed in this document as part of the consideration of impacts to biodiversity.
- *NSW Marine Estate Threat and Risk Assessment (TARA) final report* (BMT WBM Pty Ltd 2017): This document identifies how various activities, including aquaculture, may affect environmental assets, or social or economic benefits that accrue from the marine estate. Whilst this report focuses on estuarine aquaculture, the EIS will need to consider relevant use, activities or stressors associated with the project.

3.2.16 *Native Title (New South Wales) Act 1994*

The main objects of the *Native Title (NSW) Act 1994* are:

- a) in accordance with the Commonwealth Native Title Act, to validate any past acts, and intermediate period acts, invalidated because of the existence of native title and to confirm certain rights, and
- b) to ensure that New South Wales law is consistent with standards set by the Commonwealth Native Title Act for future dealings affecting native title.

Refer to section 3.1.3 for information on the Commonwealth Native Title Act 1993.

3.2.17 *Protection of Environment Operations Act 1997 (POEO Act)*

The POEO Act, ultimately aims to protect, enhance, and restore the quality of the environment in NSW, to reduce risk to human health and promote mechanisms that minimise environmental degradation through a strong set of provisions and offences.

A licence is required from NSW Environmental Protection Authority (EPA) if any of the activities associated with the proposal are determined to be a Scheduled Activity under Schedule 1 of the Act.

The project does not meet the definition of scheduled activity (3) Aquaculture and mariculture as the project does not include supplemental feeding in tanks or artificial waterbodies or discharge of effluent, liquid sludge or other waste into natural waterbodies. Longline aquaculture is not considered to be a Scheduled Activity and a licence will not be required for the project.

It is an offence under Section 120 of the POEO Act to pollute waters. At its broadest, the POEO Act defines water pollution as introducing any matter into waters which changes the physical, chemical, or biological condition of the water. Therefore, the project will be required to comply with requirements of this act in relation to construction and operational noise, as well as potential water quality impacts, specified in the POEO Act.

3.2.18 Waste Avoidance and Resource Recovery Act 2001

The objects of the *Waste Avoidance and Resource Recovery Act 2001* are to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development and to ensure that resource management options are considered against a hierarchy of the following order: 1. avoidance of unnecessary resource consumption 2. resource recovery (including reuse, reprocessing, recycling, and energy recovery), disposal. to provide for the continual reduction in waste generation.

Also to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste, ensure that industry shares with the community the responsibility for reducing and dealing with waste, ensure the efficient funding of waste and resource management planning, programs and service delivery, achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis and to assist in the achievement of the objectives of the *Protection of the Environment Operations Act 1997*.

The project will consider the objects of the *Waste Avoidance and Resource Recovery Act 2001* in the EIS, especially in terms of the Environmental Management Plan (EMP) to be developed and potential impacts of wastes generated from the commercial production of seaweed on humans and the environment. At this stage of the project these potential impacts are considered negligible.

3.3 Summary of statutory context

The legislative and environmental planning instruments relevant to the project are summarised in Table 6.

Table 6. Summary of statutory context

Matter	Statutory requirements	Relevance to the project
Permissibility	<i>Environmental Planning and Assessment Act 1979, State Environmental Planning Policy (Planning Systems) 2021 and State Environmental Planning Policy (Primary Production) 2021</i>	The project is permissible under the <i>Environmental Planning and Assessment Act 1979, State Environmental Planning Policy (Planning Systems) 2021 and State Environmental Planning Policy (Primary Production) 2021</i> (refer to sections 3.2.6 to 3.2.13 above).
Power to grant consent	<i>Environmental Planning and Assessment Act 1979</i>	Part 4, Division 4.2 (Consent authority), subdivision 4. of the EP&A Act 1979 requires consent for SSD from either the Independent Planning Commission or the Minister before they proceed.
	<i>State Environmental Planning Policy (Primary Production) 2021</i>	The <i>State Environmental Planning Policy (Primary Production) 2021</i> requires the consent authority (the Minister) to consider the MWSAS. The project is permissible based on the assessment of the constraint criteria (refer to Table 3).

Matter	Statutory requirements	Relevance to the project
	<i>Fisheries Management Act 1994</i>	The <i>Fisheries Management Act 1994</i> requires the consent authority (NSW DPI) to issue the aquaculture lease and aquaculture permit for the project. Both aquaculture leases will require a Class A aquaculture permit under section 144 of the <i>Fisheries Management Act 1994</i>. Class H aquaculture permit under section 144 of the <i>Fisheries Management Act 1994</i> will be required for the hatchery at Tilba Tilba.
	<i>Crown Land Management Act 2016</i>	The proposed areas for the commercial seaweed aquaculture leases are located on submerged Crown land and therefore will require landowner's consent from the NSW Department of Industry – Land and Water to lodge the SSD application. Landowner consent has been already requested by the applicant.
	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	A self-assessment will be completed to determine if it is a controlled action and referral is required under the EPBC Act. The project will be assessed in the EIS with consideration of the EPBC Act, in accordance with: • Significant Impact Guidelines 1.1 – Matters of National Environmental Significance • EPBC Act Policy Statement 2.2 – Industry: Offshore aquaculture • Guidelines for biological survey and mapped data • Survey guidelines for Australia's threatened mammals, fish, etc.
Other approvals	<i>Food Act 2003</i>	Food authority licence will be required to allow Sea Health Products

Matter	Statutory requirements	Relevance to the project
		to sell seaweed products for human consumption.
Pre-conditions to exercising the power to grant consent	<i>Aboriginal Land Rights Act 1983, Native Title Act 1993, Native Title Act (NSW) 1994</i>	The South Coast People have lodged a claim over both lease areas in 2018. This claim is active and has not yet been determined. The proposed commercial seaweed leases do not grant exclusive use and do not extinguish native title. Consultation with the South Coast People and consideration of any determination decisions will be included within the EIS for the project.
Mandatory matters for consideration	<i>Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000), Marine Water Quality Objectives for NSW Ocean Waters – South Coast (Department of Environment and Conservation NSW 2005)</i>	These water quality guidelines and objectives will be utilised to determine potential water quality impacts posted by the project as well as to inform potential water quality requirements and limits (if applicable) for the project.
	<i>National Water Quality Management Strategy (Department of Agriculture, Water and the Environment (DAWE) 2018)</i>	The National Water Quality Management Strategy will be considered as part of the EIS when determining potential water quality impacts for the project and developing the water quality monitoring plan for the project.
	<i>Bega Valley Shire Council Local Environment Plan (2013)</i>	The lease sites are not mapped currently under the plan. However, the project will need to consider the use of the Bermagui and Eden Wharf for the collection of kelp and the objectives of the zone and potential approvals or consent required.
	<i>Biodiversity Conservation Act 2016, State Environmental Planning Policy (Biodiversity and Conservation) 2021,</i>	There are 800 records and 736 records for animals, plants, fungi, communities, threats, and endangered populations identified for the Bermagui and Pambula Beach

Matter	Statutory requirements	Relevance to the project
	NSW DPI Threatened Species Assessment Guidelines (DPI 2008)	lease areas respectively (refer to Appendix A). The EIS will consider in detail the potential ecological impacts of the project and provide appropriate mitigation actions to ensure no significant impacts occur to these as part of the project.
	<i>Biosecurity Act 2015, Biosecurity Strategy 2013-2021</i>	The project will consider the <i>Biosecurity Act 2015</i> and the <i>Biosecurity Strategy 2013-2021</i> to ensure the protection of aquatic environments from the introduction of new pests and diseases that will reduce the value and function of aquatic ecosystems.
	<i>Coastal Management Act 2016 and Resilience and Hazards SEPP 2021</i>	The project will consider the objectives of the CM Act and the Resilience and Hazards SEPP (Divisions 3-5) in the preparation of the EIS. In addition, the applicant is required to map relevant sediment compartments listed in Schedule 1 of the <i>Coastal Management Act 2016</i> and provide evidence that the proposed infrastructure will not interrupt sediment transport.
	<i>Environmental Planning and Assessment Act 1979</i>	Section 4.15 of the <i>Environmental Planning and Assessment Act 1979</i> specifies mandatory considerations for the development application. These matters will be considered and addressed within the EIS document.
	<i>Protection of the Environment Operations Act 1997, Protection of the Environment Operations (Noise Control) Regulation 2017</i>	The project will be required to manage construction noise in accordance with the Interim construction noise guideline (2009) and consider noise associated with the project in accordance with the Noise Policy for Industry (2017).

Matter	Statutory requirements	Relevance to the project
	<i>Marine Estate Management Act 2014</i> and NSW Marine Estate Management Strategy 2018-2028	The two lease areas are not located within a marine park or aquatic reserve, and vessels servicing the lease areas will not travel through marine park or aquatic reserves; therefore section 55 of the <i>Marine Estate Management Act 2014</i> does not need to be considered. However, the EIS will need to consider potential impacts to marine biodiversity including: • <i>NSW Marine Estate Management Strategy 2018 – 2028</i> (NSW Marine Estate Management Authority 2018) • <i>NSW Marine Estate TARA final report</i> (BMT WBM Pty Ltd 2017)
	<i>Heritage Act 1977</i>	The EIS will consider the nearest heritage site to Pambula Beach which is the <i>Empire Gladstone</i> (heritage site ID 1521, Latitude: 36.9523 Longitude: 149.9465 AGD66) approximately 1.5km to the south-east of the site at a depth of approximately 12m. This wreck is currently not protected under the <i>Heritage Act 1977</i>. Impacts or damage to shipwrecks in proximity to the two lease sites are not anticipated as part of the project.
	<i>National Parks and Wildlife Act 1974</i>	The project is not located within any national park.
	<i>Underwater Cultural Heritage Act 2018</i>	Sea Health Products will provide a notification of the discovery of any suspected underwater heritage identified during the proposed action within 21 days of the discovery.
	<i>Waste Avoidance and Resource Recovery Act 2001</i>	The project will consider the objects of the <i>Waste Avoidance and Resource Recovery Act 2001</i> in the EIS, especially in terms of terms of the

Matter	Statutory requirements	Relevance to the project
		Environmental Management Plan to be developed and potential impacts of wastes generated from the commercial production of seaweed on humans and the environment. At this stage of the project these potential impacts are considered negligible.
	<i>Roads and Traffic Authority Guide to Traffic Generating Developments (2002)</i>	This document provides guidance for development proponents on how to assess the traffic, parking, and access impacts on roads for a proposed development. This guideline will be considered when assessing potential impacts to roads, traffic, and access for the project.

4 Project

4.1 Overview

Sea Health Products is seeking approvals and consent for the construction and operation of two 30-hectare commercial marine aquaculture leases for seaweed farming off Haywards Beach, approximately 3 km north of Bermagui (Lease number: AL21/029), and in Merimbula Bay, approximately 1.5 km east of Pambula Beach (Lease number: AL21/031).

Once the approvals are obtained, including aquaculture permits and leases, a 1-hectare trial will be established at both leases for the first year. Once the 1-hectare trial is successful, the operations would scale to 5 hectares in the following year (year 2) at each site and then 10 hectares (year 3), 20 hectares (year 4), and full production of 30 hectares after 5 years.

Harvested kelp will be transported to the existing land-based processing facility at Tilba Tilba where it will be sorted on a stainless-steel table, washed with fresh water, dried using sunlight on racks and then milled following drying. There are existing storage facilities for the processed product and road access to the site.

The ultimate product will be dried granulated or powdered kelp for food and cosmetics. Sea Health Products is currently working with the CSIRO to develop new product lines including freeze dried and fresh frozen kelp and require additional biomass to facilitate this.

4.2 Project design and construction

4.2.1 Operating hours

Construction times may vary with prevailing weather conditions and seasonal daylight hours depending on the time of the year; however, most operations would likely occur between 6:00 am and 6:00 pm. During summer for example, main operational activities may commence early in the morning to avoid the strong north easterly and southerly winds that often prevail during the afternoons in this region.

4.2.2 Project design and construction

The most common method used globally for farming kelp is the longline method and this is the method that will be used in this proposal. Longline infrastructure consists of a mooring system, longlines and depth maintenance or droppers.

The infrastructure will be designed by a suitably qualified and experienced engineer to ensure they are designed to withstand significant weather events.

The Bermagui lease areas will be constructed first, then the Pambula Beach lease area would be constructed. During construction, one boat will be used with approximately 1 to 4 return trips per day over a month, but it is likely construction will only take 1 week. The boat will travel from either Bermagui Wharf or Eden Wharf during this construction process. Local existing commercial boat operators will be utilised to undertake the construction work.

There are two phases to constructing the farm.

- 1) The first phase is setting the moorings which will involve the installation of screw anchors or concrete block anchors by a suitably qualified contractor. The mooring system consists of anchors at each secured length of chain and rope, connected to the main backbone rope. The size of the primary and smaller stabilising anchor blocks is dictated by the weight of the farmed product, the overall length of the longline and the site's wave climate, which will be further explored in the EIS. A suitable boat with commercial divers will be chartered for the construction of the farm and installation of the moorings.

- 2) The second phase is setting and seeding the long lines. The long lines are suspended 3-5 metres below the surface using a series of buoys tied into weights to maintain this depth. The number of buoys used along each longline varies, depending on the growth stage of the stock. Buoys will be black to reduce visual amenity impacts (Figure 23). Longlines are typically positioned 10 m apart depending on the prevailing sea conditions at the lease site and pulled taut to optimise growth and reduce interactions with marine mammals (refer to Figure 24 and Figure 25).



Figure 23. Example of a mussel farm in Eden and the potential visual amenity impacts for the lease areas for the project

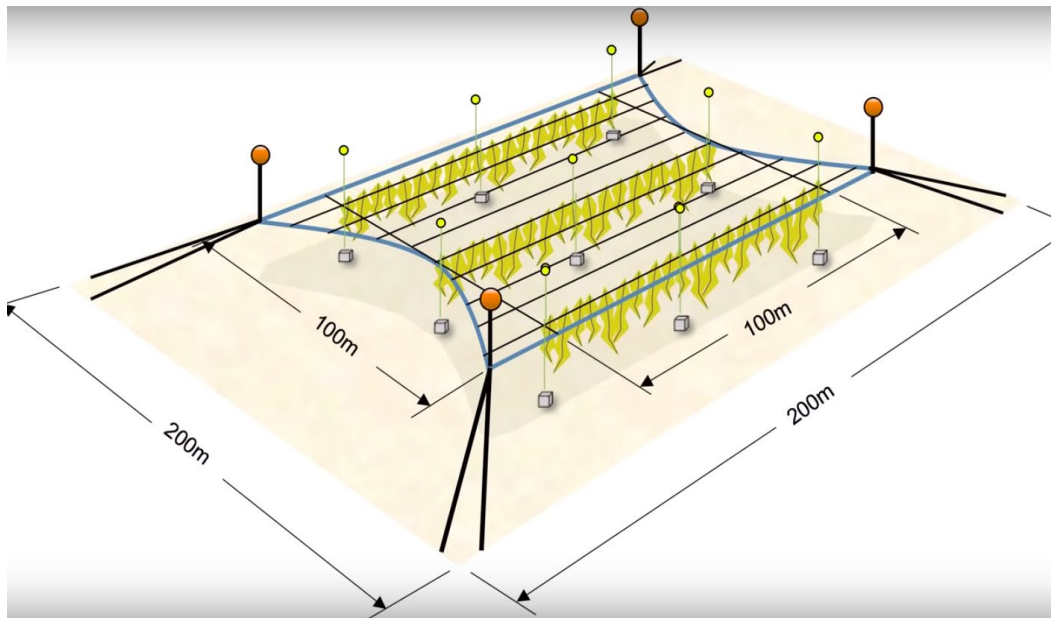


Figure 24. Example schematic of a typical seaweed long line cultivation infrastructure

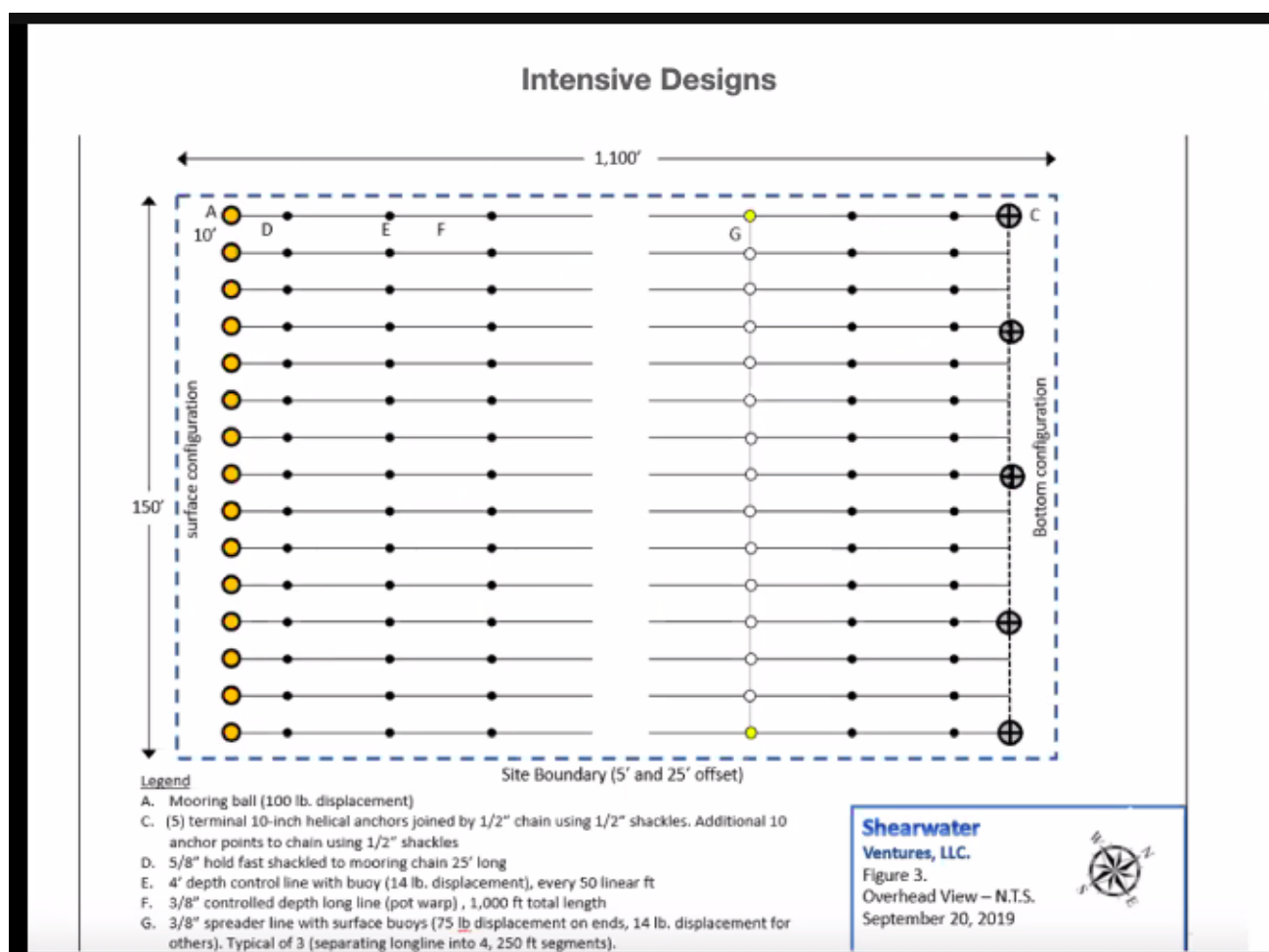


Figure 25. Example schematic of a typical seaweed long line cultivation infrastructure viewed from above

4.3 Operations

Operations for the project will be largely guided and based on the existing USA Ocean Approved kelp farming manual available here:

<https://usermanual.wiki/Document/OceanApprovedKelpManualLowRez25255b125255d.1722116382/view>

4.3.1 Operating hours

Times of operation, maintenance and monitoring activities will vary with prevailing weather conditions and seasonal daylight hours depending on the time of the year; however, most operations would likely occur between 6:00 am and 6:00 pm. During summer for example, main operational activities may commence early in the morning to avoid the strong north easterly and southerly winds that often prevail during the afternoons in this region.

4.3.2 Biosecurity

Ecklonia radiata is an endemic species to the region and prevalent throughout Australia. Seed stock is sourced from within 50km of the lease sites under the existing permit under the *Fisheries Management (Aquaculture) Regulation 2017* for the collection of marine vegetation for commercial purposes (permit number OUT20/9256). The seed stock will be grown in a hatchery with strict biosecurity procedures, including sterilised sea water to 0.5 microns and UV sterilisation. This approach will minimise the risk of introduction of exotic pathogens and pests into the surrounding region.

No processing of the seaweed will occur on the proposed aquaculture lease. Once the seaweed is harvested, it is placed in large plastic bins on the boat which are sealed for transport via truck to the processing facility at Tilba Tilba. Any harvesting for human consumption will be done in accordance with NSW Food Authority requirements.

As part of the project a biosecurity plan for the lease areas will be developed, including guidelines and protocols for surveillance regimes and monitoring, how to reduce stress to stock, the implementation of strict husbandry practices, the reporting of notifiable aquatic diseases and the removal of biofouling.

4.3.3 Cultivation

One of the biggest barriers to the development of kelp farming in Australia is the lack of understanding of breeding cycles of our unique species. Sea Health Products has worked collaboratively with researchers and has recently had success with the cultivation of juvenile kelp gametophytes and sporophytes.

Within the lease areas the macroalgal species Golden Kelp - *Ecklonia radiata* will be cultivated. Sea Health Products have an existing permit under the *Fisheries Management (Aquaculture) Regulation 2017* for the collection of marine vegetation for commercial purposes (permit number OUT20/9256). This permit allows the collection of live and detached kelp (*Ecklonia radiata*) and crayweed (*Phyllospora comosa*) for commercial purposes from ocean beaches between Palm Beach and the NSW/VIC border. Specific permit conditions include:

- a) gather dead brown kelp (*Ecklonia radiata*) and cray weed (*Phyllospora comosa*) marine vegetation that is fully detached from the substrate for commercial purposes above the mean low water mark from ocean beaches between Palm Beach (Sydney) south to the NSW/VIC border (Excluding Marine Park sanctuary zones, habitat protection zones, aquatic reserves, intertidal protected areas, national parks or Aboriginal areas dedicated or reserved under the National Parks and Wildlife Act 1974); and
- b) gather 10 live reproductive *Ecklonia radiata* individuals per sampling event for 5 events, totalling 50 individuals over the life of this permit, from ocean waters between Palm Beach (Sydney) south to the NSW/VIC border (Excluding Marine Park sanctuary zones, habitat protection zones, aquatic reserves, intertidal protected areas, national parks or Aboriginal areas dedicated or reserved under the National Parks and Wildlife Act 1974);

Using this permit, Sea Health Products will utilise the existing laboratory facilities at the land-based facility at Tilba Tilba to germinate the sporophytes and seed the 100m of lines from Bermagui and Pambula (Figure 26). Further details on this process are available in the USA Ocean Approved Kelp farming manual available here:

<https://usermanual.wiki/Document/OceanApprovedKelpManualLowRez25255b125255d.1722116382/view>

Juvenile sporophytes on the lines will be transported in chilled storage in trucks from the land-based facility at Tilba Tilba to Bermagui or Eden Wharves for installation within the lease areas.

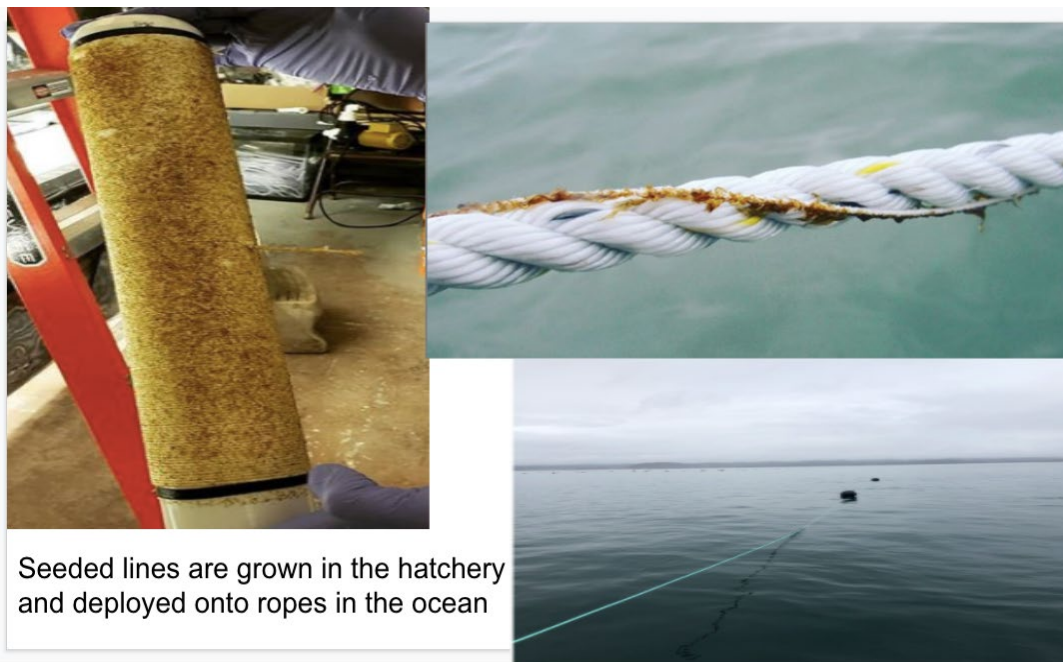


Figure 26. Seeded lines grown in the hatchery and deployed on the long lines in the lease areas

4.3.4 Harvesting

Sea Health Products will contract suitably qualified persons to assist with establishment of the farm, deployment of infrastructure, seeding of lines and harvesting. Kelp will be harvested every six months at the lease site with the rope being removed from the water and cut off using a sharp knife into plastic tubs. The tubs will then be transported by boat to Eden or Bermagui Wharf, where it will be removed from the boat into a truck using a crane. Local existing commercial boat operators will be utilised to undertake the harvesting work.

One boat will be used for harvesting of the seaweed with approximately 1 return trip per day during harvesting periods (two months) when both lease areas are 30 hectares in size (maximum). There will be a two-week gap between harvesting trips i.e., 1 return trip every two weeks.

Kelp will be transported to the existing land-based processing facility at Tilba Tilba where it will be sorted on a stainless-steel table, washed with fresh water, dried using sunlight on racks and then milled following drying. There are existing storage facilities for the processed product and road access to the site.

The ultimate product will be dried granulated or powdered kelp for food and cosmetics. Sea Health Products are currently working with the CSIRO to develop new product lines including freeze dried and fresh frozen kelp and require additional biomass to facilitate this.

4.3.5 Transport

Seeded lines will be transported in one cold storage truck from the hatchery at 265 Corkhill Drive, Tilba Tilba to Bermagui wharf or Eden wharf for installation on the long lines within the lease areas. The transport routes for these activities are presented in Figure 28 and Figure 29.

Copying successful overseas models', kelp seedlings will be deployed in Autumn (late March) and will grow over winter. Growth rates will be monitored using underwater real time cameras, and kelp will be harvested in November. This will once again involve the use of a suitable boat with a crane to harvest the kelp and transport back to the dock (refer to Figure 29). From the dock at Bermagui wharf or Eden wharf, the wet kelp will be transported to the working depot in Tilba Tilba for processing. This will involve one truck travelling every 2 to 3 days harvesting one tonne of seaweed per day and the harvest will be staggered over several weeks. The transport routes for these activities are presented in Figure 28 and Figure 29.



Figure 27. Example of boat with crane utilise for harvesting

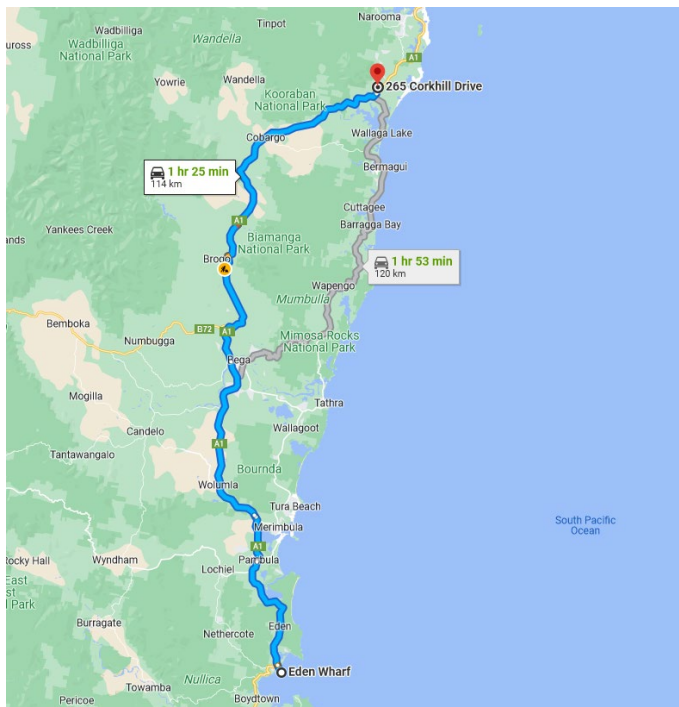


Figure 28. Transport route from Eden Wharf to existing processing facility at Tilba Tilba via the Princes Highway

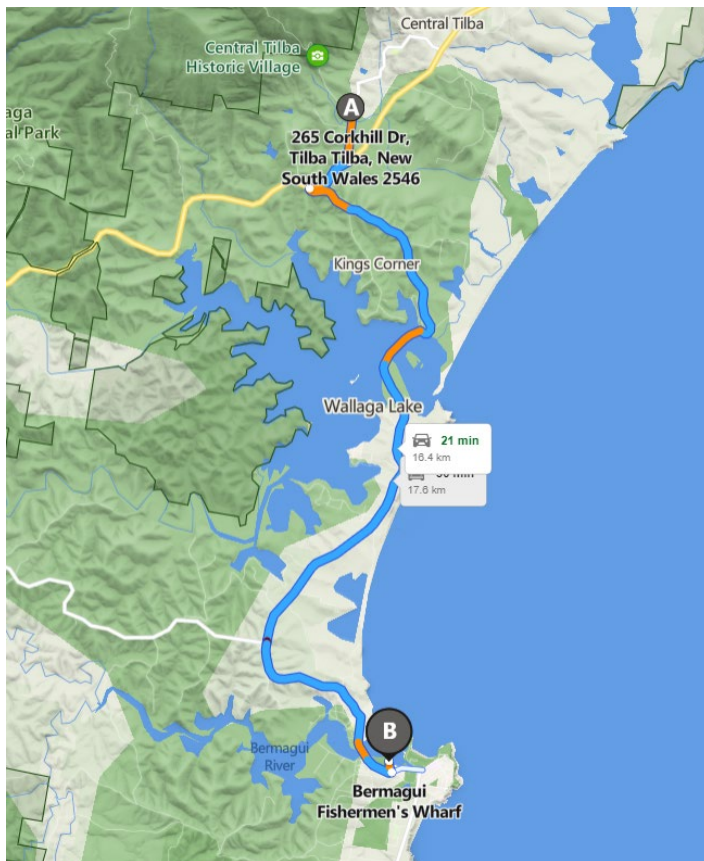


Figure 29. Transport route from Bermagui Wharf to existing processing facility at Tilba Tilba via Bermagui Road and Wallaga Lake Road

4.3.6 Maintenance and monitoring requirements

Once installed the long lines will be monitored using real-time monitoring and cameras to ensure any potential issues (i.e. fauna entanglement, pest invasion, or damage to longlines) can be quickly rectified through a site visit. The in-situ monitoring equipment will also record water quality parameters and swell.

The leases will be visited monthly (one return trip per month) via boat during the 6-month growing season for a site inspection to examine the growth rates and ensure infrastructure is in good working order. Ropes will be replaced every 12 months or when necessary.

No nutrient or additional feed will be utilised as part of the project. No waste will be generated at the time of harvesting. The rope is lifted from the water and harvested into tubs using a sharp knife. The tubs are then craned into the truck and transported to Tilba Tilba for processing. A routine monitoring program will also be undertaken to assess the potential impact of organic material deposition (e.g., biofouling) on benthic fauna under or adjacent to the longline infrastructure. Fisheries NSW currently requires that approved marine aquaculture projects undertake a benthic monitoring program to evaluate any impacts on the benthic environment. The monitoring program must consider total organic carbon (TOC) levels and the benthic organisms within the substrate under the aquaculture farm and at control sites. To date no significant impacts have been recorded under previous or current marine aquaculture farms in NSW. The benthic monitoring program will commence with samples being taken prior to installation of the longline infrastructure and then yearly or as determined thereafter.

There will be no chemicals utilised as part of the seaweed operations or maintenance. Biofouling of ropes is not expected to be a significant issue given the frequency of rope replacement. However, if removal of biofouling is required freshwater and a pressure cleaner would be used. The boats undertaking any work at the lease sites would have suitably qualified staff undertaking the work and spill kits on the vessels.

4.3.7 Workplace health and safety requirements

There are a number of potential work health and safety (WH&S) hazards associated with the construction, deployment and operation of the commercial seaweed aquaculture leases. The main hazards include construction and deployment activities, service and maintenance activities, navigation issues, contamination of stock and the environment, and waste disposal.

The risks associated with WH&S matters during the various stages of the commercial seaweed aquaculture leases is thought to be 'low' when considered in context with the Environmental Management Plan (EMP) that will be implemented to minimise potential hazards and to ensure that all staff personnel and the other waterway users are made aware of their obligations under the *Work Health and Safety Act 2011* and the *Fisheries Management Act 1994*.

4.3.8 Environmental Management Plan

Commercial aquaculture lease operators are required to implement an EMP which outlines the management practices that will be employed to manage general day to day issues such as:

- Meeting statutory and other obligations including consents, licences and approvals;
- Waste disposal procedures, including dead stock, biofouling, obsolete infrastructure and domestic garbage;
- A maintenance and inspection program of longline infrastructure to ensure compliance with taunt rope objectives and structural integrity of the infrastructure;
- A vessel and equipment maintenance program to ensure equipment is functioning efficiently;
- Disease and pest management procedures;
- WH&S requirements;
- Navigational safety;
- Water quality and benthic monitoring procedures to monitor potential environmental impacts; and
- Marine animal interaction monitoring and protocols to deal with incidents.

An EMP will be developed for the project to ensure that the commitments in the EIS and any approval or licence conditions are fully implemented. It will consist of a series of the sub-management plans, monitoring programs and protocols that address the potential environmental impacts identified. The objectives of the EMP are to ensure that the leases are sustainably managed and that their operation does not have a significant impact on the environment, surrounding communities or staff.

4.4 Decommissioning

In accordance with the provisions of the *Fisheries Management Act 1994*, the Sea Health Products operating the commercial seaweed aquaculture leases will be authorised for their activities under an aquaculture permit and lease/s. A draft decommissioning management plan will be prepared as part of the project.

All aquaculture farmers in NSW who hold a class A aquaculture permit and any Class 1 and/or Class 2 lease are required to enter into an Aquaculture Lease Security Arrangements (bonds) arrangement with NSW DPI to provide security for their aquaculture leases (DPI 2022).

It is a condition of the aquaculture permit that all infrastructure is removed from the lease area/s if operations cease. Fisheries NSW can also contract clean-up of leases and recover costs from the leaseholder. If an operator is not able to meet these payment obligations the Bond will be utilised.

Potential impacts to benthic substrates associated with the project and the screw anchors are expected to be minimal and the sandy substrate should naturally regenerate over time with current movements. However, if potential adverse impacts associated with the project are identified rehabilitation would be completed to address these issues.

4.5 Alternatives considered

Land based aquaculture is currently utilised to grow green seaweed species (*Ulva lactuca*) on the south coast. Further information regarding this project is available here: <https://www.phycohealth.com/pages/know-us>

However, for the golden kelp species proposed to be cultivated for this project land-based aquaculture is currently not a feasible option as it requires the upwelling of nutrients and tidal flow of open ocean, as well as sufficient depth to grow.

Alternative lease locations were considered along the south coast of NSW. However, the current lease locations selected were deemed to be ideal for the project as they pose a minimal environmental impact (discussed further in section 2.4) and are at least 1 km from nearest residential areas and hence pose minimal visual or other amenity impacts.

The potential environmental, social, economic, and cultural risks posed by the project are very low (discussed further in section 6). The proposed project strongly aligns with the vision of the NSW MWSAS (NSW Department of Industry 2018), which states: *The vision for the marine aquaculture industry in NSW is for a thriving, economically and environmentally sustainable industry that meets future demands for high quality seafood supply for the state and creates economic opportunities in regional NSW.*

There is a demand for seaweed which is currently unable to be met through hand-harvests storm-cast kelp. The project also aligns with the NSW DPI Strategic Plan 2019-2023 objectives to increase the value of NSW primary industries by 29% by 2023. If the current development was not supported this would be a key loss to the primary industry sector and employment opportunities within the south coast of NSW.

5 Community and stakeholder engagement

5.1 Approach

As a family-owned business local to the area and well-known in the community, broad support is critical to project success. For this reason, a comprehensive engagement approach is proposed. This process meets and potentially exceeds what may otherwise reasonably be deemed as being proportionate for a project of this scale and nature and as per *SSD Guidelines – Preparing a Scoping Report - Appendix A* (DPIE 2021); *Undertaking Engagement Guidelines for State Significant Projects* (DPIE 2021). The consultation process is aligned with - and guided by - the objectives of the *Community Participation Plan* (DPIE 2019) - see text box for key consultation principles that underpin the approach.

Initial and informal engagement undertaken over the past three years shows strong interest, support, and enthusiasm for the proposal from the general public and local businesses (including a local sea kelp business owned by Traditional Owners of the Yuin Nation). Global, national and local scientific communities with interests in marine ecology and climate change mitigation have also shown strong support for the project and are excited by the prospect of expanding knowledge and capabilities in seaweed propagation and production.

Consultation principles

- Open and inclusive – ensuring everyone has a chance to learn about the project and building strong partnerships
- Easy to access – making project information readily accessible
- Relevant – being clear on benefits and impacts of the project
- Timely – starting the engagement early in the process and keeping everyone informed
- Meaningful – giving genuine consideration to community input

(as per the objectives of the Community Participation Plan, DPIE 2019)

5.1.1 Engagement stages

Project-specific engagement will take place early in the formal EIS process, and prior to official public exhibition of the draft EIS. The following key stages for the engagement have been identified from the *SSD Guidelines – Preparing a Scoping Report - Appendix A* (DPIE 2021) and *Undertaking Engagement Guidelines for State Significant Projects* (DPIE 2021):

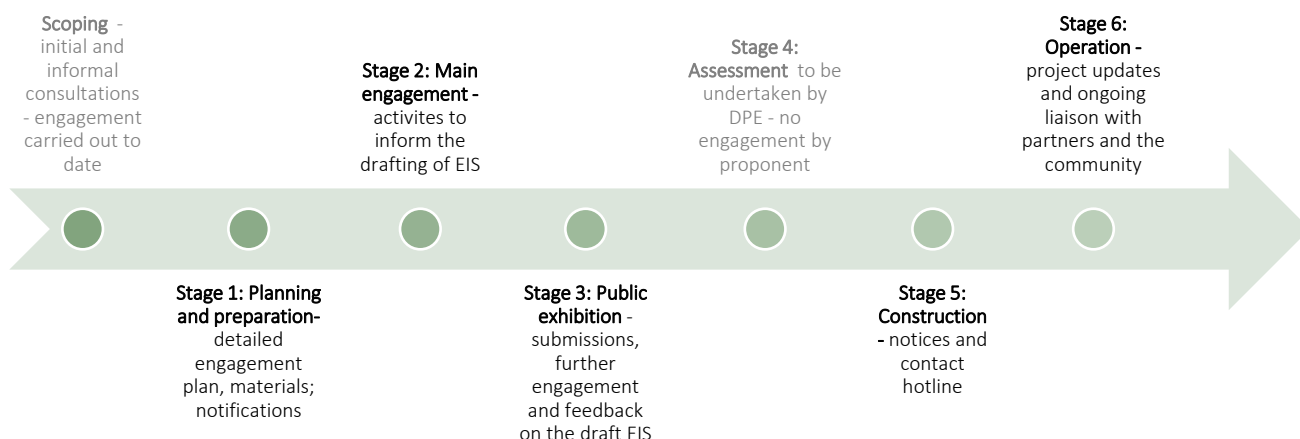


Figure 30 Overview of engagement stages

5.1.2 Stakeholder overview

An initial overview of the key stakeholder groups, likely interest in the project and intended levels of engagement is provided in Table 7 and described below in more detail in terms of consultation undertaken to date as well as proposed future engagement. This initial stakeholder list and map will be developed and confirmed in the detailed engagement plan to be prepared at the planning stage for the EIS.

Table 7 Overview of key stakeholders

Engagement Group	Likely interest in the project	Key stakeholders – may include and not be limited to	IAP2 level of engagement
Traditional Owners and First Nations people	- Natural and cultural heritage - Local economic opportunities	Yuin Nation Traditional Owners South Coast Seaweed (a local kelp business owned by Traditional Owners of the Yuin Nation, Sarah and Hames Thomas) Merrimans Local Aboriginal Land Council, Wallaga Lake South Coast People (native title claimants) Broader First Nations community	Inform Consult Involve
Local residents	Local amenity, including visual impact, traffic and noise	Refer to Figures 9 -12 below for residential areas near proposed sites.	Inform Consult Involve
Water users (commercial and recreational)	- Water quality and seafloor impacts - Marine fauna entanglement - Disease and pests - Navigation	- Oyster and mussel farmers - Bermagui Fishermen's Co-operative - Recreational users (e.g. individuals or groups with interests in sailing, fishing, kayaking, swimming) - Bermagui Motor Yacht Club - Extreme Fishing Charters Bermagui - Hot Fishing Charters (Bermagui) - Bermagui Big Game Anglers Club - Pambula Fishing Club - Merimbula Fishing Club	Inform Consult Involve
Local community and businesses groups	- Increased local economic activity - Promotion of the South Coast as a destination - Employment opportunities - Educational opportunities - Community resilience and bushfire recovery - Sense of pride and hope after the Black Summer Bushfires and pandemic	- Bega Chamber of Commerce - Bermagui Area Chamber of Commerce and Tourism - Merimbula Tourism Inc. - Local schools - Pambula Area Planning and Progress Association (PAPPA) - Local community groups such environmental interest groups, including the South Coast Producers Association, and Country Women's Associations	Inform Consult Involve
Government agencies and key stakeholders	- Environmental protection - Community resilience and bushfire recovery - Climate change mitigation and carbon sequestration - Local economy and tourism - Traffic management - Waste management	- Bega Valley Shire Council - Transport for NSW - NSW EPA - NSW DPI - NSW DPIE - NSW Food Authority	Inform Consult Involve

Engagement Group	Likely interest in the project	Key stakeholders – may include and not be limited to	IAP2 level of engagement
		• Environmental community groups, e.g. Australian Conservation Foundation, Nature Conservation Council, WWF • NSW Department of Regional NSW, including Local Land Services • NSW Department of Enterprise, Investment and Trade, including Investment NSW • NSW Department of Premier and Cabinet • Marine Estate Management Authority • Federal Government • Commonwealth Fisheries Association (peak body organisation) • Professional Fisher’s Association (peak body organisation) • Recreational Fishing Alliance of NSW (peak body organisation)	
Science community and other producers	• Knowledge sharing • Continuous improvements in breeding and propagation techniques • Accelerated growth of seaweed industry in Australia • Understanding and documenting environmental benefits from kelp production • Education and promotion of environmental, health and nutrition aspects of kelp products	• University of Technology Sydney (namely UTS Deep Green Biotech Hub which is part of the C3 Climate Change Cluster) • University of Tasmania • Sydney Institute of Marine Science • Marine Bioproducts Cooperative Research Centre • Safe Seaweed Coalition • Ocean Rainforest - Faroe Islands • Cascadia seaweed - Canada • Greenwave USA • The Seaweed Company (Ireland)	Inform Consult Involve
Wider community and visitors	• Environmental protection • Climate change mitigation and carbon sequestration • Innovative regional development • Resilience and recovery stories and inspiration	General public across Australia with an interest in community-led climate change initiatives	Inform Consult

Residential areas of interest to the consultation

The figures below indicate residential land use areas in the vicinity of the site locations (approximately within a 4 -5 km radius of sites). Site locations are roughly indicated by the pin icon and areas of interest to the consultation are indicated by the dotted shapes. These are approximations only and subject to confirmation during the EIS stage.

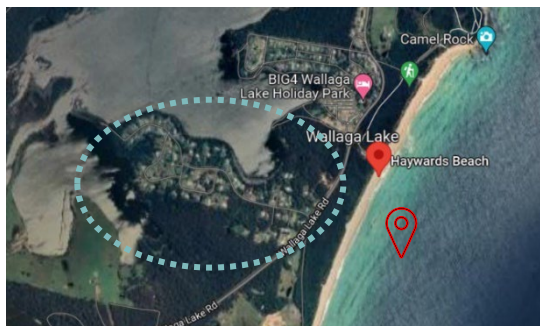


Figure 31 Bermagui residential land use near harvesting site (not to scale)

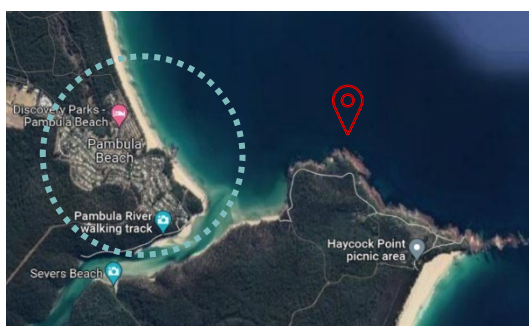


Figure 32 Pambula residential land use near harvesting site (not to scale)

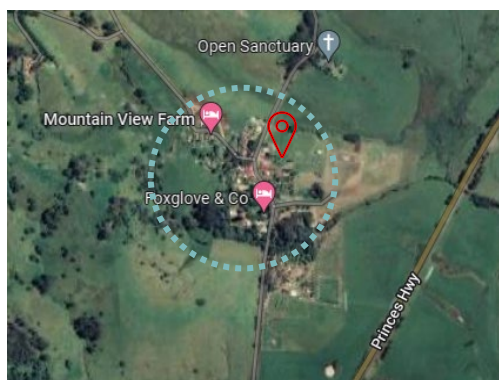


Figure 33 Land based processing site, Corkhill Road, Tilba Tilba (not to scale)



Figure 34 Land based site - docking, Eden Wharf (not to scale)

5.2 Engagement carried out to date

Consistent with the SSD Guidelines and with consideration to the small scale and nature of this project, initial informal engagement about kelp farming and seaweed products generally has been undertaken with the bulk of project specific engagement planned to be scoped out in detail during Stage 1 of the engagement process. The main engagement activities will be undertaken during Stage 2 of the EIS process.

5.2.1 Community views

Over the past 3 years, Sea Health Products has built a strong reputation as being an environmentally friendly company with a social conscience. This reputation has been strengthened through regular presence at local markets as well as through a range of speaking and educational opportunities, which have provided an opportunity for engaging with the community about the vision of introducing kelp farming to the region. The vision has been received with enthusiasm and strong support as the south coast community has experienced first-hand the dramatic impact of climate change with the Black Summer Fires of 2019/20 and still are trying to recover economically from the repercussions. The south coast community is environmentally conscious and climate change literate and there is a broad recognition of the environmental and health benefits of kelp.

Engagement to date shows strong support for the proposal to establish kelp farming on the south coast, with only very limited localised reservations or concerns expressed (see Table 4 below). The proposal is widely regarded as an

opportunity to recover economically and socially from the Black Summer bushfires and promote the south coast region as an eco-friendly and climate conscious destination.

This broad support base is most markedly demonstrated through the award of both peoples' choice and judges' choice awards at the Bega Valley | Accelerate 12-week business accelerator program from August to November 2019. At the end of the program, the Sea Health Products pitched to an audience of approximately 200 local community members and went on to win both awards for the proposal to introduce kelp farming to the south coast of NSW.

Sea Health Products is well known within the local south community. Aside from a strong personalised network resulting from the family-owned business' local presence at local markets and speaking events, the company has had significant media awareness, especially around the time of being awarded the Churchill Fellowship in 2019. Sea Health Products has appeared on ABC radio several times and is a regular guest speaker at various community groups such as Garden clubs, U3A, local schools, science week webinars.

As the demand for kelp products is increasing locally and worldwide while local supply of kelp is decreasing, there is also keen support from local businesses for opportunities to increase supply of kelp locally (e.g. through wholesale of unprocessed kelp).

5.2.2 Key matters for further engagement and consideration in the EIS

Based on the consultation undertaken to date, early indications of community views have been grouped below in terms the key matters that will be further assessed in the EIS and as part of future engagement.

Table 8 Community matters for further consideration and engagement

Community matters	Activities undertaken to date	Community views expressed	How this will be addressed in further engagement and in the EIS
General sentiment toward kelp farming	Bega Valley Accelerate Program (2019) – program presentation.	Strong local endorsement for the project overall as evidenced through the granting of the People's Choice Award at the Bega Accelerate program.	Promotion of the project and its environmental and socio-economic benefits. Continued broader education about the environmental and health benefits of kelp.
Local amenity	General community conversations during market days and through social networks.	Some local residents have expressed a concern that visual amenity of local residents (near the water-based sites) may be impacted by views to the buoys.	Visual and any other local amenity impacts determined by the SEARS will be assessed as part of the EIS. The engagement events (drop-in sessions) communications materials will provide visual examples and photos of the dark coloured buoys as likely to be seen from nearby residential properties.
Environmental impacts	- World tour (Faroe Islands, Canada, USA, Ireland) to consult with existing seaweed aqua farming enterprises to understand breeding, propagation techniques as well as identify any impacts as well as measures to protect or enhance marine ecology. - Initial conversations with water users and broader community during markets and over a period of approximately three years.	Global, regional and local scientific communities have all expressed enthusiasm for the project, namely for its marine regenerative potential as well as a pilot for carbon sequestration at scale to deliver climate change mitigation outcomes. In general, there is community enthusiasm and support for the project. However, a few people have expressed concern that there may be risks to the marine environment (e.g., that there is a risk that ropes may cause entanglement; or there may be issues regarding water quality.)	Environmental impacts will be assessed as part of the EIS. Communication materials and FAQs for engagement during the EIS drafting stage will provide specific information regarding environmental aspects and management approach, particularly in relation to kelp's regenerative capacity of absorbing nutrients from the water, absorbing Co2 and reducing ocean acidification. Communication materials will note that the operations will not involve use of chemicals and that any waste will be disposed of in an

Community matters	Activities undertaken to date	Community views expressed	How this will be addressed in further engagement and in the EIS
			environmentally sensitive manner. FAQs will also provide references to evidence regarding entanglement.
Socio-economic impacts	General community conversations during market days and through local and professional networks and talks.	General perception that the proposal presents a hopeful solution for climate change action as the region has been devastated by the Black Summer bushfires. It is also seen to be a great opportunity to create a new industry and regional employment. Sea Health Products receives regular email from people interested in becoming kelp farmers and wanting assistance with this.	Assessment of socio-economic impacts to be undertaken as part of the EIS.
Aboriginal cultural heritage and socio-economic interests	Meetings with the First Nations owned company, South Coast Seaweed.	South Coast Seaweed is supportive of the proposal and has expressed interest in purchasing wholesale seaweed once production commences.	Following culturally appropriate protocols, the engagement for the EIS will seek views and inputs from Traditional Owners and local First Nations businesses and wider community.

5.3 Future engagement during EIS stage

The future engagement for the EIS stage is outlined below. Individual engagement events will be further built out and adjusted as the project progresses and will be subject to the development of the detailed engagement and communications plans during the planning stage of the EIS.

Activity	Description	Target audience
STAGE 1: PLANNING AND PREPARATION		
Engagement Plan	- Detailed engagement schedule, event plan and resourcing plan - Comprehensive stakeholder map, building on the stakeholders identified in this document. - Additional stakeholders will be identified through: - Early engagement with Council - Background review of Council and government agencies engagement plans and documents of relevance to the region - Desktop research - Initial engagement with Traditional Owners to identify an appropriate approach for engagement with local First Nations people and groups	Internal document
Communications Plan	- Schedule of notices and communications activities - Materials for the engagement, such as: - Promotional materials (e.g. posters, business cards with further reference to website that will be updated as appropriate with project information and updates and feedback forms) - Maps, photos and diagrams for public display at drop in sessions - Online and social media content, explaining the project - Frequently Asked Questions (FAQs) for uploading on websites (Kelp Lab and https://www.seahealthproducts.com.au/kelp)	Internal document

Activity	Description	Target audience
Initial meeting with local council	Understanding Council context and opportunities for synergies and cooperation at a regional level	Bega Valley Shire Council
Initial meeting with government agencies	Consideration of key matters relating to the proposal and identification of potential mitigation measures as well as engagement and communications approach	Government agencies
On-country meetings with Traditional Owners	- Understanding local Aboriginal cultural and natural heritage and identifying any opportunities for acknowledgement and recognition - Identifying appropriate engagement opportunities and key stakeholders for further engagement	Traditional Owners of the Yuin Nation
STAGE 2: MAIN ENGAGEMENT		
Promotional materials – e.g. posters, emails, flyers	- Visually catchy materials to promote the project and upcoming engagement events - Materials may include posters, flyers, business cards, letters - The communications materials will provide a link to the website, where further information will be made available, namely FAQs, key messaging. The materials will be clear on the level of influence engagement will have - All materials will be written in plain English and be jargon-free so as to cater for a broad audience - The materials will explain how community feedback will be documented and considered. It will seek to encourage community members to have a say, share local knowledge, and voice any concerns that the EIS needs to consider early in the process	All engagement groups
First Nations meetings	Meetings with First Nations groups as deemed appropriate and relevant	First Nations
Drop-in sessions on site	- Information stalls at convenient locations at each of the two sites in Bermagui and Pambula - Visual displays and maps - Demonstration buoys to test visual impact	Local residents (see figures 9 – 10 above)
Online webinar – Q&A session	- General information session, consisting of a briefing and mapping and providing an opportunity to ask questions - Promoted to local special interest groups such as local chambers of commerce or community environmental groups - Open to the general public	Local community groups and wider public
Stakeholder briefing(s)/works hop(s) (as required)	To be further defined during the engagement planning stage.	- Government agencies - Key stakeholder groups
Project updates	- Update of websites (Kelp Lab and https://www.seahealthproducts.com.au/kelp) at key milestones of the project, providing educational information and posting any upcoming events - Websites include a mailing list registration form for direct project updates and registrations	All engagement groups
Social media updates and notifications	General information of the project and notifications of any upcoming events	All engagement groups / targeted as appropriate
Other	Any other engagement activity required by the SEARS	To be confirmed
STAGE 3: PUBLIC EXHIBITION		

Activity	Description	Target audience
Drop-in sessions on site	- Information stalls at convenient locations at each of the two sites in Bermagui and Pambula - Visual displays and maps	All engagement groups
Submissions	Update of the websites (Kelp Lab and https://www.seahealthproducts.com.au/kelp) to include a link to DPE major projects page for making submissions	All engagement groups
Submissions analysis and response	Preparation of a submissions report upon close of exhibition period and upon receipt of submissions from DPE.	Internal document
Closing the feedback loop	Report back to engagement participants as appropriate	Previous participants
POST-APPROVAL OF EIS (STAGES4 – 6)		
TBD	Continuous engagement with the community at subsequent stages and at key project milestones of if the project is approved and in line with the conditions of the approval	TBD

6 Proposed assessment of impacts

Potential environmental and socio-economic impacts associated with the project have been considered in terms of site selection, construction, operation and decommissioning. A draft decommissioning management plan will be prepared and assessed in the EIS. A scoping summary table of potential impacts as required under the *SSD Guidelines – preparing a scoping report (Appendix A to the state significant development guidelines November 2021)* (Department of Planning, Industry and Environment 2021) is provided in Appendix B.

6.1 Access – Marine vessels and ports

6.1.1 Lease locations and impacts to navigation and interactions with other waterway users

The degree of impact of aquaculture infrastructure on the safe navigation of vessels and other waterway users in an area depends on its placement in relation to features such as narrow channels, established navigation channels, identified anchorages, recreational and commercial areas, as well as how clearly marked and visible the structures are to other waterway users, particularly during severe weather.

The proposed commercial marine aquaculture seaweed leases are situated in open marine waters and are not located in any recognised navigation channels or shipping port approaches, and are outside naval mooring, transiting, and training areas. The proposed leases are not located in the route predominantly taken by recreational and/or commercial vessels. The proposed areas do not obstruct any recognised yachting courses or significant commercial or recreational fishing grounds.

Transport for NSW require the extremities of aquaculture leases to be marked with lit navigational buoys. The leases must also be marked on navigational charts to aid safe navigation.

Navigation safety in the area of the commercial marine aquaculture seaweed leases will also be maintained by ensuring that all staff partaking in marine vessel transport obtain relevant licences and qualifications, undergo regular training and abide by Transport for NSW regulations and the Australian Aquaculture Code of Conduct.

The Australian Hydrographic Office will be notified of the location of the commercial marine aquaculture seaweed leases, a 'Notice to Mariners' will be issued and official charts will be amended. Transport for NSW will also be notified of the lease locations so relevant publications and maps can be amended to include these.

6.1.2 Movement of marine vessels during construction and impacts on wharf facilities

During construction, one boat will be used with approximately 1 to 4 return trips per day over a month, but it is likely construction will only take 1 week per lease area. The boat will travel from either Bermagui Wharf or Eden Wharf during this construction process.

Existing commercial boat operators and marina facilities in the region would be used for mooring service vessels. Similarly, vehicular traffic associated with the construction and operation of the leases would represent a very small proportion of the total number of vehicles on the public roads on any given day.

6.1.3 Movement of marine vessels during operation and impacts on wharf facilities

One boat will be used for harvesting of the seaweed with approximately 1 to 3 return trips per day during harvesting periods (two months) when the lease areas are 30 hectares in size (maximum). There will be a two-week gap between harvesting trips i.e. 1 day every two weeks.

The leases will be visited monthly (one return trip per month) via boat during the 6-month growing season for a site inspection to examine the growth rates and ensure infrastructure is in good working order. However, additional trips may also be warranted to undertake urgent repairs or maintenance to the lease areas.

Existing commercial boat operators and commercial marina facilities at Bermagui and Eden will be used for mooring service vessels for harvesting and maintenance activities associated with the project.

6.1.4 Further considerations for the EIS

A standard level of assessment is required for marine vessel access and the impacts are expected to be minor.

- Prepare a navigation risk impact assessment in accordance with Transport for NSW (Maritime) requirements. This will include impact of the project activities on the existing Bermagui and Eden wharves.
- Develop a stakeholder engagement plan for the project to capture community concerns in relation to movement of marine vessels during construction and impacts to wharf facilities, as well as the lease locations and impacts to navigation/interaction with other waterway users.
- Consult with Transport for NSW, Bega Valley Shire Council, marina owners, tour operators, commercial fishing companies, recreational and Aboriginal fishers, and the wider community regarding the project and potential impacts.
- Develop an EMP to mitigate any potential impacts on commercial, recreational, and Aboriginal users of marinas and ocean areas.

6.2 Access – Roads, traffic, and parking

6.2.1 Construction and operation access

Vehicular traffic associated with infrastructure construction and operation within the marine aquaculture lease areas would represent a very small proportion of the total number of vehicles on the public roads on any given day.

During construction it is likely that one truck and car will undertake a return trip every 2 to 3 days between the wharf and the processing facility at Tilba Tilba to supply the construction materials for the marine aquaculture lease areas over one month, but it is likely construction will only take one week per lease area. However, additional trips may also be required to undertake urgent repairs or maintenance in the lease areas.

During harvesting one truck will undertake a return trip every two weeks between the wharf and the processing facility at Tilba Tilba and the harvest will be staggered over several weeks.

For the monthly monitoring and maintenance activities of the lease areas, one car will undertake a return trip once a month between the processing facility at Tilba Tilba and the Eden or Bermagui Wharf. However, additional trips may also be warranted to undertake urgent repairs or maintenance to the lease areas.

Hence, the risk of the vehicular traffic associated with the leases having a significant impact on other road users via impeding safe driving or increasing congestion levels on roads, in parking areas, around boat ramps or waste facilities is thought to be 'negligible' when considered in context with the relatively minor increase in vehicular traffic.

6.2.2 Further considerations for the EIS

A standard level of assessment is required for road traffic access and the impacts are expected to be minor.

- Assess potential impacts to roads, traffic and parking during construction and operation of the project. A specialist technical study is not recommended for the project as changes to traffic associated with the project are expected to be minor.
- Develop and implement a stakeholder engagement plan for the project to capture community concerns in relation to roads, traffic, and parking during the operational phase of the project.

- Include measures in an EMP to mitigate any potential impacts on road users.

6.3 Amenity – Noise

6.3.1 Construction noise

Noise will be generated in conjunction with the construction, transport, and deployment of the longline infrastructure. NSW Environment Protection Authority is responsible for the regulation of noise from activities scheduled under the POEO Act. The *POEO (Noise Control) Regulation 2017* also sets certain limits on noise emissions from vessels, motor vehicles and domestic use of certain types of equipment. The proposed activity is not scheduled under the POEO Act.

The Interim Construction Noise Guideline (2009) outlines how impacts from construction related noise are managed. The Noise Policy for Industry (2017) sets assessment noise levels, consistent methods, and best practice measures to manage industrial noise, and is based on the latest scientific research regarding noise's health effects (EPA 2017). These regulations and guidelines will be complied with during the construction and deployment stage of the project.

6.3.2 Noise during operation

The principal source of noise in the marine waters offshore of Bermagui and Pambula Beach is generated by the sea conditions and vessel movements undertaken by existing waterway users. Vessels in the marine waters offshore of Bermagui and Pambula Beach consist of small recreational fishing boats, dive boats, dolphin/whale watching boats, luxury cruisers, and commercial fishing vessels. Noise levels will vary depending on weather conditions, background noise, the equipment used and the season. During the warmer months of the year for example, commercial and recreational vessel traffic increases significantly so noise levels are characteristically greater during this time of year.

The operation of the commercial marine aquaculture seaweed leases will cause a slight increase in noise levels in the marine waters offshore of Bermagui and Pambula Beach due to the movements of the service vessels, on board equipment and incidental noise from personnel. However, as the service vessels will be similar to existing recreational and commercial vessels, the noise generated is not considered to be uncharacteristic of the area. Noise generated by on-board equipment would be minimal.

The projected number of boat and vehicle trips to undertake harvesting, monitoring and maintenance activities for the lease areas would not substantially increase vessel movements in this locality and therefore should not significantly impact on residential housing in proximity to the lease areas.

Industry best practices for noise management will also be employed during the operation of the commercial marine aquaculture seaweed leases to minimise the impacts of noise on surrounding communities e.g., motor driven equipment will be well maintained and noise arresting devices will be fitted where possible.

Operational activities, including vehicular and vessel movements, will be undertaken primarily during daylight hours. Vessel movement and equipment use during the night would predominantly be restricted to responses to emergency incidents (e.g. after storm events).

6.3.3 Further considerations for the EIS

A standard level of noise assessment is required, and the impacts are expected to be minor.

- Assess noise impacts in accordance with the Interim construction noise guideline (2009). Specialist technical study not recommended as noise impacts associated with the project are expected to be minor.
- Develop and implement a stakeholder engagement plan for the project to capture community concerns in relation to noise. This could include on-site notification (e.g. poster) to inform the general community about the project and activities on site.

- Develop EMP to set requirements for managing noise in accordance with the Noise Policy for Industry (2017) and compliance with the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Noise Control) Regulation 2017*.

6.4 Amenity – Visual amenity

6.4.1 Visual amenity during construction and operation

The kelp farm has the potential to impact visual amenity by altering the views of the water from adjacent land areas (O'Hanlon, 2004). This will be in part mitigated by the open ocean site selection which is less intrusive than estuarine or terrestrial based facilities. The design of the kelp farm infrastructure will seek to minimise the visibility of the farm, maximising subsurface infrastructure and maintain low profile buoys and floating structures.

The 3-month construction period will likely have the greatest impact on visual amenity during the project. The nature of these impacts will include marine vessels used to transport and deploy the infrastructure of the farm as well as truck movements to the sites.

Surface vessels on maintenance, harvesting and deployment trips have the potential to impact visual amenity. This impact and potential mitigating actions will be investigated through the EIS process.

Given the small scale of the project, distance to populated areas and the materials used, it is anticipated that risks of impacts on visual amenity are minimal, though the project potentially may be *perceived* by the public to affect visual amenity. Public perception issues will be addressed through the engagement and communication materials (e.g., with photos or visual illustrations of what is proposed), whereby the community are provided with an opportunity to get a sense of the scale of the project. The on-site engagement will use demonstration buoys of similar material and colour as shown in to test public perception on potential for visual impacts.



Figure 35 Example of demonstration buoys used for public engagement¹

This consideration is consistent with the SEARS for the Jervis Bay proposal for commercial shellfish aquaculture leases, which noted the buoys would only incur low impacts on residential properties as well as some moderate visual impacts from a viewing platform on the beach (under calm conditions) and that these impacts effectively could be mitigated through use of dark colours and materials. It further noted that “*potential conflicts with other users and tourist operators should be negligible*”.¹

6.4.2 Further considerations for the EIS

A standard level of visual impact assessment is required, and the impacts are expected to be minor.

¹ State Significant Infrastructure Assessment: Commercial Shellfish Aquaculture Leases, Jervis Bay, NSW (SSI-5657), SEARS, NSW DPIE: Executive Summary page 2 (2014)

- Assess the visibility of the proposed aquaculture leases from urban, residential areas, beaches, and any major land-based vantage points.
- Develop and implement a stakeholder engagement plan for the project to capture community concerns in relation to visual amenity.
- Ensure the design of the kelp farm infrastructure minimises impacts on visual amenity where this is reasonable and practical.

6.5 Biodiversity

There will be no impacts to terrestrial biodiversity as part of the proposed project.

6.5.1 Marine and benthic habitats

The areas proposed for the commercial seaweed aquaculture leases will be sited over sandy substrates and outside of seagrass or rocky reef habitats.

Aquaculture infrastructure displaces an area of benthic and/or pelagic habitat, which varies in extent, depending on factors such as the type of aquaculture, the size of the lease and infrastructure design. The input of organic matter can cause changes to the physical, chemical and biological characteristics of the receiving marine environment (Edgar et al., 2010; Mirto et al., 2011). Notably, when organic waste deposition exceeds nutrient assimilation rates, sediments become anaerobic and the composition of benthic organisms changes, particularly for infauna.

The area proposed for the marine aquaculture leases are primarily comprised of sandy sediments to a depth equal to or greater than 20m (refer to Figure 11 and Figure 16). The impact to these substrates is considered to be negligible, particularly given that there are extensive areas of similar habitat in the adjacent areas and the absence of sensitive habitats in the immediate area surrounding the sites.

The installation of the longline infrastructure will not isolate any habitat area which is considered unique in the direct or wider region and adjacent soft sediment and pelagic habitat is likely to support very similar fauna and flora assemblages to those in the immediate vicinity of the longline infrastructure.

Biofouling on the farm's infrastructure poses a potential risk to the physical, chemical and biological characteristics of the sea floor. As biofouling can impact the farm's yield, it is expected that regular maintenance trips will be made to clear organisms from the farm's infrastructure. This can lead to increased particulate matter settling on the sea floor and changing the benthic fauna beneath the farm. Biofouling is typically higher in the warmer months reflecting increases in larval supply and colonisation rates.

These impacts can be mitigated by implementing a range of operational and maintenance procedures, with a focus on regular removal throughout Spring and Summer. These will be investigated during the environmental impact assessment.

6.5.2 Marine fauna

Marine fauna can potentially be impacted by aquaculture infrastructure. Infrastructure provides potential perches for sea birds or a refuge or foraging area for whales, dolphins, seals, fish and turtles.

Marine fauna can be potentially disrupted by exposure to noise (Aguilar de Soto et al 2016). While noise pollution concerns are typically centred on activities producing intense noises (e.g., seismic pulses or sonar devices), the intensity of vessel traffic that concentrates in near shore coastal zones represents a potential impact (although that risk is considered low). Noise will occur at both kelp farm sites during the construction phase as well as during harvesting and maintenance trips. Vessel movements between the farm sites and boat ramp facilities are likely to range from 0-3 per day during the deployment and harvesting stage. Noise impacts on marine fauna will be considered in the EIS process and measures will be undertaken to mitigate any impacts identified. Mitigating options include the deployment of observers to keep watch for large marine fauna like dolphins, whales, and turtles during peak transport times.

Entanglement or ingestion of anthropogenic debris in marine and estuarine environments are key threatening processes listed under the *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999*. Entanglement refers to the process of fauna becoming caught in the physical structures (e.g., ropes and chains). There are a wide range of species vulnerable to entanglement including sharks, whales, dolphins, turtles and seabirds. The risk of entanglement will be investigated in the EIS process and potential mitigation actions will be employed if needed. A Marine Fauna Interaction Management Plan and a Marine Fauna Entanglement Avoidance Protocol could be implemented if the risk warrants it.

Ingestion of marine debris can result in a range of impacts from increased mortality of vulnerable species to loss of limbs, reduced breeding, and feeding success, increase in infections and illness.

6.5.3 Sensitive ecological values

Based on the preliminary desktop review, it is believed that both lease areas are not proposed to be located over rocky reefs or seagrass beds, however a substrate survey (for example, visual interpretation of acoustic backscatter and hill shaded bathymetry data of the seafloor) will be completed as part of the EIS for the project.

The Protected Matters Search Tool for MNES under the EPBC Act identified TECs, threatened species, listed marine species, as well as whales and other cetaceans, as well as migratory species and ecological features within or in proximity to the aquaculture lease locations (refer to Appendix A). In addition, a search of NSW BioNet Atlas (BioNet 2022) for both lease areas was completed and within a 10km by 10km area there was 800 records and 736 records for animals, plants, fungi, communities, threats, and endangered populations identified for the Bermagui and Pambula Beach lease areas respectively (refer to Appendix A).

The EIS will review these records identified with consideration of the EPBC Act and BC Act, in accordance with:

- Significant Impact Guidelines 1.1 – Matters of National Environmental Significance
- EPBC Act Policy Statement 2.2 – Industry: Offshore aquaculture
- Guidelines for biological survey and mapped data
- Survey guidelines for Australia's threatened mammals, fish, etc.
- NSW DPI Threatened Species Assessment Guidelines (DPI 2008)

The EIS will consider in detail the potential ecological impacts of the project and identify appropriate mitigation actions.

6.5.4 Further considerations for the EIS

A detailed biodiversity impact assessment is required for this project, with a focus on marine ecosystems.

- Design the aquaculture longline infrastructure (such as rope tautness, colour of ropes, etc) to minimise the potential for entanglement and ingestion by marine fauna.
- Develop and implement a stakeholder engagement plan for the project to engage with key State and Federal government departments.
- Undertake a specialist ecological impact assessment, including field investigations. Impacts to wildlife must be considered in relation to the management initiatives and strategies detailed in the *NSW Marine Estate Management Strategy 2018 – 2028* (NSW Marine Estate Management Authority 2018) and relevant threats detailed in the *NSW Marine Estate TARA final report* (BMT WBM Pty Ltd 2017).
- This may involve preparation of a BDAR in accordance with the BAM (DPIE 2020) or a BDAR waiver. The ecological impact assessment will include assessments of significance for threatened species, populations and communities listed under the BC Act, EPBC Act and *Fisheries Management Act 1994* that are predicted or likely to occur in the aquaculture lease areas. Ecological assessments (e.g. under Fisheries Management Act) which do not comply with the Biodiversity Assessment Methodology (BAM) (DPIE 2020) can be included in the BDAR or

waiver as separate chapters or can be in a stand-alone report. The methodology for assessment of ecological impacts for the project will be determined by the suitably qualified person as part of the EIS.

- Conduct substrate survey of both lease areas to confirm what habitat types are present in the region surrounding the proposed aquaculture lease areas.
- Assess if the project is likely to have a significant impact on Matters of National Environmental Significance (MNES) and if a referral is required under the EPBC Act. Determine if the project is likely to be a controlled action under the EPBC Act (DAWE). Consult with the NSW Government to determine if Bilateral approval is appropriate.
- Undertake a substrate survey of both lease areas to confirm what habitat types are present in the region surrounding the proposed aquaculture lease areas and establishment of a baseline condition of benthic habitats.
- Determine if deposition modelling analysis is required (NSW DPI).
- Develop an EMP which will include:
 - Procedures to minimise entanglement hazards and a response plan for entanglement incidences.
 - Specify that construction is undertaken outside of the whale migration season.
 - A fauna interaction management plan, which specifies that staff and contractors involved in the construction must comply with the approved approach distances to marine fauna and observers will be in place during deployment and while travelling to and from leases to minimise potential impacts from noise pollution and vessel strike with marine fauna.
 - Monitoring and recording procedures for all interactions between marine fauna, lease infrastructure, vessels and humans.
- Develop and undertake an environmental monitoring program within and surrounding both marine aquaculture lease areas prior to the commencement of construction to determine existing water quality and trigger limits for relevant water quality parameters during construction and operation of the project.

6.6 Built environment

6.6.1 Land based infrastructure

The proposal for the commercial seaweed aquaculture leases does not involve the construction of any new boating infrastructure, or any foreseeable upgrades of existing road facilities in the Bega Valley Shire Council region.

If the leases are approved, the applicant will be required to comply with local government provisions relating to the siting of land-based activities or use of boat ramps wharves in the area.

The movement of marine vessels between the leases and wharf facilities During the construction stage may range from 0-3 return trips per day to install the longline infrastructure. Once the infrastructure is installed the movement of vessels is expected to be in the range of 0-3 return trips per day to undertake inspections and maintenance. Existing marina facilities in the region would be used for mooring service vessels. Similarly, vehicular traffic associated with the construction and operation of the leases would represent a very small proportion of the total number of vehicles on Bega Valley Shire Council roads on any given day.

6.6.2 Suitability of infrastructure

Longline aquaculture within the marine environment has been undertaken worldwide for more than 40 years. Longline infrastructure is designed and constructed using established engineering knowledge and ongoing research ensures that engineering standards continue to improve. The loss of infrastructure and stock has the potential to cause significant financial impacts to the applicant as well as adverse social, safety and environmental impacts such as amenity impacts to local beaches, boat strike with marine debris and ingestion by marine fauna.

To minimise these potential impacts associated with the project the infrastructure will be designed by a suitably qualified and experienced engineer to ensure they are designed to withstand prevailing coastal processes and significant weather events. Longline aquaculture infrastructure within the lease areas will be constructed by a suitably qualified and experienced person.

The longline infrastructure would be inspected regularly and cleaned of biofouling to ensure all components remain structurally sound and stable. Inspections and maintenance of the longline infrastructure would also be conducted after severe weather to ensure that structural integrity has not been compromised.

The risk of the structural integrity and stability of the longline infrastructure being significantly impacted i.e., becoming dislodged or compromised in any way, by severe weather or other means is thought to be 'low'.

6.6.3 Further considerations for the EIS

A standard level of impact assessment is required for the built environment and the impacts are expected to be minor.

- Assess potential impacts of the project to land-based infrastructure.
- Develop a stakeholder engagement plan for the project to capture community concerns in relation to existing land-based infrastructure.
- Develop EMP to manage any potential impacts to identified during consultation to existing land-based infrastructure.

6.7 Coastal processes

The infrastructure associated with the kelp farm has the potential to alter existing coastal processes like wave refraction, attenuation breaking and diffraction and water currents. These impacts must be avoided, minimised or mitigated if they are deemed unavoidable. Solid obstructions are likely to have more significant impacts on these processes than what's being proposed by the kelp farm which will consist predominantly of ropes, chains and anchors. The profile of the proposed infrastructure is unlikely to significantly impede water currents and waves at either site.

Offshore marine sand bodies may provide suitable sources of sand for beach nourishment programs, designed to reduce the risk of beach erosion. Potential suitable sand sources have been identified and mapped at locations along the NSW coast. Proponents are required to consult with relevant State Government departments to ensure that the proposed aquaculture lease will not have a significant impact on marine sand bodies that have been identified for future beach nourishment programs. In addition, proponents are required to map relevant sediment compartments listed in Schedule 1 of the CM Act and provide evidence that the proposed infrastructure will not interrupt sediment transport.

All infrastructure will float on or near the surface of the water column and will be flexible, moving with wave and water motion. The design and layout of the infrastructure will be aligned to predominant local wave and current direction. This is likely to cause negligible alteration to wave processes. The site has been chosen with adequate depth to accommodate suspended infrastructure so that it will not make physical contact with the seafloor when stocked with maximum standing biomass.

All infrastructure will be cleaned regularly to ensure that biological growth does not build up and further obstruct water movement. This will serve to minimise the farms impact on prevailing water currents and wave action.

6.7.1 Further considerations for the EIS

A detailed level of impact assessment is required for coastal processes, including specialist field investigation having regard to the Bega Valley Shire Coastal Processes and Hazards Definition Study (BMT WBM 2015).

- Map relevant sediment compartments listed in Schedule 1 of the CM Act and provide evidence that the proposed infrastructure will not interrupt sediment transport.

- Confirm that the proposed lease sites have adequate water depth to accommodate suspended aquaculture infrastructure through bathymetric survey or other suitable method.
- Design and construct longline aquaculture infrastructure within the lease areas by a suitably qualified and experienced engineer to ensure they can withstand prevailing coastal processes and significant weather events.
- Confirmation that the lease areas are located above sandy substrates through benthic surveys and will not interrupt sediment transport or marine sand bodies that have been identified for future beach nourishment programs through consultation with relevant NSW State government departments and advice from technical experts.
- Develop an EMP, with an emergency protocols and procedures to prepare for and manage any potential impacts from prevailing coastal processes and significant weather events during construction and operation, including collection of infrastructure and debris in the event of a major storm event.

6.8 Waste

Waste generated during construction and operation may include general waste (plastic containers and bags) and potentially faulty/excess infrastructure (rope and broken parts). Waste will be stored in appropriate sealed containers to prevent waste being blown into the ocean and becoming an ingestion risk for marine fauna. Wastes generated by the aquaculture lease will be collected, stored, recycled and disposed of appropriately.

In addition, sewage waste will for vessels will be captured in on-board holding tanks or chemical toilets on service vessels and discharge at an approved sewage discharge point on return to port.

6.8.1 Further considerations for the EIS

A standard level of impact assessment is required for waste management for the project, including classification of waste streams generated during all stages of the project, and details of waste storage, handling, and disposal.

- Develop a waste management plan within the EMP with procedures to comply with industry best practice for waste management for the construction, operational, maintenance and decommissioning activities of the project.

6.9 Water quality and hydrology

6.9.1 Construction

Construction activities during the project have the potential to generate silt and sediment during the installation of the anchors. Adverse impacts to water quality are expected to be minimal during the construction process, however, baseline monitoring will be undertaken in accordance with the MWSAS which requires: *An environmental monitoring program that monitors water quality within the lease and surrounding waters prior to (that is, baseline sampling) and during the aquaculture operation.* Trigger limits for relevant water quality parameters which meet NSW State government requirements will also be established from this environmental monitoring program.

Construction works will also be completed in accordance with a CEMP, which will include visual and in-situ water quality monitoring during construction activities.

6.9.2 Operation

The impacts of seaweed farming on water quality are generally considered to be low. Seaweed farms can remove inorganic nutrients from the water column during growth (Kerrison et al 2015) and have been identified as a potential option for nutrient management in highly impacted coastal waters (Racine et al 2021). Kelp farms have been shown to increase the dissolved and particulate organic matter in the adjacent waters due to wave action and decomposition of the algal material (Ren et al 2014). This can impact on seafloor communities and processes, but this is unlikely to be

significant over the highly mobile sandy bottom at both sites. Under the NSW Marine Waters Sustainable Aquaculture Strategy, the expected outcome from a proposed venture is for an investigation to identify all factors that may have a potential impact on water quality surrounding the site. The EIS will investigate those factors and provide mitigating actions where needed. This may take the form of an environmental monitoring program for inclusion in the project's environmental management plan that monitors water quality within the site, prior to operations proceeding (to provide a baseline assessment) and during the operation. An outline of the program will be included in the EIS.

Kelp farms can impact the hydrodynamics (Campbell et al 2019), absorbing and deflecting wave and current energy adjacent to the farm. However, the proposed sites for the kelp farm are open in nature and are likely to have negligible impact on the water currents requiring only a minor level of assessment.

Based on the potential impacts above, the EIS will address all the relevant assessment requirements detailed for water quality in the MWSAS (NSW Department of Industry 2018).

6.9.3 Further investigations to be completed as part of the EIS

A detailed impact assessment is required for water quality and hydrology, including field investigation.

- A quantitative water quality impact assessment of both marine aquaculture lease areas in accordance with requirements of the National Water Quality Management Strategy (DAWE 2018) and Marine Water Quality Objectives for NSW Ocean Waters – South Coast (Department of Environment and Conservation NSW 2005), including identification of existing background conditions and associated trigger values for all key water quality parameters and assessment of predicted water quality impacts during construction and operation of the project.
- Develop an EMP, including procedures to monitor water quality parameters and minimise impacts to water quality during operational phases of the project.

6.10 Economic – Tourism and commercial fishing

The project is likely to have significant positive impacts on local economic, tourism and commercial fishing operations. These impacts may include both direct local employment opportunities as well as indirect benefits in the form of stimulation of overall local economic activity in a region that still is recovering from the cumulative effects of Black Summer bushfires of 2019/20 and COVID-19.

As the project is strongly linked to Sea Health Products' other operations, namely production of seaweed-based health and beauty products, there are significant opportunities for creating synergies and spin-off businesses. The current demand for kelp is outstripping existing supply and it is highly probable that the project's production of kelp can help generate new business activity (e.g., as indicated by the First Nations owned business, South Coast Seaweed).

As a locally owned and run family business with strong ties, reputation and networks within the community and beyond, there is a strong probability that the project can 'put Tilba Tilba on the map' and help reinforce the area's reputation for being an eco-friendly tourism destination.

Further assessment will be undertaken to determine the likelihood of spatial overlap between fishing activities and the development location through consultation with groups such as the Commonwealth Fisheries Association, the Professional Fisher's Association and the Recreational Fishing Alliance of NSW. The lease areas may increase local fishery yields and create new recreational or commercial fishing zones within the vicinity of the longlines by providing habitat, shelter, and food for small fish.

In the short term, and during the trials for the project, it is anticipated that the direct employment resulting from the project will be in the order of casual employment for approximately 5 local staff over several weeks. Of a combined population of 200 adults aged 18 – 59 in Tilba Tilba and Central Tilba, this represents a significant positive opportunity. In turn, the anticipated increase in production is likely to generate further employment in the production of Sea Health Products' offerings).

In the longer-term, the project (and affiliated Sea Health Products) is likely to contribute significantly to the overall seaweed industry potential in Australia, estimated at \$100 million (GVP) by 2025 and creating up to 1,200 direct jobs in regional, coastal communities around the country.²

While it is difficult to quantify the longer term, cumulate and cascading economic and social impacts of the project, it is worth noting that (if approved) this project will be the first commercial seaweed farm in Australia that has all the elements in place to make it a success. The applicant has the knowhow (namely regarding how to propagate seaweed); passion for a more sustainable and climate friendly environment; skills and education; experience; reputation; network; standing in the scientific community; and community support to make this a runaway and community-driven success.

It is a likely risk that without the establishment of the proposed aquaculture kelp farm, there will be a negative impact on existing businesses in the area, with a high risk of business failure, as these ventures already struggle to gain access to the seaweed necessary to sustain their business operations.

6.10.1 Further considerations for the EIS

A standard economic impact assessment is required for the EIS.

- Develop and implement a stakeholder engagement plan for the project to:
 - Seek agreement that the proposed aquaculture operation will not unduly impact on commercial fishing, boating and tourism in the region surrounding the proposed lease sites.
 - Seek agreement that proposed aquaculture operation will not unduly impede navigation to and from important fishing, commercial boating and tourism sites.
- Develop the EMP, which will include measures to mitigate potential impacts on tourism and commercial boating and fishing requirements, as well as identify appropriate navigation aids and markers required for the project.

6.11 Global warming and climate change

Human-caused, accelerated climate change is accepted by the NSW and Federal Government as a major environmental impact on our planet.

All efforts will be made to reduce environmental footprints, mitigate any risks to the environment, and actively contribute to positive environmental benefits from the project through collaboration with established science and R&D networks, and namely:

- University of Technology Sydney (namely UTS Deep Green Biotech Hub which is part of the C3 Climate Change Cluster)
- University of Tasmania
- Sydney Institute of Marine Science
- Marine Bioproducts Cooperative Research Centre
- Safe Seaweed Coalition

Initial consultation with the science community has showed strong support for the project on the grounds of its potential to deliver on environmental priorities, namely regarding carbon sequestration and marine regeneration capabilities.

The proposed project has strong social licence and wide community support, as evidenced through the people's choice award and judges' award at the Bega Valley iAccelerate program and through three years of informal engagement.

² [Australian Seaweed Industry Blueprint, 2020](#)

6.11.1 Further considerations for the EIS

A standard assessment of potential climate change impacts is required for the EIS.

- The EIS will consider the overall impact of the project on climate change and make every effort to align with NSW Climate Change Policy Framework (2016) on reducing global warming, including:
 - Using fuel efficient and low emission vehicles.
 - Minimising the number of boat and vehicle trips.
 - Sourcing materials locally and making use of local staff.
 - Reducing consumption, reusing, and recycling waste materials as much as possible.

6.12 Biosecurity and health management

The project will avoid any potential biosecurity impacts where possible, then minimise and mitigate any unavoidable impacts in accordance with the MWSAS.

The risks associated with biosecurity, disease and herbivory for the project will identified and accounted for in the EIS and ecological impact assessment. Productivity yields of kelp have been shown to have decreased due to an increase incidence of disease and pests resulting from the intensification of aquaculture activity (Ward et al 2019). Disease is typically more prevalent in tropical seaweed farms, and as both kelp farm lease sites are well flushed with clean oceanic water, this disease risk is considered 'low'.

Ecklonia radiata is an endemic species to the region and very prevalent throughout Australia. Seed stock for the project is sourced from within 50km of the lease sites under the existing permit under the *Fisheries Management (Aquaculture) Regulation 2017* for the collection of marine vegetation for commercial purposes (permit number OUT20/9256). The seed stock will be grown in a hatchery with strict biosecurity procedures, including sterilised sea water to 0.5 microns and UV sterilisation. This approach will minimise the risk of introduction of exotic pathogens and pests into the surrounding region, as well as significant impacts to genetic integrity of wild *Ecklonia radiata*. No processing of the seaweed will occur on the proposed aquaculture lease areas.

As part of the EMP, the applicant will develop a biosecurity plan which clearly outlines how they will address not only the biosecurity risks of their respective operation but how they will mitigate impacts on or from other aquaculture ventures and wild fisheries stock. The development of the biosecurity plan, the applicant will refer to the *Aquaculture Farm Biosecurity Plan: generic guidelines and template* (DAWE 2016).

Biofouling must be regularly removed from aquaculture infrastructure to ensure it does not harbour pathogens, impact on water flow and quality and/or attract wild fish as a source of food and refuge (Braithwaite et al., 2007; Fitridge et al. 2012).

6.12.1 Further considerations for the EIS

A standard assessment of biosecurity and health impacts is required for the EIS.

- Consider biosecurity and health matters in the ecological impact assessment.
- Develop a biosecurity plan as part of the EMP including:
 - Commitment to comply with the general biosecurity duty under the *Biosecurity Act 2015*.
 - Systems, advice and training for lease staff, contractors, volunteers and other visitors to inform them of their biosecurity duties under the *Biosecurity Act 2015* and associated regulations.
 - Biofouling management measures.
 - Biosecurity separation distances between aquaculture farms.
 - Measures to mitigate biosecurity risks posed from the aquaculture operation and other aquaculture ventures and wild fisheries stock.

- Procedures for handling, treating, and disposing of wastes, infrastructure and other materials that are potential carriers of disease agents or pests.

6.13 Heritage – Aboriginal and European

Aboriginal Traditional Owners are recognised as custodians of land and waters. There are Aboriginal objects and places as well as State Heritage listed areas with Aboriginal heritage values located along the NSW coastline which much be identified as part of the EIS. The submerged lands along the coastline of NSW may have cultural significance to local Aboriginal communities (Schnierer & Egan, 2015). Much of the nearshore submerged coastline would have been terrestrial environments during periods of low sea level, thus utilised in a way that was different to the more contemporary historical record. Acknowledging access to the marine estate for cultural purposes has also been identified in the Marine Estate Management Strategy as a priority action. Aboriginal Traditional Owners have the right under the Commonwealth's Native Title Act 1993 to lodge a claim over sea country to which they have a connection

Information on the Aboriginal and European heritage adjacent to the two kelp farm sites will be sourced from literature, previous heritage studies, field investigations, database searches and community consultation. While it is unlikely that any heritage items will be identified due to the offshore location of the sites, the EIS will investigate any land-based items or locations that might be impacted by the farm.

The South Coast People have lodged a claim over both lease areas in 2018 (refer to Figure 21). This claim is active and has not yet been determined. The proposed commercial seaweed leases do not grant exclusive use and do not extinguish native title.

6.13.1 Further considerations for the EIS

A detailed assessment of heritage impacts is required for the EIS.

- Consult the community regarding Indigenous and European cultural heritage
- Consult the South Coast People regarding the Native Title Claim.
- Assess heritage values and potential impacts, including field investigations (where required), by an experienced cultural heritage assessor.

6.14 Social impacts

6.14.1 – Access, surroundings, livelihoods, way of life, community and health and wellbeing

Three years' informal engagement in relation to the potential of expanding the seaweed industry on the south coast has shown strong community support for the project, as evidenced through the IAccelerate Program in 2019 where Sea Health Products received the Peoples' Choice Award and Judges' Award for the pitch to introduce kelp farming aquaculture to the south coast of NSW.

In a small community of environmentally conscious residents, Sea Health Products has created a strong network of likeminded individuals who are passionate about environmental protection and climate change mitigation. This network has been further strengthened after the Black Summer bushfires in 2019/20, where the community came together to rebuild and reconnect after the shared trauma.

The project resonates with local values and is seen as an inspiring story of resilience and community spirit. In addition, the potential employment, reputation and branding, and spin-off effects to other local business has been warmly welcomed in times of financial hardships and uncertainty.

6.14.2 Aboriginal cultural fishing

The proposal is compatible with Aboriginal cultural fishing and would engage in an appropriate manner with Yuin Traditional Owners as well as native title claimants to understand local Aboriginal cultural heritage as related to the sites.

At this stage of the project, potential impacts to Aboriginal cultural fishing from the marine commercial marine aquaculture seaweed lease areas are likely to be 'negligible'. However, further investigations are required to confirm this is the case.

6.14.3 Recreational boating and fishing

While current available information suggests that the farm location is not a focal point for recreational and commercial fishing effort, engagement with local recreational fishers and organisations will ensure that specific interests are heard and considered. The engagement will include organisations such as Bermagui Fisherman's Co-operative, Bermagui Motor Yacht Club, Extreme Fishing Charters Bermagui, Bermagui Big Game Anglers Club, Pambula Fishing Club and Merimbula Fishing Club. Initial conversations with these groups have already been undertaken, indicating overall support for the project and the economic and tourism activity it will generate in the region. The engagement will also include consultation with peak bodies representing recreational and commercial fishing interests.

Consultation to date and existing information also suggests that the location is not on a navigation route. It requires a standard level of assessment. The area may become a more desirable location for fishing (and tourism) should the development proceed, and fishing access arrangements need to be balanced with safety and integrity of the farm. This will form a substantial focus of engagement with identified fishing stakeholder groups.

The proponent will work with Transport for NSW to identify appropriate navigation aids and markers for the farm which will be included in further environmental assessment. In terms of navigation by vessels associated with the farm itself, the number of vessel movements and the navigation route will be documented in the EIS.

At this stage of the project, potential impacts to recreational boating and fishing from the marine commercial marine aquaculture seaweed lease areas are likely to be 'negligible'. However, further investigations are required to confirm this is the case.

6.14.4 Further considerations for the EIS

A standard assessment of social impacts is required for the EIS.

- Assess socio-economic benefits of the project for the NSW community.
- Develop and implement a stakeholder engagement plan for the project to capture community support and address any identified concerns associated with the project.
 - Engage with the Yuin local Traditional Owners and South Coast People to confirm if there are any potential impacts to Aboriginal cultural fishing values in the region.
 - Seek agreement that the proposed aquaculture operation will not unduly impact on cultural fishing in the region surrounding the proposed lease sites.
 - Seek agreement that proposed aquaculture operation will not unduly impede navigation to and from important cultural fishing sites.
 - Seek agreement that the proposed aquaculture operation will not unduly impact on fishing and recreational boating in the region surrounding the proposed lease sites.
 - Seek agreement that proposed aquaculture operation will not unduly impede navigation to and from important fishing, recreational boating and tourism sites.
- Develop the EMP, which will include:

- measures to mitigate potential impacts on cultural fishing requirements.
- measures to mitigate potential impacts on recreational boating and fishing requirements, as well as identifies appropriate navigation aids and markers required for the project.

6.15 Sustainability

With a background in marine science and sustainable coastal environments, the applicant Jo Lane is passionate about ensuring environmental sustainability throughout the implementation of the project as well as promoting the wide range of environmental benefits that would result from the project. Her educational and career trajectory attests to the veracity of the intention to contribute to long term environmental and climate change outcomes; these are not empty words, but guiding principles and core drivers for the project.³

All efforts will be made to reduce environmental footprints, mitigate any risks to the environment, and actively contribute to positive environmental benefits from the project through collaboration with established science and R&D networks, and namely:

- University of Technology Sydney (namely UTS Deep Green Biotech Hub which is part of the C3 Climate Change Cluster)
- University of Tasmania
- Sydney Institute of Marine Science
- Marine Bioproducts Cooperative Research Centre
- Safe Seaweed Coalition

Initial consultation with the science community has showed strong support for the project on the grounds of its potential to deliver on environmental priorities, namely regarding carbon sequestration and marine regeneration capabilities.

The proposed project has strong social licence and wide community support, as evidenced through the people's choice award an judges' award at the Bega Valley IAccelerate program and through three years of informal engagement.

6.15.1 Further considerations for the EIS

A standard assessment of sustainability impacts is required for the EIS.

- Describe how the proposal complies with the Australian Aquaculture Code of Conduct.

³ Prior to establishing Sea Health Products, Jo Lane has held positions as including positions as Shorebird Coordinator with NSW Government; Environment Project Officer with Eurobodalla Shire Council; Coastcare Facilitator with Coastcare; Environmental Field Officer with Australian Museum Business Services; and Education Officer with Oceanworld Manly.

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Appendices

Appendix **A**

Protected Matters Search Tool and BioNet Atlas search results for both lease sites



Appendix **B**

Scoping summary table for the project



Scoping summary table for the project

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
Access – Marine vessels and ports	Standard	No	Specific - Consultation with Transport for NSW, Bega Valley Shire Council, marina owners, tour operators, commercial fishing companies, recreational and Aboriginal fishers, and the wider community regarding the project and potential impacts.	NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to Section 6.1.
Access – Roads, traffic and parking	Standard	No	Specific - Consultation with Transport for NSW, Bega Valley Shire Council, and the wider community regarding the project and potential impacts.	NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to Section 6.2.
Amenity – Noise	Standard	No	Specific – Bega Shire Council, relevant State Government departments and wider community	<i>Protection of the Environment Operations Act 1997</i> <i>Protection of the Environment Operations</i>	Refer to sections 3.2.17, 6.3

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
				<i>(Noise Control) Regulation 2017</i> Interim construction guideline (2009) Noise Policy for Industry (2017) NSW Marine Waters Sustainable Aquaculture Strategy (2018)	
Amenity – Visual	Standard	No	Specific – Bega Shire Council, relevant State Government departments and wider community	<i>Bega Valley Shire Council Local Environment Plan (2013)</i> <i>Bega Valley Shire Community Strategy Plan 2040</i> <i>Bega Valley Shire Council Policy 2.02 Live Work Invest Policy 2.02</i> NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to Section 6.4.
Biodiversity	Detailed	No	Specific – Bega Shire Council, relevant Federal	<i>EPBC Act 1999</i>	Refer to Section 3.1.2, 3.2.2, 3.2.8, and 6.5.

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
			and State Government departments and wider community	<i>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance</i> <i>EPBC Act Policy Statement 2.2 – Industry: Offshore aquaculture</i> <i>Biodiversity Conservation Act 2016</i> <i>Fisheries Management Act 1994</i> <i>Protection of the Environment Operations Act 1997</i> <i>Protection of the Environment Operations (Noise Control) Regulation 2017</i> <i>State Environment Planning Policy (Biodiversity and Conservation) 2021</i> NSW Threatened Species Assessment Guidelines (DPI 2008)	

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
				NSW Marine Waters Sustainable Aquaculture Strategy (2018) NSW Marine Estate Management Strategy 2018 – 2028 (NSW Marine Estate Management Authority 2018) NSW Marine Estate TARA final report (BMT WBM Pty Ltd 2017)	
Built environment	Standard	No	Specific - Consultation with Bega Valley Shire Council, relevant State Government departments, and wider community.	<i>Bega Valley Shire Council Local Environment Plan (2013)</i> <i>Bega Valley Shire Community Strategy Plan 2040</i> <i>Bega Valley Shire Council Policy 2.02 Live Work Invest Policy 2.02</i> NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to Section 6.6

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
Coastal processes	Detailed	No	Specific - Consultation with Bega Valley Shire Council, relevant State Government departments, and wider community.	NSW Marine Waters Sustainable Aquaculture Strategy (2018) <i>Coastal Management Act 2016</i> Bega Valley Shire Coastal Processes and Hazards Definition Study (BMT WBM 2015).	Refer to Sections 3.2.4 and 6.7.
Waste	Standard	No	Specific – Relevant State government departments, Bega Valley Shire Council and wider community.	<i>Waste Avoidance and Resource Recovery Act 2001</i> NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to sections 4 and 6.8.
Water quality and hydrology	Detailed	No	Specific – Specific Consultation with Bega Valley Shire Council, relevant State Government departments, and wider community.	NSW Marine Waters Sustainable Aquaculture Strategy (2018) <i>Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and</i>	Refer to Sections 3.3, 4.3.8 and 6.9.

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
				<i>New Zealand (ARMCANZ) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)</i> <i>Marine Water Quality Objectives for NSW Ocean Waters – South Coast (Department of Environment and Conservation NSW 2005)</i> <i>National Water Quality Management Strategy (DAWE 2018)</i>	
Economic – Tourism and commercial fishing	Standard	No	Specific – targeted engagement with key stakeholders and local groups	NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to Section 6.14.3.
Global warming and climate change	Standard	No	Specific - Consultation with Bega Valley Shire Council, relevant State Government departments, and wider community.	<i>Bega Valley Shire Council Climate Resilience Strategy (2050)</i> NSW Climate Change Policy Framework (2016)	Refer to Section 6.11.

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
				NSW Marine Waters Sustainable Aquaculture Strategy (2018)	
Biosecurity and health management	Standard	No	Specific - Consultation with Bega Valley Shire Council, relevant State Government departments, and wider community.	<i>Biosecurity Act 2015</i> <i>Biosecurity Strategy 2013- 2021</i> NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to sections 3.2.3 and 6.12.
Heritage – Aboriginal and European	Detailed	No	Specific – targeted engagement with Traditional Owners	<i>Underwater Cultural Heritage Act 2018</i> NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to sections 3.2 and 6.13.
Social	Standard	No	General – Consultation with the Bega Valley Shire Council and the local community Specific – Consultation required with Traditional Owner groups Specific – engagement with recreational boating and	NSW Marine Waters Sustainable Aquaculture Strategy (2018)	Refer to section 6.14.

Matter	Level of assessment (Standard, detailed or no further assessment in EIS)	Cumulative impact assessment required? (Yes or No)	Engagement (general or specific)	Relevant government plans, policies and guidelines	Scoping report reference
			fishing groups such as Bermagui Fisherman's Co- operative, Bermagui Motor Yacht Club, Extreme Fishing Charters Bermagui, Bermagui Big Game Anglers Club, Pambula Fishing Club and Merimbula Fishing Club and the wider community.		
Sustainability	Standard	No	Specific – Relevant State government departments, Bega Valley Shire Council and wider community.	NSW Marine Waters Sustainable Aquaculture Strategy (2018) Australian Aquaculture Code of Conduct	Refer to section 6.15.