

Department of Planning, Housing and Infrastructure

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Modification 1 of Jervis Bay Aquaculture Project

State Significant Infrastructure Modification Assessment Report (SSI-5657-Mod-1)

March 2025





Acknowledgement of Country

The Department of Planning, Housing and Infrastructure acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Assessment Report

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Preface

This assessment report provides a record of the Department of Planning, Housing and Infrastructure's (the Department) assessment and evaluation of the NSW Department of Primary Industries' (DPI) application to modify the State significant infrastructure (SSI) approval for the Jervis Bay Aquaculture Project, located in the waters of Jervis Bay, on the south coast of NSW. The report includes:

- a description of the proposed modification
- an assessment of the modification against government policy and statutory requirements, including mandatory considerations
- a demonstration of how matters raised by the community and other stakeholders have been considered
- an assessment of the likely environmental, social and economic impacts of the modification
- an evaluation which weighs up the likely impacts and benefits of the modification, having regard to the proposed mitigation measures, community views and government advice, and provides a view on whether the impacts are, on balance, acceptable
- a recommendation to the decision-maker, along with the reasons for the recommendation, to assist them in making an informed decision about whether the approval should be modified and any conditions that should be imposed.

Executive Summary

Modification

The Jervis Bay Aquaculture Project (the project) approval permits the commercial farming of various endemic shellfish species that naturally occur in the waters of Jervis Bay, at three commercial aquaculture leases, totalling approximately 50 hectares (ha). The former NSW Department of Primary Industries (DPI) is the Proponent for the project and is now known as the NSW Department of Primary Industries and Regional Development (DPIRD). DPIRD has tendered out the operation of the project to South Coast Mariculture (SCM), a private commercial aquaculture company, to farm Blue Mussels (*Mytilus spp.*). The lease areas are located within the Habitat Protection Zone of the Jervis Bay Marine Park (JBMP). Jervis Bay is also declared Naval Waters under Commonwealth legislation and is used by the Department of Defence for purposes related to training activities at HMAS Creswell and the Beecroft Weapons Range.

The modification seeks to relocate one of the approved leases off the coast of Vincentia (in the southern waters of Jervis Bay) to the northern waters of Jervis Bay, off Callala Beach and increase the size of this lease from 10 ha to 20 ha. The two existing offshore leases at Callala Beach are also proposed to be increased in size from 20 ha to 25 ha each and moved approximately 200 metres (m) closer to shore. The modification will result in an overall increase in lease area from 50 ha to 70 ha.

The Proponent also seeks to modify the approval to permit the anchors used to secure the mussel farm infrastructure to be left in the sediment (i.e. *in situ*) following decommissioning of the farm.

As an outcome of the Department's assessment, the modification also seeks to add an additional endemic species of Blue Mussel to the list of approved species for farming and to remove naturally occurring algae from the list, as this species cannot currently be farmed under Marine Estate legislation.

DPIRD has advised the modification aims to improve community amenity by relocating the Vincentia lease, correct an error in the mapping co-ordinates for the Callala Beach leases and confirm the leases are outside the Department of Defence's restricted airspace for the Beecroft Weapons Range, allow for the realignment of mussel farming infrastructure (longlines) for operational efficiencies, enhance the economies of the business and to adopt industry best practice farming infrastructure (screw anchor technology) to secure the longlines and reduce the risk of faunal and environmental impacts.

The modified project is expected to generate five additional construction jobs and 15 additional operational jobs with an estimated development cost of around \$3 million.

Statutory context

On 21 November 2014, the then DPI received approval from the then Minister for Planning to carry out the project. Therefore, the Minister, or delegate, may modify the approval. The Department of Planning, Housing and Infrastructure (Department) is satisfied that the proposed modification is

within the scope of section 5.25 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and does not constitute a new infrastructure application.

Strategic context

The Department considers the modified project to be consistent with the principal aims of the Marine Waters Sustainable Aquaculture Strategy and the permitted activities in the Habitat Protection Zone of the JBMP. The relocated and expanded leases would remain within the Habitat Protection Zone of the Jervis Bay Marine Park (JBMP).

Engagement

The Department exhibited the modification from 28 November 2023 until 11 December 2023. During the exhibition period, the Department received 46 public submissions (four from special interest groups and 42 individual submissions), a submission from Shoalhaven City Council, commenting on the modification and advice from five government authorities. Of the 46 public submissions, 31 were objections (three interest groups, 28 individuals), seven supported the project (all individuals) and eight (one interest group, seven individuals) were comments.

Key concerns raised in the public submissions related to impacts on biodiversity and ecological integrity, the farming of an invasive (non-native) species of mussel in the JBMP, spatfall (the settling of young mussels to a surface or substrate) impacts on the JBMP marine ecosystem, biofouling (the accumulation of mussels on submerged surfaces) on boats, visual impacts, lack of community benefits, insufficient consultation, biosecurity and navigational conflicts.

The Proponent submitted a Submissions Report on 29 May 2024 to address the issues raised in submissions and agency advice. On 7 August 2024, the Proponent provided further information to resolve concerns raised by the Department, the NSW Department of Climate Change, Energy, the Environment and Water – Biodiversity and Conservation Science Division (BCS) and the NSW Heritage Council regarding the ecological impacts, biosecurity and uncertainty regarding impacts on underwater cultural heritage (UCH).

Following further engagement with the Heritage Council of NSW and BCS, the Proponent carried out a UCH survey and assessment in December 2024 and provided further details in March 2025 regarding a proposed Spatfall Monitoring Program, including genetic testing, to respond to the issues raised by these agencies.

The Department has considered the modification application, Submissions Report and further information, and the submissions and advice from government authorities. The key issues for the assessment include species selection and biosecurity, spatfall distribution, screw anchor management and visual amenity. These issues are outlined below and addressed in detail in **Section 1** of this report.

Assessment

Species Selection

The approval specifically nominates *Mytilus galloprovincialis* as the species of Blue Mussel to be farmed as this was identified as endemic to Jervis Bay at the time of the approval. The Proponent is not seeking to change the species of Blue Mussel being farmed as part of the modification. However, the community and BCS raised concerns that recent scientific research suggests the species of mussel being farmed, *M.galloprovincialis*, is not endemic to Australia. To address these concerns the Proponent conducted a literature review on the lineage of *Mytilus spp.* This found the species being farmed in Jervis Bay is a naturally present endemic species, which includes both *M.galloprovincialis* and *M.planulatus*, and hybrids of these species.

The Proponent has commenced genetic testing of wild mussels in Jervis Bay and the farm, in collaboration with the University of Queensland. This testing will contribute to understanding the species and its distribution and will be part of a broader monitoring program to better understand natural cycles and the distribution of mussels within the bay. Recommended conditions require the Proponent to commence this study within six months of the approval of this application.

Conditions are also recommended to be modified to add *M.planulatus* to the list of species permitted to be farmed at the Jervis Bay aquaculture leases to ensure both endemic species are able to be farmed. No change is required to the existing conditions regarding how the leases are stocked as conditions require stock to be sourced from the endemic population and in accordance with approved NSW DPI hatchery and translocation protocols.

Biosecurity

Spat (juvenile mussels) to stock the mussel farm is sourced from Twofold Bay in accordance with the bespoke NSW Blue Mussel Spat Translocation Protocol (Twofold Bay to Jervis Bay) (the Protocol). The Protocol was approved by the NSW Chief Veterinary Officer in 2018 and sets out biosecurity requirements SCM must implement to move Blue Mussel spat from Twofold Bay to Jervis Bay for commercial aquaculture grow-out.

To address concerns raised regarding new pest species and increased boat traffic in Twofold Bay, the Proponent has committed to review and update the existing Disease, Parasite and Pest Management Plan (DPPMP) and the Protocol. This will ensure the DPPMP and Protocol are contemporary and will continue to provide an appropriate framework to manage biosecurity risks for the expanded farm.

Spatfall Distribution

To respond to concerns regarding the impact spatfall may be having on the JBMP marine ecosystem, the Proponent has committed to design and carry out a Spatfall and Genetics Monitoring Program (the Program) to test if spatfall changes and/or increases when the farm is relocated and subsequently expanded. The Program will include genetic testing to determine the population of Blue Mussels found in the bay.

The Program will contribute to the understanding of the natural distribution patterns and abundance within Jervis Bay and the likely source of spat found in Currambene Creek and recently observed in other parts of the bay. Appropriate remedial actions will be implemented should the farm be found to be driving the increase in spatfall observed in Jervis Bay, including reducing stock densities or temporary cessation of production.

Conditions require the Proponent to commence the Program within six months of the approval of this modification and to report annually on the findings of the study to the Planning Secretary thereafter. This information will be made public. This will ensure any remedial actions are implemented by the Proponent and farm operator as soon as possible, if required. The Program will be reviewed after three years following the relocation of the leases, and future continuation of the Program considered in consultation with the Department.

Screw Anchor Management

Screw anchors are increasingly being used in longline aquaculture and represent emerging best practice for the industry. The Department therefore supports the use of this infrastructure for the expansion of the farm.

However, leaving this infrastructure *in situ* when the farm is decommissioned, as proposed by the Proponent is not considered appropriate. The risk of adverse social and economic impacts from leaving the anchors in the ocean floor outweighs the environmental risks associated with removing the screw anchors. On balance and having regard to intergenerational equity and the need to consider environmental and social impacts, the Department considers for the existing conditions should remain which require all infrastructure to be removed following decommissioning of the longline infrastructure.

Visual Amenity

The relocated leases proposed under this modification will result in the lease areas being approximately 1,250 m, 1,710 m and 1,560 m from Callala Beach shore for leases AL15/001, AL15/002 and AL15/003, respectively. The leases will therefore be located significantly further away than 200 m, which was previously assessed and found to have either nil or very low to low impact.

The Department is satisfied the relocated leases are therefore unlikely to increase the visual impacts of the leases as viewed from Callala Beach.

Conclusion

Overall, the Department's assessment concludes the modified project would align with the Marine Waters Aquaculture Strategy and contribute to the local and State economy by creating five construction and 15 operational jobs, while also increasing mussel production and sales. The modification will consolidate farm operations at Callala Beach, enhancing navigational safety and community amenity, and will implement a screw anchor system recognised as industry best practice. It also supports ongoing research into the genetics and distribution of Blue Mussels in NSW, as the

Proponent has committed to further research on Blue Mussels in Jervis Bay. Realigning and expanding the longline infrastructure will improve operational efficiencies and ensure the farm is located outside the Department of Defence's Beecroft Weapons Range, ensuring employee safety.

To manage environmental impacts, the Department has recommended conditions requiring the Proponent to carry out and report on a Spatfall Monitoring Program to verify mussel distribution and genetics, within six months of the determination of the modification. Removal of all farm infrastructure when the farm is decommissioned will ensure the integrity of the JBMP is maintained for future generations.

The modification will retain conditions related to stock management, visual amenity, navigation safety, structural integrity, marine fauna entanglement, and monitoring to ensure continued compliance with the original approval's operational framework. Enhanced compliance reporting and maritime heritage protection measures will improve environmental oversight, and the Proponent will update management plans to incorporate contemporary information and requirements regarding biosecurity and maritime heritage.

As such, the Department considers the modified project is in the public interest and recommends that the approval is modified subject to conditions.

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1 Introduction

NSW Department of Primary Industries and Regional Development (DPIRD) (the Proponent) seeks to modify the Jervis Bay Aquaculture Project (the project) (SSI-5657) to permit the relocation and expansion of three commercial aquaculture leases for the farming of Blue Mussels in the waters of Jervis Bay, on the south coast of NSW. Jervis Bay is a declared Marine Park under the *NSW Marine Estate Management Act 2014* (MEM Act).

The application was lodged on 23 November 2023 by the Proponent under section 5.25 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

A more detailed overview of the proposed modification is provided in **Section 2**.

1.1 Background

South Coast Mariculture (SCM), a commercial aquaculture operator, was the successful tenderer for the three aquaculture leases in Jervis Bay and has been farming Blue Mussels in the bay since 2019. Commercial harvesting commenced in November 2020 with spat (small juvenile mussels) sourced from Twofold Bay, Eden. SCM also farms Blue Mussels in Twofold Bay and operates a seafood processing facility in the Huskisson Industrial Estate in the Shoalhaven local government area (LGA). The aquaculture leases (AL) in Jervis Bay are identified as AL15/001, AL15/002 and AL15/003.

Jervis Bay is one of only three marine bays on the NSW coast that is suitable for extensive aquaculture (a low impact form of aquaculture whereby the species being farmed feeds on naturally available food in the water, rather than using supplementary food to grow), as identified in the *NSW Marine Waters Sustainable Aquaculture Strategy* (Department of Industry, 2018) (MWSAS). The sites of the leases within Jervis Bay were identified by DPI as the best location for the project, having regard to the constraints identified within the MWSAS and the permitted activities within the various zones in the Jervis Bay Marine Park (JBMP) Zoning Map.

DPI has advised the proposed modification provides the opportunity to enhance the development of a sustainable and viable marine aquaculture industry, meeting the increasing demand for quality seafood and support food security in NSW. The proposed modification will also rectify a mapping error recently made aware to DPI and will improve production efficiencies. The modification also seeks to implement a more contemporary best practice anchoring system to secure the farming infrastructure to further minimise the potential for faunal and environmental impacts.

1.2 Subject Site

Jervis Bay is situated on the south coast of NSW approximately 180 kilometres (km) south of Sydney and 20 km southeast of Nowra, within the Shoalhaven LGA. The main townships within the bay include Huskisson and Vincentia to the west and Callala Beach and Hare Bay to the north.

There are Commonwealth landholdings in and around Jervis Bay, including HMAS Creswell and Booderee National Park, which are located on the southwestern shores of Jervis Bay. The Department of Defence's Beecroft Weapons Range is located on the northeastern shores of Jervis Bay on Beecroft Peninsula (see **Figure 1**). The area has been used for Defence training activities since the 1800s. It is included on the Commonwealth Heritage List and is protected by legislation under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Jervis Bay has also been declared Naval Waters under the *Commonwealth Control of Naval Waters Act 1918* (CNW Act).

Jervis Bay is part overlaid by a restricted airspace established to ensure the public's safety by restricting access during times the Beecroft Weapons Range is in use.

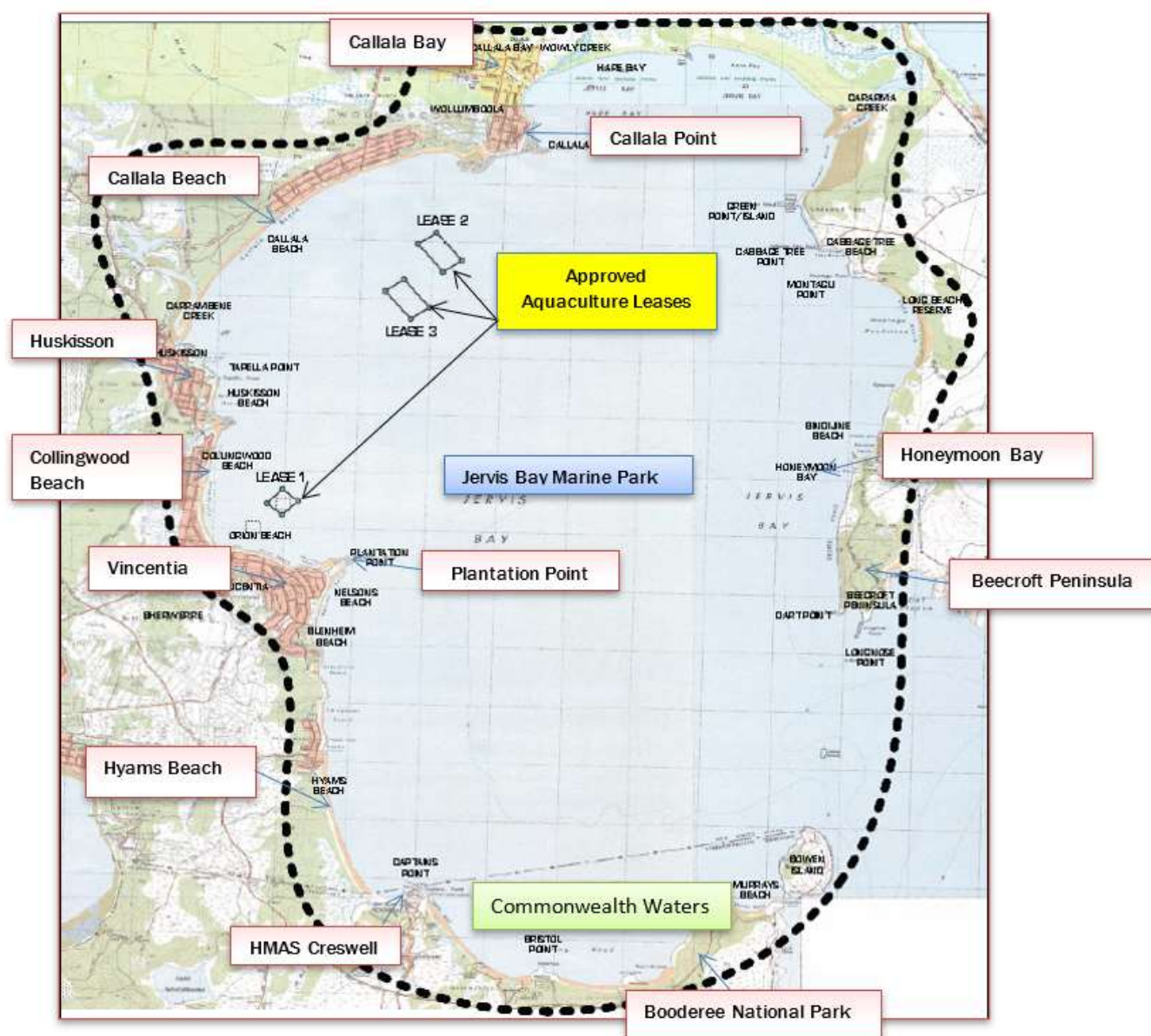


Figure 1 | Site Context and Existing Aquaculture Lease Locations

The existing aquaculture lease areas are located within the Habitat Protection Zone of the JBMP and would remain within the Habitat Protection Zone under the proposed modification (see **Figure 2**).

Extensive aquaculture of shellfish on longlines is permissible within the Habitat Protection Zone in accordance with the Marine Estate Management (Management Rules) Regulation 1999.

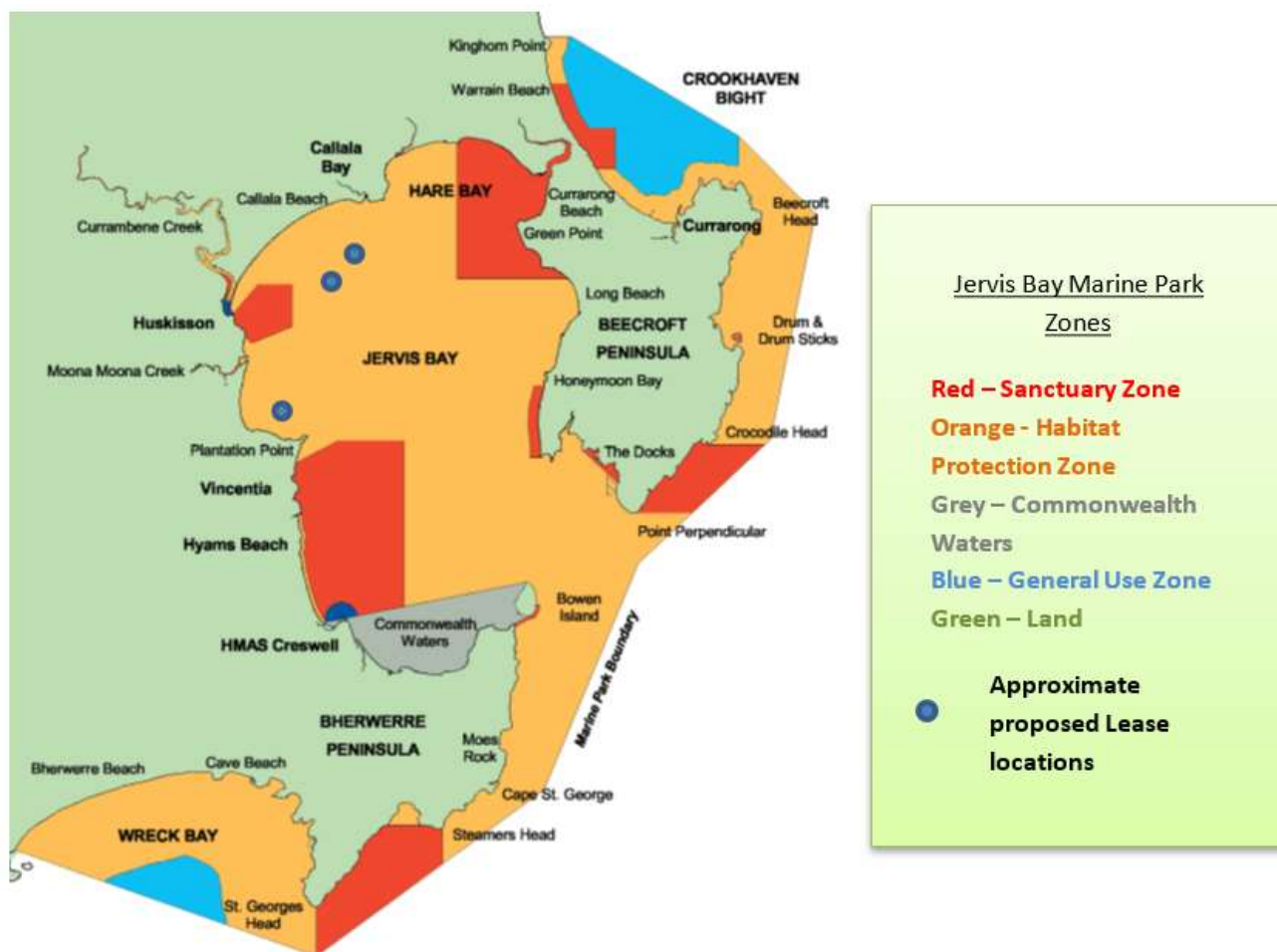


Figure 2 | JBMP Zoning Plan

The current leases are in water with a depth of approximately 10 metres (m) and over soft sediment habitat (predominantly sand). The proposed modified lease areas would be located over an area of fine to medium grained sand and small cobble, also at a depth of approximately 10 m (see **Figure 2**).

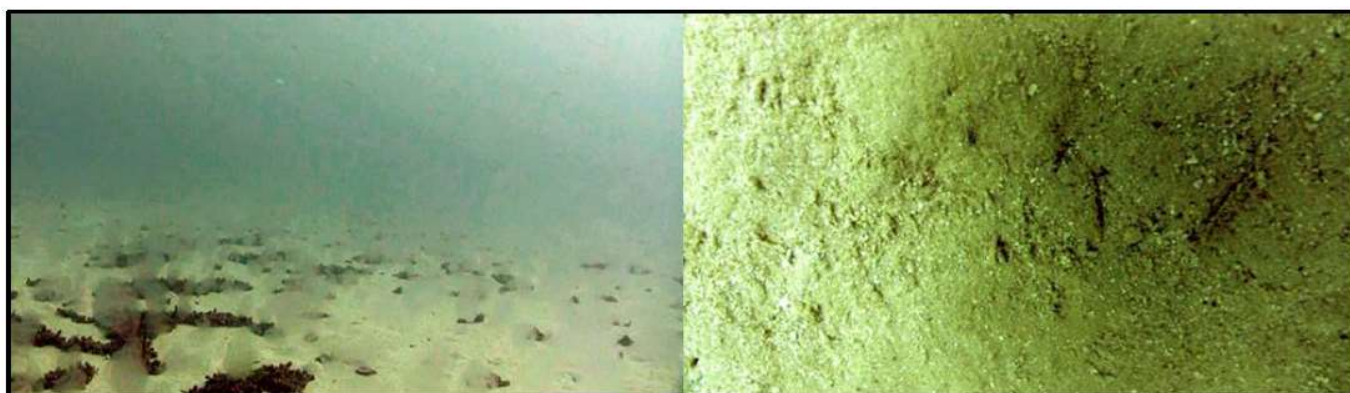


Figure 3 | Typical view of the seabed in the location of the existing and proposed lease areas

1.3 Approval History

On 21 November 2014, approval was granted by the then Minister for Planning to the former DPI (now DPIRD) for the development of the Jervis Bay Aquaculture Project as State significant infrastructure (SSI). The approval permits the construction and operation of three aquaculture leases for the commercial farming of a range of shellfish species, including:

- Blue Mussel (*Mytilus galloprovincialis*);
- Scallops (*Pecten fumatus* and *Chlamys asperima*);
- Akoya Pearl Oyster (*Pinctada imbricata*);
- Sydney Rock Oyster (*Saccostrea glomerata*)
- Angasi / Flat Oysters (*Ostrea angasi*);
- naturally occurring algae; and
- other species approved for by the Secretary for culture

The three approved aquaculture leases comprise:

- AL15/001, a 20 ha lease located 1.4 km southeast of Callala Beach
- AL15/002, a 20 ha lease located 1.9 km southeast of Callala Beach
- AL15/003, a 10 ha lease approximately 650 m from the Vincentia waterfront over the site of a former mussel operation.

Photos of the Callala Beach leases are provided below, showing floating buoys and a cardinal marker (see **Figure 4**). There is no infrastructure installed on the Vincentia lease.



Figure 4 | Photos of Callala Bay leases

The location of the approved leases is shown in **Figure 1**.

The approval includes several conditions relevant to this application. This includes limits on the maximum area of extensive aquaculture permitted, the number of surface support buoys, and the species of Blue Mussel permitted to be stocked on the leases. Conditions regarding decommissioning of the leases are also relevant, as the modification involves the relocation of existing farm infrastructure for lease areas AL15/001 and AL15/002.

A number of management plans and programs that set out the lease infrastructure deployment, operation and maintenance are also relevant to the application.

The approval has not previously been modified.

1.3.1 Related Approvals and Activities

The land-based seafood processing facility located in the Huskisson Industrial Estate operates under a consent issued by Shoalhaven City Council (Council) (DA21/2284).

SCM relies on the use of public wharf infrastructure at the Woollamia Regional Boat Ramp on Currumbene Creek for operational vessels.

2 Proposed Modification

2.1 Modification Overview

The modification is described in full in the Modification Report included in **Appendix A**, summarised in **Table 1** and is illustrated in **Figure 5**, **Figure 6** and **Figure 7**.

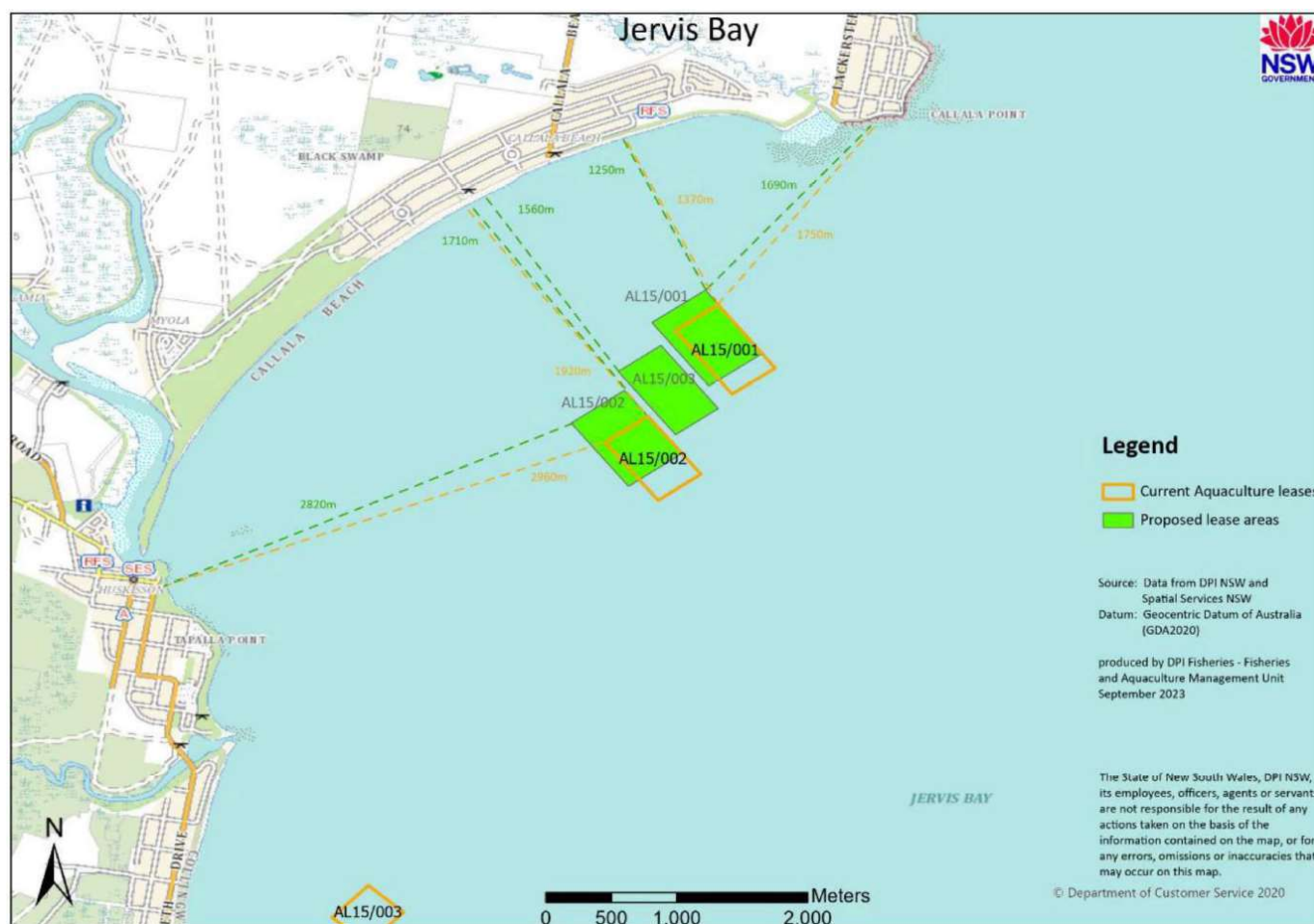


Figure 5 | Modified Site Layout (orange polygon = existing lease area, green polygon = proposed lease area)

Table 1 | Key Aspects of the Modification

Project Element	Approved Development	Proposed Modification
Size of lease areas	AL15/001 – 20 ha AL15/002 – 20 ha AL15/003 – 10 ha	AL15/001 – 25 ha AL15/002 – 25 ha AL15/003 – 20 ha
Total lease area size	50 ha	70 ha
Location of lease areas	AL15/001 - 1,370 m from Callala Beach shore AL15/002 - 1,920 m from Callala Beach shore AL15/003 - 650 m from shore of Orion Beach, Vincentia	AL15/001 – 1,250 m from Callala Beach shore AL15/002 – 1,710 m from Callala Beach shore AL15/003 – 1,560 m from Callala Beach shore
Type of anchor	Specific anchor type not defined	Screw anchors to be utilised for all longlines
Number of navigational lights	x8 navigational cardinal markers x2 midway markers	x4 navigational cardinal markers x2 midway markers
Screw anchor management	Requires all farm infrastructure, including all moorings, longlines and anchors to be removed when the farm is decommissioned	Leave screw anchors <i>in situ</i> following decommissioning (refer Figure 7)
Colour of surface support buoys	AL15/001 & AL15/002 – dark charcoal AL15/003 – mid-grey	AL15/001 & AL15/002 – dark charcoal AL15/003 – dark charcoal

2.1.1 Modified Anchoring System

As the original approval did not specify the type of anchoring system to be used the modification seeks to clarify the type of anchoring infrastructure being used at the farm is a screw anchor system. Compared to a conventional anchor system, the screw anchor system is designed to increase stability, minimise the potential impact on the benthic environment, and have a higher holding capacity. It is considered best practice anchoring technology for marine aquaculture. The system configuration reduces the amount of ‘slack’ in the mooring lines which run from the water level to the sea bed (also known as the ‘anchor warp ratio’) which decreases the risk of marine entanglement (see **Figure 6** and **Figure 7**). Each screw anchor is drilled approximately four metres into the seafloor, as illustrated in **Figure 7**.

The Proponent proposes to leave all the screw anchors *in situ* following decommissioning of the farm, rather than remove them at decommissioning, as required under the existing approval. This would involve severing the mooring line at the seafloor and leaving the remaining line and anchor approximately four metres beneath the seafloor (**Figure 7**).

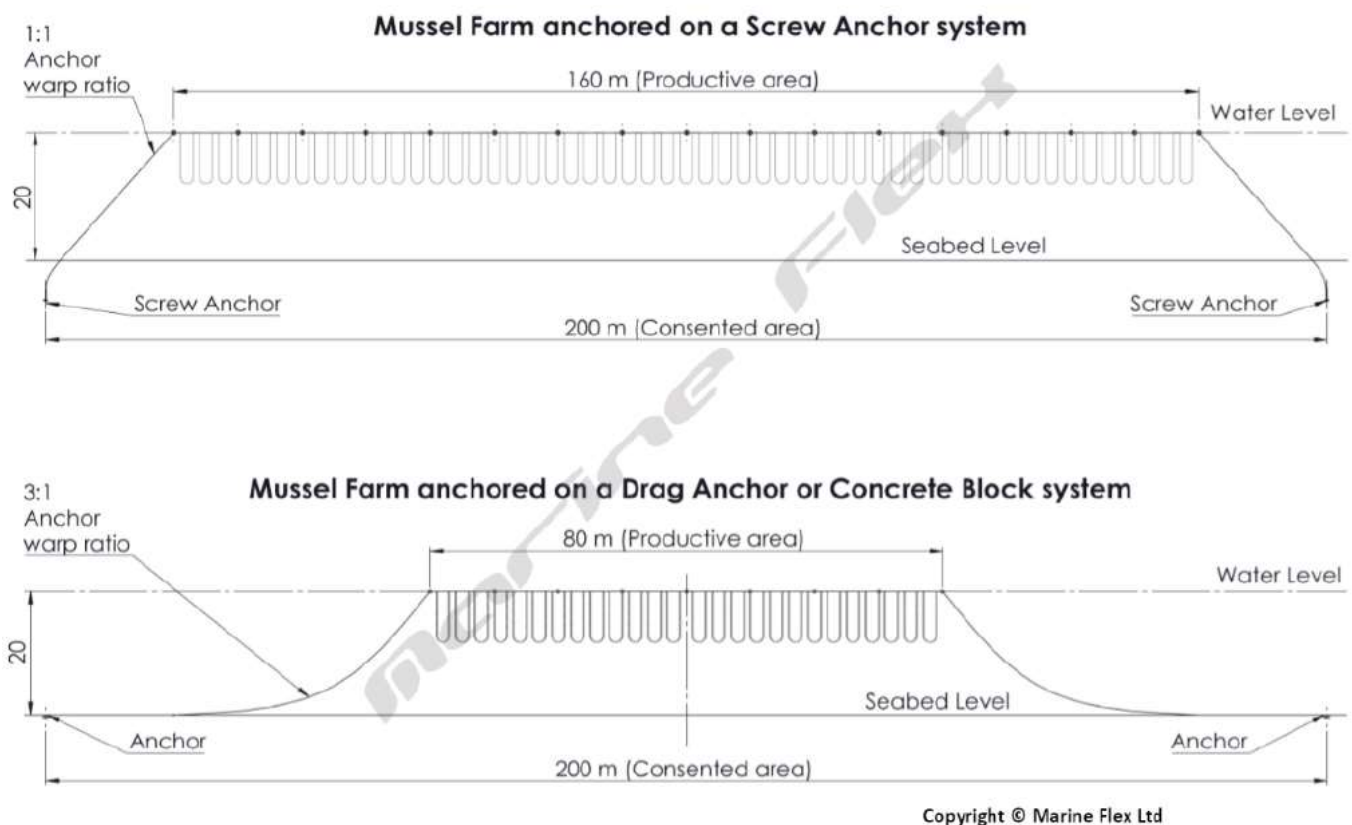


Figure 6 | Screw anchor system versus conventional anchor system

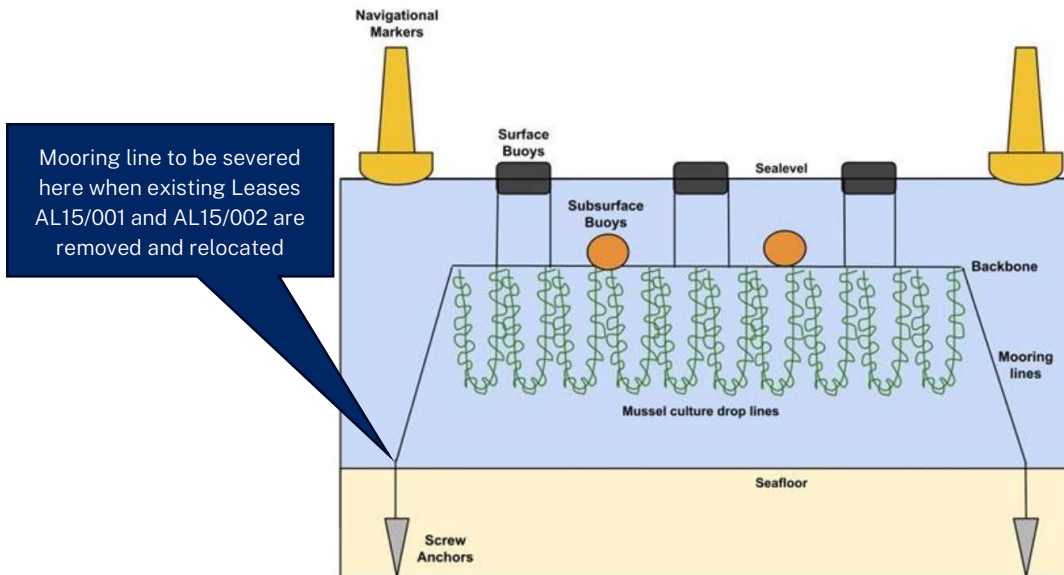


Figure 7 | Proposed longline infrastructure and screw anchor configuration

2.1.2 Cardinal Markers for Navigation

The modification seeks to reduce the number of navigational cardinal markers on the leases from ten to six. Four markers will delineate the corner points (North, East, South and West) and two mid-way markers will be placed halfway between the corner points, as illustrated on **Figure 8** below.

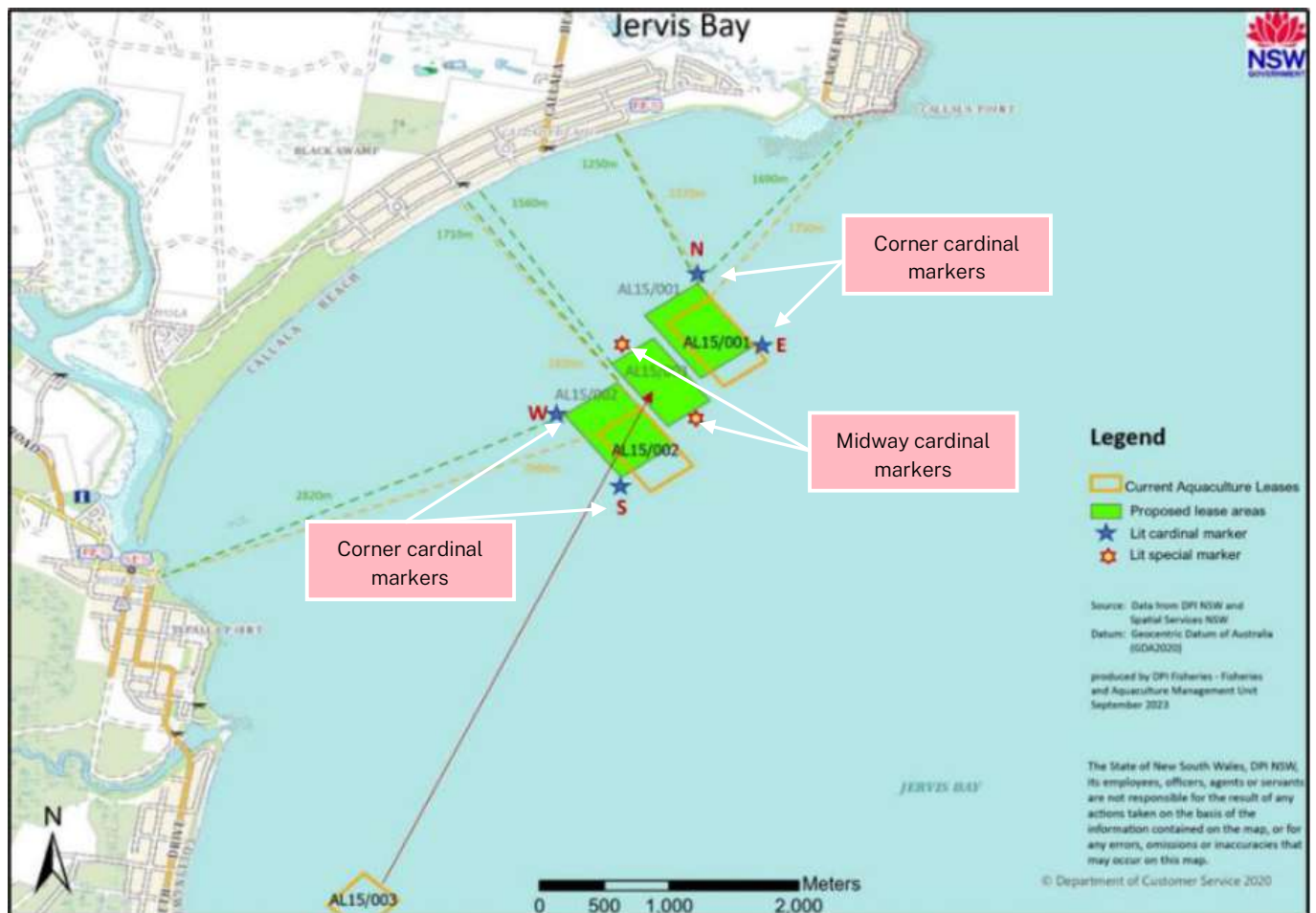


Figure 8 | Proposed location of cardinal markers

2.1.3 Species Permitted to be Farmed

SCM have been prevented from growing naturally occurring algae because of a clause in the Marine Estate (Management Rules) Regulation 1999 (Management Rules Regulation) that says - *aquaculture is not permissible in the habitat protection zone of the marine park, except extensive aquaculture of shellfish on long-lines*. DPIRD requested an amendment to the regulation in 2021 to remove the word “shellfish”, thereby permitting algal culture and it is understood this will be progressed under the marine parks review process (planned for 2025).

Under State Significant Infrastructure approval SSI-5657, naturally occurring algae are approved for culture on the three leases.

To ensure consistency with the Management Rules Regulation, the modification seeks to remove algae from the list of species permitted to be farmed on the leases.

2.2 Applicant’s Justification for the Proposed Modification

DPI advises the proposed modification aims to:

- improve community amenity by relocating the Vincentia lease
- correct an error in the co-ordinates for the two leases off Callala Beach, created when the maps were digitised in 2013
- allow for the realignment of mussel longlines for operational efficiencies
- increase the size of the lease areas from a total of 50 ha to 70 ha (a total increase of 20 ha) to allow for the realignment of longlines while still in production to enhance the economies of the business
- to adopt industry best practice to secure longlines utilising screw anchors and reduce the risk of faunal and environmental impacts.

3 Strategic Context

3.1 Key Strategic Issues

3.1.1 Marine Waters Sustainable Aquaculture Strategy

At the time the original application was assessed, there was no specific strategy for the development of marine waters aquaculture in NSW. According to DPI, the promotion of sustainable aquaculture was, however, prioritised at the NSW Executive Food Security Group in 2011. This was subsequently supported by work carried out by DPI, the State Aquaculture Steering Committee (a high-level state government multiagency group tasked with promoting sustainable industry development), Shoalhaven City Council, the University of Wollongong and the NSW Marine Parks Authority.

In 2018, the State Aquaculture Steering Committee released the MWSAS which has been adopted as an Aquaculture Industry Development Plan (AIDP) under the *Fisheries Management Act 1994* (FM Act). The MWSAS provides a regulatory framework, industry best practice standards, suitable marine aquaculture investigation areas and guidance for government and industry in the development of marine waters aquaculture.

Implementation of the MWSAS is supported by provisions in State Environmental Planning Policy (Primary Production) 2021 (Primary Production SEPP). The proposed modification has been developed in accordance with the site selection and industry best practice criteria set out in MWSAS.

The Department considers the modified development is consistent with the MWSAS.

4 Statutory Context

4.1 Scope of Modification and Assessment Pathway

Details of the assessment pathway under which the modification is sought is outlined in **Table 2**.

Table 2 | Assessment Pathway

Consideration	Description
Scope of modification	In accordance with section 5.25 of the EP&A Act, a proponent may request the Minister to modify the approval for State significant infrastructure. The Minister's approval for a modification is not required if the infrastructure as modified will be consistent with the existing approval. The expansion and relocation of the three extensive aquaculture leases is not considered consistent with the existing approval. Consequently, modification of the Minister's approval under section 5.25 of the EP&A Act is required.
Approval Authority	Minister for Planning and Public Spaces The Minister is the approval authority under section 5.25(4) of the EP&A Act.
Decision-maker	Executive Director, Energy, Resources and Industry Assessments Under the Minister's delegation of 9 March 2022, the Executive Director, Energy, Resources and Industry Assessments, may determine the application under delegation as: - the application has not been made by a person who has disclosed a reportable political donation under section 10.4 of the EP&A Act - there are less than 50 public submissions (other than a council) in the nature of objections, and - Council has not made a submission by way of objection under the mandatory requirements for community participation listed under Schedule 1 of the EP&A Act.

4.2 Other Approvals and Authorisations

4.2.1 Fisheries Management Act 1994

All three leases are approved under section 163 of the FM Act and leased to SCM. If the proposed modification is approved, DPI will reissue the leases to SCM. The leases will need to be resurveyed in accordance with section 169 of the FM Act.

The project operates under a Class A Aquaculture Permit (AP2554) issued by DPI under section 144 of the FM Act to SCM. A variation to the permit will be required if the modification is approved.

4.2.2 Marine Estate Management Act 2014

A Marine Park Permit (MEAA23/51) was also issued by DPI to SCM under the *Marine Estate Management Act 2014* (MEM Act) and Marine Estate Management Regulation 2009 (now repealed) for

the installation of the anchoring system. DPI have confirmed a new Marine Park Permit will need to be issued prior to installation of the additional screw anchors in the seafloor. SCM will also need to apply for a second Marine Park Permit to carry out aquaculture in the JBMP Habitat Protection Zone. These permits will be issued under the Marine Estate Management Regulation 2017.

Currently, the three leases are in a Habitat Protection Zone within the JBMP. In accordance with clause 3.7 of the Marine Estate Management (Management Rules) Regulation 1999, extensive aquaculture of shellfish on long-lines is permissible within the Habitat Protection Zone of JBMP. The three leases would remain within the Habitat Protection Zone of JBMP under the proposed modification.

4.2.3 Food Regulation 2015

SCM hold a Food Authority Licence issued by the NSW Food Authority under the Food Regulation 2015. This will be unaffected by the proposed modification.

4.2.4 Control of Naval Waters Act 1918

As Jervis Bay has been declared Naval Waters under the *Control of Naval Waters Act 1918*, the Department consulted with the Department of Defence (Defence) as part of the modification assessment. Defence confirmed the leases would be outside the restricted airspace of the HMAS Creswell and Beecroft Weapons Range.

5 Engagement

5.1 Department's Engagement

5.1.1 Public exhibition of the Modification Application

After accepting the modification application, the Department:

- made the documents publicly available on the NSW planning portal
- publicly exhibited the modification from 28 November 2023 until 11 December 2023 on the NSW Planning Portal
- notified each person who made a submission in relation to the original application
- notified and invited comment from relevant government authorities and Council.

On 22 November 2023, the Department carried out a site inspection of the existing operational lease areas off Callala Beach and the land-based processing facility at Huskisson (approved under Council consent DA21/2284).

During the public exhibition period, the Department received 46 public submissions (four from special interest groups and 42 submissions from individuals), a submission from Shoalhaven City Council, commenting on the modification, advice from four State government authorities and from one Commonwealth government authority.

5.2 Summary of Advice Received from Government Authorities

A summary of the advice received from government authorities is provided in **Table 3**. A link to the full copy of the advice is provided in **0**.

Table 3 | Summary of Government Authority Advice

Authority	Advice Summary
Former Department of Climate Change, Energy, the Environment and Water – Biodiversity, Conservation and Science (BCS)	Raised the following concerns: • the cultured species of Blue Mussel, <i>Mytilus galloprovincialis</i>, is not considered indigenous to the JBMP, and may compete with the indigenous species, <i>Mytilus planulatus</i>, and recommended SCM be required to use <i>M.planulatus</i> for seeding • potential impacts on ecosystem structure and species richness as a result of increased spatfall (the settling of young mussels to a surface or substrate) from <i>M.galloprovincialis</i> • increased fouling of mussels on recreational vessels • inconsistency with the requirement to 'manage physical interactions with wildlife and not negatively impact the biodiversity of adjacent ecosystems' in the United States <i>Best Aquaculture Practices Certification Standards, Guidelines</i> (Best Aquaculture Practices, 2023).

Authority	Advice Summary
	Recommended the Marine Fauna Interaction Management Plan be updated.
Heritage Council of NSW	Advised the modification has the potential to affect State significant marine archaeology and therefore a new analysis of the possible effects on underwater cultural heritage (UCH) sites should be required. Raised concern the assessment of UCH was insufficient and recommended the following actions be carried out: • an adequate desktop study to determine the locations and possible significance of sites in the proposed lease areas • an underwater visual inspection of the seabed to confirm the presence of any UCH sites • if any sites are found, prepare a Statement of Heritage Impact • prepare an Unexpected Finds Policy for UCH sites.
Heritage NSW	Agreed with the findings of the Applicant's assessment of Aboriginal cultural heritage impacts, which found no Aboriginal cultural heritage would be impacted as the works are sea based and no known Aboriginal heritage sites or Aboriginal places are located in the vicinity.
Transport for NSW (TfNSW) – Maritime	Noted the proposal was likely to have a lesser impact on navigation as the leases are consolidated into one large area, rather than three separate smaller areas. No concerns were raised. Confirmed that all TfNSW Maritime requirements regarding lighting and marking and navigation had been adequately addressed.
Commonwealth (Cth) DCCEEW	Noted the previous decision under the EPBC referral requirements that the mussel farming activities in Jervis Bay are not a controlled activity if undertaken in a particular manner (NCA-PM). Advised it is the responsibility of SCM to comply with national law and be certain the modification would not have an impact on any Matter of National Environmental Significance (MNES). Recommended the Proponent carry out a self-assessment of any impacts on nationally listed species under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act), including the White's Seahorse or any other listed species up until the completion of the development.

5.3 Summary of Council Submission

Shoalhaven City Council raised no objection to the modification and advised Council did not wish to make any comment.

5.4 Summary of Public Submissions

Of the 46 public submissions, 31 objected (three interest groups, 28 individuals), seven supported the project (all individuals) and eight (one interest group, seven individuals) provided comment.

Key concerns raised in the public submissions related to impacts on biodiversity and ecological integrity of the JBMP, the introduction of an invasive (non-native) species of mussel to Jervis Bay, biosecurity, spat distribution and biofouling (the accumulation of mussels on submerged surfaces) on boats, visual impacts, lack of community benefits, insufficient consultation, and navigational conflicts. Further detail on the submissions is provided in **Table 4** and **Table 5** below and a link to all submissions in full is provided in **0**.

Table 4 | Special Interest Group Submissions

Special Interest Group	Submission Summary	Position
Jervis Bay Cruising Yacht Club	Objected to the modification because of the potential for conflict with sailing racing courses, increase in biofouling of boats and resulting maintenance costs, and the potential for the expanded lease areas to cause a navigational hazard.	Object
Our Future Shoalhaven	Objected to the modification because of the farming of a non-native species of Blue Mussel (<i>M.galloprovincialis</i>) and the risk of a biosecurity threat from bringing spat from Eden, the ongoing ecological impacts to the JBMP and the cost to the community of biofouling of boats and negative impact on tourism. Recommended the modification not be approved until independent research is carried out to establish the level of spread of <i>M.galloprovincialis</i> occurring as a result of the mussel farm and a review of management steps required to prevent these impacts.	Object
Jervis Bay Community Cruiseship Coalition	Objected to the modification because of the farming of a non-native species of Blue Mussel (<i>M.galloprovincialis</i>), biofouling on boats in Currumbene Creek, the risk of a biosecurity threat from bringing spat from Eden, and threat to the primary purpose of the JBMP to conserve biological diversity and maintain ecosystem integrity and ecosystem function. Recommended the modification not be approved until an independent or Marine Park researcher led study into the spread of <i>M.galloprovincialis</i> in Jervis Bay and Currumbene Creek has been carried out.	Object
Huskisson Woollamia Community Voice	Raised concerns regarding biofouling on boats in Currumbene Creek, farming of a non-native species of Blue	Comment

Special Interest Group	Submission Summary	Position
	Mussel (<i>M.galloprovincialis</i>), biosecurity threats posed by bringing spat from Eden. Requested research be done to investigate the source of the mussels invading Currumbene Creek prior to approval of the modification. Also requested a change to management practices to ensure the mussel farm is not a source of spat or biosecurity threat.	

Table 5 | Key issues Raised in Public Submissions

Issue	Number (%) of Submissions
Harm to biodiversity and ecological integrity of the JBMP associated with farming of an invasive species	21 (46%)
Biosecurity risks associated with translocation of spat from Twofold Bay and from farming an invasive species	19 (41%)
Spat distribution and biofouling on boats	14 (30%)
Visual impacts from leases being larger and closer to shore	12 (26%)
Lack of benefit to the community	9 (20%)
Insufficient response to community concerns on original application, inadequate consultation by Proponent and lack of time to consider the modification	6 (13%)
Navigational conflicts	3 (7%)

5.5 Community Feedback

On 6 February 2025, the Jervis Bay Divers Club (JBDC) provided additional feedback on the modification application. The JBDC advised they had observed an increase in mussels in areas of the JBMP where they had not been previously found, particularly on reefs and rock shelves in the north and southern sides of the bay. JBDC raised concerns that proliferation of mussels was caused by spat released from the SCM farm and not a natural event, and that the mussels may out-compete other species within the JBMP, impacting on the integrity of the marine park ecosystem.

5.6 Submissions Report

Following the public exhibition period, the Department requested the Proponent respond to the issues raised in submissions and the advice received from government agencies. The Department also requested the following additional information:

- evidence to demonstrate the species being farmed is indigenous to Australia

- an assessment of the potential impacts associated with leaving the screw anchors *in situ* following removal of the longline infrastructure
- details of management measures to minimise spatfall from the farmed mussels and research being carried out to establish the origins of the spread of *M.galloprovincialis* within the JBMP
- a more detailed visual impact assessment and an updated noise impact assessment
- confirmation that the control sites used for the water quality and benthic monitoring program remain appropriate
- an updated table of mitigation measures.

On 29 May 2024, the Proponent submitted a Submissions Report which included a screw anchor risk assessment, an updated noise assessment, a desktop UCH database search, a further assessment of visual impacts and additional information regarding the self-assessment carried out by the Proponent in relation to threatened/protected species and MNES. The Submissions Report also committed to the following:

- an underwater UCH survey prior to installation of the new lease areas, including a State of Heritage Impact (SOHI) if UCH sites are found and development of an Unexpected Finds Policy
- design and implement a Spatfall Monitoring Program following approval of the modification to determine if spatfall increases when the farm is moved and expanded and to determine the source of biofouling in Currumbene Creek
- relocation of the Xylem weather monitoring buoy to minimise visual impacts and maximise the chances of detecting water quality impacts due to farming activities
- changes to and continuation of the benthic monitoring and water quality programs
- updates to the Disease, Parasite and Pest Management Plan (DPPM Plan) and Marine Fauna Interaction Management Plan (MFIM Plan).

An updated Mitigation Measures Table was also provided incorporating the commitments made.

BCS advised it was of the view the screw anchors should be removed and maintained its view that the Blue Mussel being farmed, *M.galloprovincialis*, is not native to Australia. BCS recommended the species issue be resolved by seeking expert advice on the historical distribution of *M.galloprovincialis*, potentially through genetic examination at midden sites. BCS also questioned how the Spatfall Monitoring Program would determine whether increased spatfall is uniquely from the mussel farm or wild stock. BCS recommended modifying the existing condition which requires mussels to be harvested prior to spawning 'where possible', to ensure harvesting always occurs prior to spawning.

Department of Planning, Housing and Infrastructure – Crown Lands (DPHI-Crown Lands) did not raise any concerns regarding the screw anchors remaining *in situ* and noted the anchors would be managed as DPI assets, subject to DPI's own policies and procedures.

Department of Defence (Defence) advised it had no objection to the screw anchors remaining *in situ*. Defence also confirmed the relocated leases would be outside the restricted airspace (public safety area) of the HMAS Creswell and Beecroft Weapons Range.

Council noted the proposal was on an area not managed by Council, and suggested the Department consider requesting further information in the form of a coastal report to determine that no neighbouring lands are impacted on by the relocation and expansion of the Jervis Bay Mussel Farms in line with State Environmental Planning Policy (Resilience and Hazards) 2021.

Heritage Council reiterated its view that the UCH inspection of the seabed was required prior to a determination of the modification to determine if any items of UCH are present in the new lease areas. The Heritage Council also confirmed any SOHI must be carried out prior to a determination to ensure the impact of the modification is appropriately assessed.

TfNSW reaffirmed the relocated leases represents a better safety, environmental, access and amenity outcome as compared to the approved project. TfNSW advised the consolidated location of the leases at Callala Beach would make the lease area more easily delineated by vessel operators and reduce the requirements on the infrastructure owner and subsequent environmental impacts. TfNSW noted the requirements of the *Marine Safety Act 1998* would still apply in relation to safe navigation and the prevention of pollution.

Cth DCCEEW acknowledged the Proponent had completed a self-assessment of potential impacts to MNES and noted the range of mitigation measures proposed. It was also noted the advice from Cth DCCEEW did not constitute an endorsement or decision under the EPBC Act.

On 21 June 2024, the Department requested the Applicant respond to the outstanding matters raised by BCS and the Heritage Council and provide further information regarding the findings of the screw anchor risk assessment, the weather buoy location (noting the visual impacts of the buoy had been raised as an issue by the community) and a revised noise impact assessment.

Three meetings were subsequently held in July 2024 between the Department, the Proponent and BCS to discuss the outstanding concerns raised by BCS.

5.7 Additional Information

On 7 August 2024, the Proponent provided further information to resolve concerns raised by the Department, BCS and the NSW Heritage Council regarding ecological impacts caused by leaving the screw anchors *in situ*, farming of a non-native species, spatfall monitoring and uncertainty regarding impacts on UCH.

BCS advised it remains of the opinion the screw anchors should be removed. BCS also recommended further research be carried out on the historical distribution of *M.galloprovincialis* to determine the genetic history of mussels in Jervis Bay and if this species can be considered native and agreed with the Proponent's suggestion to include *M.planulatus* on the list of permitted species to be farmed in

the consent. With regard to spatfall monitoring, BCS advised it was not clear how this program would determine the likely source of spat if the species being farmed are the same as those in the wild.

NSW Heritage Council maintained its view that an UCH survey be undertaken prior to a determination and the assessment of UCH be carried out by a suitably qualified maritime archaeologist, including the preparation of a SOHI, if required, and an Unexpected Finds Policy.

On 12 September 2024, the Department facilitated a meeting between the Proponent and Heritage NSW to discuss the concerns raised regarding UCH. The Proponent subsequently agreed to carry out the UCH underwater survey and prepare a detailed assessment of UCH impacts.

On 7 February 2025, the Proponent lodged a maritime archaeological assessment which was referred to the Heritage Council for review. On 28 February 2025, the Heritage Council advised the assessment was acceptable and recommended conditions regarding maritime heritage management and unexpected finds.

On 5 March 2025, the Proponent submitted a copy of the draft Spatfall Monitoring Program to be implemented following determination of the modification.

6 Assessment

The Department has assessed the merits of the proposed modification. During this assessment, the Department has considered the:

- Modification Report and Submissions Report and Additional Information provided to support the proposed modification (see **Appendix A**)
- documentation and Department's assessment report for the original application (see **Appendix A**)
- submissions from the public and Council, and advice from State government authorities (**Appendix A**)
- relevant environmental planning instruments, policies and guidelines
- requirements of the EP&A Act.

The Department considers the key assessment issues are:

- species selection and biosecurity
- spatfall distribution
- screw anchor management
- visual.

The Department's assessment of other issues is provided in **Section 6.6** in **Table 6**.

6.1 Species Selection

The approval specifically identifies *Mytilus galloprovincialis* as the species of Blue Mussel to be farmed. The Proponent is not seeking to change the species of Blue Mussel being farmed as part of the modification, however, public submissions and BCS raised concerns the species of Blue Mussel being farmed, *M.galloprovincialis*, is not indigenous to the JBMP. This may be contrary to the Marine Estate Management Rules Regulation 1999 which stipulates that a person must not bring any exotic animal into a marine park. The community and BCS are concerned a non-native species may compete with the indigenous species, *Mytilus planulatus*, and adversely impact ecosystem structure with the JBMP. Stocking the leases with a species that is not from the endemic population would also be inconsistent with the conditions of approval.

Submissions and BCS recommended the Proponent carry out additional studies to determine the lineage of the farmed species of Blue Mussel and to understand the impacts of farming *M.galloprovincialis* over *M.planulatus* and recommended the Proponent consider using hatchery produced *M.planulatus*.

Proponent's Assessment

The Proponent acknowledged the concerns raised and carried out a literature review of current scientific research for the lineage of *Mytilus spp.* This review confirmed that *M.galloprovincialis* is a commonly farmed species internationally and while it may be an invasive species in parts of the world,

M.galloprovincialis found in the southeast of Australia is a regional endemic subspecies. This subspecies occurs with the native *M.planulatus*, and hybrids of the two species are common along the coast of Australia, as reported in recent literature (University of Queensland, 2024 (unpublished), Bramwell et al, 2024 and Zbawicka et al, 2022). Hybridisation is a natural process in mussels and has likely been occurring since *M.galloprovincialis* first entered Australian waters approximately one million to 600,000 years ago (Popvic et al, 2019). Self-sustaining populations of *Mytilus spp.* hybrids are found in every state where the environmental range extends (Zbawicka et al, 2022). The Proponent's literature review found there has been no evidence of the introduction of *M.galloprovincialis* from human activity in Australia (Popovic, 2019).

Furthermore, as *M.galloprovincialis* has had at least 600,000 years of co-existence with *M.planulatus*, the risk of competition is unlikely to increase as a result of the increase in mussel aquaculture in Jervis Bay as SCM only collect Blue Mussels found in the wild. Recent literature has confirmed this is the case (Zbawicka et al, 2022). SCM have not attempted to change the species mix naturally present. The Proponent's assessment concluded that further research on species identification is not warranted as the literature indicates *M.galloprovincialis*, and its hybrid sub-species, have co-existed in the NSW coastal waters, including Jervis Bay, for over half a million years.

The Proponent considers farming a pure strain of *M.planulatus* is not logistically or financially feasible and would not reflect the wild populations currently present in Jervis Bay. However, noting the possibility of *M.planulatus* being found in the wild, the Proponent recommended that *M.planulatus* be added to the list of species approved for farming to ensure both species, and any hybrids, are authorised for culture.

Prior to the expansion of the total lease area from 50 ha to 70 ha, the Proponent has also committed to carry out and report on genetic testing of wild mussels at the farm, various locations within Jervis Bay and at Twofold Bay and a location between the two bays. These sites have been selected based on existing mussel distributions and genetic data and will determine what species of Blue Mussel is present in Jervis Bay and these other locations currently, both wild and on the farm. This testing has already commenced and is being carried out in collaboration with the University of Queensland. The genetic testing will contribute to the knowledge of the species and its distribution and will form part of a broader Spatfall Monitoring Program proposed by the Proponent to understand the natural distribution and variability of Blue Mussels in Jervis Bay (discussed in **Section 6.3** of this report).

Government Authority Advice

BCS acknowledged the findings of the Proponent's literature review indicate that the majority of Blue Mussels in the coastal waters of NSW are a hybrid species of *M.galloprovincialis* and *M.planulatus*. However, BCS maintained its view that *M.galloprovincialis* is a non-native species and therefore remains concerned that the farming of a hybrid native/non-native species would be inconsistent with the Marine Estate Management (Management Rules) Regulation 1999 (MEMMR Regulation) which states a person must not bring any exotic animal into a marine park.

BCS recommended that prior to the farm expansion, additional studies are undertaken to understand the impacts of farming *M. galloprovincialis* over *M.planulatus*, or alternatively, SCM move to hatchery production and seeding of *M.planulatus* to support re-establishment of this species in Jervis Bay.

Department's Assessment

It is important to note the Proponent is not seeking to change the species of Blue Mussel being farmed as part of the modification. It is therefore not necessary to re-assess the appropriateness of the species of Blue Mussel being farmed in the current modification assessment. Notwithstanding, the Department provides the following consideration of this issue to address the concerns raised by the community and BCS.

At the time the application was assessed and determined in 2014, the species proposed to be farmed was not raised as a concern. The conditions of approval adopted *M.galloprovincialis* as the species name for the Blue Mussel as this was the nomenclature recognised by the Fisheries Research and Development Corporation (FRDC) Fish Names Database for commercially farmed mussels in Australia at the time. The Department notes *M.galloprovincialis* is still the current accepted nomenclature for the native Blue Mussel, as recognised by Australian Standard AS 5300-2019 *Australian Fish Names Standard* (the Standard), and the current FRDC Fish Names Database (2024). The Standard states that the process of assigning the agreed names identified in the Standard drew on the expertise of several of the world's best fisheries taxonomists and other key stakeholders.

The Department acknowledges the lineage of *Mytilus* species in Australia has been the subject of scientific research for the last 20 years and continues to be an active area of research. Recent publications (Bramwell et al, 2024) and the Commonwealth DCCEEW Australian Fauna Directory (2023) confirm that the characterisation of the *Mytilus* spp. is not yet resolved. It is also noted that recent studies have also found that the majority of naturally occurring mussels on the NSW coastline are now hybrids of *M. galloprovincialis* and *M.planulatus* (Zbawicka et al., 2022 and University of Queensland, 2024 (unpublished)) and the two species and their hybrids are likely to have co-existed for at least 600,000 years.

The Department also notes the South Australian Department of Primary Industry's website states the South Australian mussel aquaculture industry is based on the production of *M.galloprovincialis*. Similarly, the *Victorian Protocol for the Translocation of Mussels* Fisheries Victoria Management Report Series No. 26 (the Protocol) states that evidence supports the taxonomic identity of Australian populations as *M.galloprovincialis* based on two decades of research using multivariate analysis, enzymes and genes. The Protocol also confirms that *M.galloprovincialis* has been found in middens which pre-date European settlement of Australia and is considered to be endemic to Australia.

The Department considers that, until such time a more definitive lineage is determined, *M.galloprovincialis* continues to be the accepted nomenclature for an endemic Blue Mussel species found and commercially farmed on the east coast of Australia, including in the JBMP.

Existing conditions require the Proponent to keep a record of all purchases of cultured stock including the date, names and addresses of sources, species, life-cycle-stage, quantities and health. To ensure there is oversight on this and the Proponent is meeting the requirements for stocking of the leases under the approval, it is recommended this condition be modified to require the Proponent to report all details annually as part of a Compliance Report to be submitted to the satisfaction of the Planning Secretary. The Compliance Report will replace the existing requirement for an Annual Report and ensure the Proponent is reporting on compliance with the conditions of approval in accordance with the Department's Compliance Reporting Post Approval Requirements (2020) guideline.

As natural populations of Blue Mussel have now been confirmed to consist of both *M.galloprovincialis* and *M.planulatus* and hybrids of both, the Department agrees with the Proponent and BCS that it is appropriate to add *M.planulatus* to the list of species permitted to be farmed at the Jervis Bay aquaculture leases. No change is required to the existing conditions regarding how the leases are stocked.

The Proponent's commitment to carry out genetic testing of mussels in collaboration with the University of Queensland will provide valuable data to inform the community and key stakeholders about the species of mussels found in the bay. While all mussels are expected to be *M.galloprovincialis*, *M.planulatus* or a hybrid of the two, the genetic testing will be able to determine whether the mussels are from the same specific gene pool as the farmed mussels. The genetic testing will be incorporated into a broader Spatfall Monitoring Program being developed by the Proponent to verify and better understand the natural distribution and variability of Blue Mussel spatfall in Jervis Bay and to determine whether the recent increase in the abundance of wild mussels observed in the bay is being caused or exacerbated by farm operations. Details of the Program and what action will be taken by the Proponent in the event the genetic testing and Program find the farm is having an impact and/or significantly contributing to spatfall and biofouling is further discussed in **Section 6.2** of this report.

The Department's assessment concludes the modification is unlikely to introduce any exotic species of Blue Mussel to the JBMP as SCM will continue to farm cultured stock that have spawned from the endemic population or broodstock originating from the east coast of Australia, as required by the existing conditions of the approval.

6.2 Biosecurity

Submissions raised concern regarding biosecurity risks associated with bringing spat from Twofold Bay to be farmed in Jervis Bay. Twofold Bay is a port for international vessels, which is considered a high-risk area for marine pests and diseases and has recently had an increase in boat traffic. Concerns were also raised as to whether there would be an impact on the genetic integrity of wild mussel populations in Jervis Bay from the farming of *M.galloprovincialis*, as well as a possible increase in competition for resources.

Proponent's Assessment

The Proponent confirmed that spat for the SCM farms is currently sourced from Twofold Bay which is part of the same genetic population as that in Jervis Bay. The translocation of spat is managed in accordance with the bespoke NSW Blue Mussel Spat Translocation Protocol (Twofold Bay to Jervis Bay)) (the Protocol) approved by the NSW Chief Veterinary Officer in 2018 and most recently updated by the Manager of Aquatic Biosecurity, DPIRD, in 2022. The Protocol sets out biosecurity requirements SCM must implement to move Blue Mussel spat from Twofold Bay to Jervis Bay for commercial aquaculture grow-out, including pre-translocation requirements, inspection and monitoring requirements of fouling organisms and pre-translocation treatments. SCM's aquaculture permit requires SCM to only translocate Blue Mussels into Jervis Bay that meet the Protocol requirements.

If the proposed modification is approved, the Proponent has confirmed spat translocation operations will continue to be carried out in accordance with the requirements of the approval. However, the NSW DPI Spat Translocation Protocol (2022) will be reviewed and updated as necessary to ensure the risk assessment and process remains current and effective and captured within the updated Disease, Parasite and Pest Management Plan (DPPMP). A review of the DPPMP will also consider the risk posed by new pest species and increased boat traffic in Twofold Bay.

Further, to complement the proposed modification to the approval to include *M.planulatus* as an approved species to be farmed, the Proponent has committed to amending the translocation protocols for hatchery sourced spat to include *M.planulatus* as well as *M.galloprovincialis*.

Government Authority Advice

None of the government agencies raised specific concerns regarding biosecurity protocols, however, it is noted BCS raised concerns regarding the potential impacts on ecosystem structure and species richness as a result of farming *M.galloprovincialis* (as discussed in **Section 6.1** above).

Department's Assessment

With regards to biosecurity concerns, the Department notes the existing farm operations must operate under the Protocol which was approved by the NSW Chief Veterinary Officer in 2018. The Protocol includes a suite of biosecurity conditions and requirements to minimise the risk of the introduction of diseases and pests from Twofold Bay into Jervis Bay during translocation of Blue Mussel spat between the bays. The Protocol has also been informed by AQUAPLAN: Australia's National Strategic Plan for Aquatic Animal Health and is therefore considered to be best practice and consistent with national requirements.

Existing conditions require the Proponent to prepare and implement a Disease, Parasite and Pest Management Plan (DPPMP) which requires monitoring of stock health and biofouling and inspection of longline infrastructure to identify any disease or parasites. The Proponent has committed to update this to address new pest species and increased boat traffic in Twofold Bay which will ensure the DPPMP is contemporary and will continue to provide an appropriate framework to manage biosecurity risks for the expanded farm. Existing conditions also require compliance with all applicable

requirements for known disease events or government directions regarding the management and/or disposal of diseased stock.

The new requirement for the Proponent to prepare and submit a Compliance Report (as discussed above) will ensure the farm is reporting on its compliance and performance in line with contemporary compliance reporting requirements and will act as an additional layer of oversight on biosecurity protocols. The requirement for an independent audit to be carried out tri-annually will be maintained to ensure there continues to be independent oversight across farm operations.

Regarding the risk of farming an introduced non-native species, as raised by BCS, this matter has been addressed in **Section 6.1** above. Existing conditions require cultured stock to be from natural spat-fall or sourced in accordance with the NSW DPI hatchery and translocation protocols. The Department is therefore satisfied that the existing conditions require SCM to only farm Blue Mussels that are naturally present on the east coast of Australia and therefore indigenous to the JBMP. SCM will continue to cultivate mussels in accordance with the conditions of the approval and the relocation and expansion of the leases are unlikely to pose a threat to the genetics of the local population.

In recognition of BCS' recommendation to source *M.planulatus* spat from a hatchery, the Department supports the Proponent's commitment to revise the existing hatchery and translocation protocol for the translocation of spat to include *M.planulatus*, in addition to *M.galloprovincialis*.

The Department's assessment concludes the modification is unlikely to present any new biosecurity risks subject to the implementation and update of the existing DPPMP and compliance with the existing conditions of approval regarding stock health and disease management.

6.3 Spatfall Distribution

Public submissions and BCS raised concerns regarding the increase in biofouling on boats, particularly in Currambene Creek (see **Figure 9**) because of mussel farm operations. Anecdotally, biofouling is reported to have increased since mussel farming operations commenced in 2019 and is believed to be causing both environmental and economic issues. BCS advised that increased spatfall has the potential to interfere with ecosystem integrity and ecosystem processes.

In February 2025, further concerns were raised by the Jervis Bay Divers Club Inc (JBDC) regarding a recent proliferation of mussels observed in Jervis Bay in late 2024. Mussels were reported to have been observed on the northern side of the bay in an area where mussel populations had not previously been seen by the diving community. JBDC advised there was a risk the proliferation of mussels would displace other marine communities of corals, sponges and other small marine creatures within the Sanctuary Zone of the Marine Park, which is to be afforded the highest level of protection under the Marine Park zoning rules. The JBDC highlighted the observed proliferation of mussels places the integrity of the Marine Park ecosystem at risk and requested the expansion of the farm be delayed until a comprehensive investigation of the matter is completed.

Proponent's Assessment

The Proponent's modification report confirmed there is a history of mussel settlement in Jervis Bay and Currambene Creek prior to mussel farm operations. Historical records from the Australian Museum (2023) indicate the presence of Blue Mussels in and around Jervis Bay since the 1970s, with anecdotal reports citing the presence of mussels in Currambene Creek in the 1950s.

In terms of spatfall distribution in Jervis Bay, the Proponent advised oceanic currents in Jervis Bay are characterised by a persistent flow in a clockwise direction due to warm currents driven by the East Australian Current mixing with the periodic upwelling of cold, nutrient rich waters from the nearby Continental Shelf (see **Figure 9**). These combined currents flush out the bay every 24 days or so. Given the clockwise current flow in Jervis Bay, the Proponent stated that it is expected that spatfall from the mussel farm, which is located to the north of Currambene Creek, would move offshore and not circulate back into the bay or into Currambene Creek.

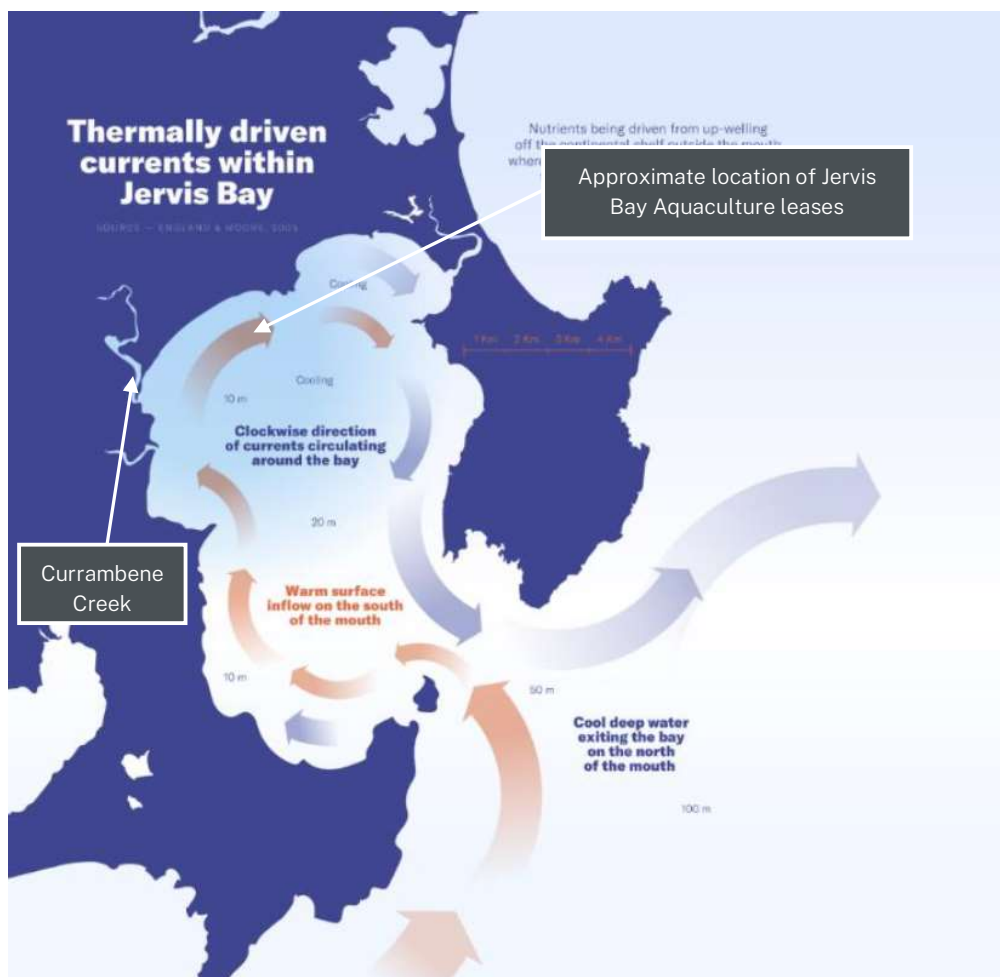


Figure 9 | Oceanic Current Movements in Jervis Bay

The Proponent's assessment concluded spatfall arising in the bay, particularly around Currambene Creek, comes from wild stock, and not from the farm. Therefore, the risk of an increase in mussel biofouling in Jervis Bay on infrastructure such as moorings and boats, due to the modification is low.

Furthermore, the Proponent advised that mussel spawning is highly sporadic in nature and as such there are 'boom and bust' cycles. The relatively small number of mussels at the aquaculture farm

would unlikely drive wild population dynamics, particularly given the nature of currents moving through Jervis Bay which would be more likely to be driving the distribution of spat and location of mussels found in the bay. Spawning is a natural event that typically occurs between June to October, for the *Mytilus* spp., and such an event is the likely cause of recent observations of an increase in the abundance of mussels in Jervis Bay.

To minimise any spatfall from the aquaculture leases, SCM confirms it carries out a cleaning protocol after harvesting the leases and transports all harvested mussels (and spat) in bags to the processing facility. The Proponent also confirmed that SCM harvest mussels prior to spawning where possible (generally between 10-14 months in age), as required by the existing conditions of approval. This is in SCM's best interest, as, after spawning the product's quality is compromised as meat content decreases immediately after this natural process. SCM therefore monitor flesh quality and mussel condition to time harvests prior to spawning.

Notwithstanding the Proponent's understanding of the natural movement of spat in Jervis Bay, the Proponent has advised it will research spatfall patterns and distribution further to confirm these assumptions and further address the community's concerns.

The Proponent has committed to design and carry out a Spatfall and Genetics Monitoring Program (the Program) commencing in mid-2025, to test if spatfall changes and/or increases during the known spawning season for *Mytilus* spp.. Sampling will start prior to the mussel lease expansion and continue for a minimum period of three years to determine if spatfall changes over time. In the event there is a statistically significant difference in spatfall from baseline records, spat will be genetically tested to confirm if it is originating from farmed stock. The rationale for commencing monitoring as soon as possible is to collect data on spatfall levels under the current, and relatively lower levels of mussel farming intensity (50 ha stocked at less than 40% capacity).

The Program will build on previous work done as part of a PhD thesis by Borschmann (2022), using the same locations and techniques, which will result in four years of data collectively and a better understanding of local trends. On-farm management responses to address excessive farm-related spatfall may include developing a stock seeding schedule to work around peak spawning mussel periods and managing stocking densities on the longlines.

The Proponent has committed to keeping the community informed regarding the outcomes of the Program and to review the Program after three years, and future continuation of the Program considered in consultation with NSW DPHI. In addition, the outcomes of the Program will be communicated to all stakeholders via the Community Stakeholder Plan. The Plan will be updated to reflect that advisory and educational material will be provided to the community on the genetic analyses and also the Spatfall Monitoring Program. DPIRD will establish and administer an advisory group comprising key stakeholders (Jervis Bay Marine Parks, South Coast Mariculture, DPIRD, key associations, traditional owners, Jerrinja Tribal Council and Jerrinja Local Aboriginal Land Council. The advisory group will meet every six months or as otherwise needed.

In relation to the risk of Blue Mussels outcompeting other marine species and having adverse effects on the marine park ecosystem, the Proponent advised that research has shown mussels have a positive impact on the environment and the surrounding marine ecosystem. Shellfish reefs provide structural habitat which supports many other marine species. Mussels also provide water filtration, improving water clarity, which encourages the growth of marine plants, such as seagrass. In this regard, the Marine Estate Management Authority is encouraging local councils to embed shellfish reef restoration into their Coastal Management Program within the Port Stephens-Great Lakes Marine Park and the Wagonga Inlet near Narooma. These Shellfish Reef Restoration Projects are establishing a framework to efficiently deliver future shellfish reef restoration projects across the marine estate.

Government Advice

BCS recommended the Proponent amend harvesting operations to reduce the risk of spatfall and minimise the risk of the mussel farm operations adversely impacting on ecosystem structure, particularly noting its view on the species of mussel being farmed, as discussed in **Section 6.1** above. BCS also requested further information on remedial actions to be undertaken by SCM if the Spatfall Monitoring Program finds increased spatfall in the bay is caused by the farm and recommended the spatfall research be done prior to the expansion of the farm.

Department's Assessment

Based on the advice of the Proponent, marine aquaculture experts in DPIRD and the scientific literature, spatfall in Jervis Bay, and other estuaries in NSW, it is understood it is likely the increase in spatfall observed in Jervis Bay is caused by natural spawning events influenced by environmental conditions, settlement infrastructure, climate change and diseases. Notwithstanding, the Department acknowledges it is important to understand if this is the case this as soon as possible given the level of community concern and confirm if the source of the increase in mussels observed within Jervis Bay is being driven by the mussel farm or is the result of natural 'boom and bust' cycles to address the immediate concerns of the community and BCS.

The Department therefore supports the Proponent's proposal to carry out a Spatfall Monitoring Program to better understand natural spatfall distribution patterns in Jervis Bay over time. This will provide a better understanding of seasonal trends associated with 'boom and bust' cycles and/or if the SCM mussel farm is increasing spatfall around Jervis Bay and causing biofouling in Currambene Creek. The proposed Program will also ensure appropriate remedial actions are implemented by SCM should the program find the SCM mussel farms are contributing to biofouling in Currambene Creek and/or driving the increase in mussels found throughout the bay.

Conditions are recommended requiring the Program to commence within six months of the determination of the modification and for the findings of the Program to be reported annually to the Planning Secretary for a minimum period of three years. This will provide the Department and the community with information on spatfall distribution within Jervis Bay prior to and after the farm relocates. Each annual Spatfall Monitoring Report must include an action plan and timetable for any remedial actions required to be implemented by the farm operator. The Planning Secretary will review

the findings and recommendations of a Spatfall Monitoring Program Report (the Program Report) and ensure any remedial actions are being implemented in accordance with the action plan.

In the event the Planning Secretary considers additional management or remedial measures are required to be implemented to reduce or prevent spatfall from the farm following a review of the Program Report, existing condition B4 on the project approval enables the Planning Secretary to direct the Proponent to implement these additional remedial measures.

Recommended conditions also require the Proponent to update the existing approved Community and Stakeholder Plan to include details of how the findings of the Spatfall Monitoring Program will be communicated to the broader community to ensure transparency and accountability with the Program findings and recommendations.

The Department notes the 2022 Independent Audit of the SCM farming operations confirmed compliance with all protocols and procedures required to be implemented to minimise the risk of spatfall from the farm. Furthermore, monitoring of water quality, gross seabed characteristics, sedimentary characteristics, and the benthic marine environment required under the conditions of the project approval, provide no evidence that the existing farm operations are having an adverse effect on the marine environment in this area of Jervis Bay.

The Department notes mussel farming is a very low impact form of aquaculture as the mussels feed on naturally available food in the water, rather than using supplementary food to grow. The Department notes existing conditions will ensure the Proponent continues to carry out monitoring of water quality and the health of the benthic marine ecosystem to demonstrate the farm is not having an adverse impact on the marine environment. In addition, there will continue to be independent oversight of all farm operations through the requirement of tri-annual independent audits to be reported to the Planning Secretary.

It is acknowledged it is in SCM's interest to harvest the mussels prior to spawning to ensure optimal meat quality and SCM harvest every weekday except in the event of severe weather conditions. The Department therefore considers the risk of mussels being harvested after they have spawned is low, albeit there may be occasions where harvesting is not possible due to weather conditions.

In recognition of the concerns raised regarding the existing condition that states harvesting is to occur prior to spawning 'where possible', conditions are recommended requiring the Proponent to provide details of, and the reasons for, any significant delay in harvesting mussels prior to spawning and details of remedial actions taken to prevent this from re-occurring in the annual Compliance Report. Measures to improve environmental performance of the project over the next year are also required to be identified, therefore if better harvesting techniques are identified, these can be incorporated into SCM's operating procedures.

The Department's assessment concludes the expansion of the SCM mussel farm is unlikely to have any adverse impacts on the ecological integrity of the JBMP as benthic monitoring has confirmed the farm is not having any adverse impacts on the marine environment, despite increased observations of

mussels and spatfall throughout the bay. Additionally, spatfall in Currambene Creek is unlikely to be from the farm given the movement pattern of natural thermal driven currents within the bay. The Program will verify this and if necessary, the Department is satisfied appropriate remedial actions will be implemented should the farm be found to be driving the increase in spatfall observed.

6.4 Screw Anchor Management

The modification seeks to permit SCM to leave up to 312 screw anchors *in situ* four metres below the seafloor when the farm is decommissioned on the basis that removal of the anchors would cause more environmental harm than leaving them in place. This would require a modification to the existing conditions which require the removal of all infrastructure at decommissioning.

BCS raised concern that leaving the anchors *in situ* has the potential to have adverse impacts on the benthic ecology and marine water quality and considers there is no compelling evidence that removal of the screw anchors will have a negative environmental impact. BCS maintains its view the screw anchors should be removed when the farm is decommissioned as required by the existing conditions.

Proponent's Assessment

The Proponent's assessment confirmed the proposed use of screw anchors is part of SCM's broader business plan to achieve best practice and economies in mussel farming operations. The screw anchor system is designed to increase stability, minimise the potential impact on seafloor and benthic environment, decrease the risk of marine entanglement by ensuring the mooring lines remain taut, and have a higher holding capacity.

In response to concerns raised by the Department and BCS regarding the potential adverse environmental and social impacts of leaving the screw anchors *in situ*, the Proponent carried out a Screw Anchor Risk Assessment (SARA). The SARA identified potential hazards associated with leaving the screw anchors *in situ* and for removal. The analysis was carried out separately for the 88 existing screw anchors already deployed for the existing leases and the 224 proposed anchors to be installed when the leases are relocated, and the new farm infrastructure is deployed (a total of 312 anchors).

Hazards associated with leaving the screw anchors *in situ* included reputational risk to NSW government and marine aquaculture industries, legislative risk if other approvals/permits are not granted, contaminant release from discarded infrastructure and community risk to bequest and intrinsic values of the JBMP.

Hazards associated with removing the screw anchors, which are embedded approximately four metres below the seafloor, included seabed disturbance and reduced water quality, nutrient and contaminant release, localised effects on the benthic environment, risk to Aboriginal cultural heritage sites, risk to maritime archaeology and work, health and safety risks.

For the two analyses carried out, the revised SARA found that leaving the screw anchors in the sediment is of lower risk to the environment than removing the screw anchors. Overall, both

assessments found there is unlikely to be a significant risk to the environment from either removing the screw anchors or leaving them *in situ*.

Proposed controls for leaving the anchors *in situ* included:

- preparation and implementation of a communications plan for marine park stakeholders
- development of a Screw Anchor Management Plan (SAMP) under which the anchors would be monitored and managed
- monitoring of the anchors by remote operated vehicle (ROV) for potential seabed and/or epibenthic flora and fauna impacts
- early engagement with government stakeholders regarding relevant permits and approvals.

The SARA concluded the screw anchors should be left *in situ*, however, should removal of the anchors be deemed necessary in the future due to environmental impacts, or if required under the approval or a marine park permit, the screw anchors would be removed.

Government Authority Advice

BCS advised there is no compelling evidence that the removal of the screw anchors will have a negative impact. BCS therefore recommended the screw anchors are removed when the farm is decommissioned. DPHI-Crown Lands and Department of Defence did not raise any concerns with the anchors remaining *in situ*.

Department's Assessment

The Department notes screw anchors are increasingly being used in longline aquaculture and represent emerging best practice for the industry. The reported benefits of this anchoring system are also acknowledged, including minimal environmental impacts during installation, superior strength, integrity and stability, minimal impacts on the benthic environment, reduced risk of marine fauna entanglement as the lines remain taut, efficiency of installation and cost effectiveness. The Department therefore supports the use of this infrastructure for the expansion of the farm.

The Department is satisfied the SARA has assessed a worst-case scenario following decommissioning of the entire development, which may result in up to 312 screw anchors remaining *in situ* within the JBMP. The approach taken for the risk assessment is in line with accepted methodologies whereby the approach to risk management is guided by a risk matrix that considers the likelihood and consequence of potential hazards.

It is understood that the screw anchors, if left in the sediment, will be approximately four metres beneath the seafloor (refer **Figure 10**).

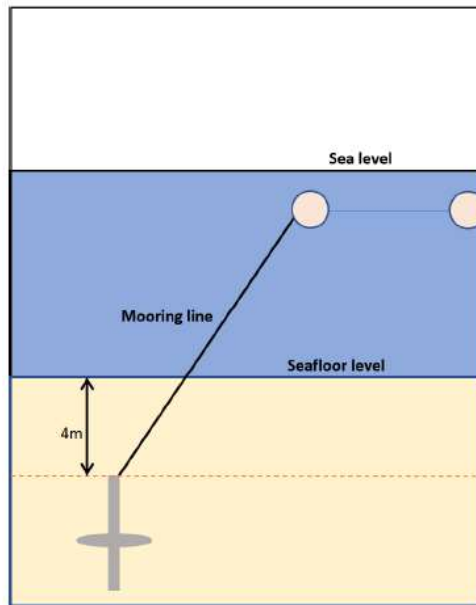


Figure 10 | Illustration of screw anchor system and drill depth

Based on the advice given by the Proponent, in many cases, screw anchors are not removed as it is generally accepted this may cause more environmental harm than leaving them in place under the sediment. An instance where screw anchors would be removed includes where the anchor is not always completely submerged (even from time to time due to sediment movement) which could create a navigational hazard.

However, while from an environmental perspective, the impact of leaving the anchors *in situ* is likely to be low risk, the Department has also considered the potential social and economic impacts associated with leaving the anchors *in situ*, noting the context of the farm within the JBMP, which has been established to help conserve the marine environment for present and future generations. This invokes consideration of the principles of ecologically sustainable development (ESD), notably the principle of intergenerational equity, and the object of the EP&A Act to facilitate ESD by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.

The Department notes the revised SARA identified two key social hazards with leaving the screw anchors *in situ*, including:

- reputational risk to the NSW government and marine aquaculture industries noting strong community interest in the JBMP and the legislative objectives to provide a high level of protection to its environmental and cultural values. This was reported as ‘likely’ with ‘major’ consequences and, even with mitigation such as a communications plan and SAMP, the risk remained ‘medium’
- risk to bequest and intrinsic values of the JBMP. This was reported as ‘almost certain’ with ‘moderate’ consequences, which again, even with mitigation (i.e. communications plan and SAMP) would remain ‘possible’ with ‘moderate’ consequences, and result in a risk rating of ‘medium’.

The intrinsic value of knowing that the marine environment is healthy and protected is a significant social and economic value, along with the bequest values of knowing that a healthy marine

environment will be available for future generations to enjoy. This is supported by the findings of the most recent NSW Marine Estate Community Wellbeing Survey (2024) that the ability to pass on a healthy NSW coast to future generations was of high importance.

Social risks with removing the screw anchors are limited to potential impacts to Aboriginal cultural heritage and UCH, and the health and safety risks to workers when operating the machinery to remove the screw anchors. However, risks to cultural heritage were found to be 'rare' and have 'minor' consequences, and while the consequences of health and safety hazards could be 'extreme', the likelihood of a serious injury is 'rare'.

Overall, the SARA indicates the risk to the environment is low whether the anchors are left *in situ* or if they are removed. However, the risk of adverse social impacts from leaving the anchors *in situ* in perpetuity in the JBMP is a concern and the Department considers this outweighs the environmental risks associated with removing the anchors. On balance, and having regard to intergenerational equity and the need to consider environmental and social impacts in the assessment of the modification, the Department is of the view the screw anchors should be removed following decommissioning of the longline infrastructure.

The Department therefore recommends the existing conditions requiring the lease areas to be cleared of all infrastructure including all moorings and longlines within one year of the cessation of operation and to prepare and implement a Decommissioning Management Plan (DMP) be retained. It is noted this is consistent with the conditions applied to other marine aquaculture projects in NSW such as the Port Stephens Finfish Research Facility (SSI-5118).

As the two existing leases off Callala Beach have already been deployed, when these are relocated up to 88 screw anchors will temporarily be left *in situ*, until such time the entire farm is decommissioned. To ensure these anchors are managed and monitored appropriately in this interim period to prevent any adverse environmental impacts on the JBMP ecosystem and navigation, the Department has recommended conditions requiring the Proponent to prepare and implement a SAMP.

The SAMP is to provide details of management actions to be implemented, details of a monitoring program that includes key performance indicators to evaluate the effectiveness of the management actions, monitoring of the seabed using a remote operated vehicle and a trigger action response plan that outlines clear triggers for management actions. If the monitoring finds these anchors are causing an environmental, social or navigational hazard before the farm is decommissioned, the Proponent must remove the anchors. The Proponent has agreed to this condition and has committed to updating the approved Decommissioning Management Plan to include details about the processes and approach for removal of infrastructure, in consultation with relevant stakeholders such as the Department of Defence, DPHI-Crown Lands and local Aboriginal communities.

The Department's assessment concludes the removal of the screw anchors when the farm ceases operations and is decommissioned is appropriate to ensure the marine environment is protected in its natural state for present and future generations, consistent with the principles of ESD.

6.5 Visual Amenity

Public submissions raised concern the longline buoys and navigational markers associated with the relocated and expanded lease areas have the potential to increase visual impacts from residential areas and key viewpoints in Callala Beach. Lighting impacts from the navigational markers was also raised by the community.

The Department noted the community's concerns and found the Proponent's assessment of visual impacts lacked sufficient information to demonstrate the proposed relocation of the leases up to 210 m closer to the shoreline would have a negligible impact on visual amenity at Callala Beach. The Department requested the Proponent prepare a more detailed assessment of visual impacts and consideration of the community's concerns.

Applicant's Assessment

The Proponent's revised VIA included photographs to illustrate the anticipated visual impact during daylight hours (refer **Figure 11** and **Figure 12** below).



Figure 11 | Blue Revolution in operation at marine leases ~1,300m offshore as seen by naked eye

It also confirmed the modification does not seek to increase the number of approved surface buoys, the buoys would continue to be partially or fully submerged and would remain dark in colour, consistent with industry best practice. The revised VIA noted that as part of the original application, the Proponent demonstrated these dark coloured buoys would have negligible visual impacts at distances greater than 200 m.

Therefore, as the modification proposes to relocate the leases such that they are approximately 1,250 m away from the Callala Beach shoreline at the closest point, the Proponent's assessment concluded these would not be visible to the naked eye from the shoreline.

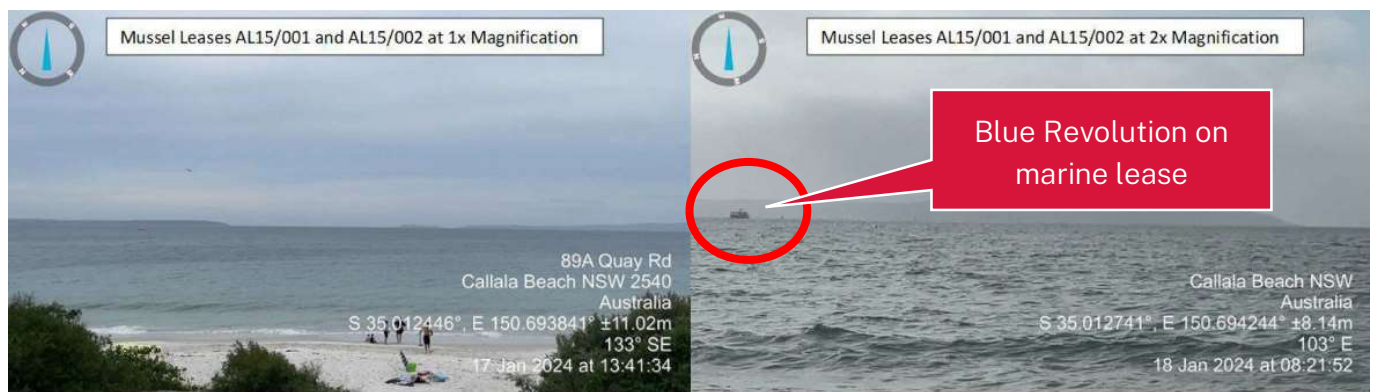


Figure 12 | Blue Revolution in operation at marine leases ~1.300m offshore at 1x and 2x magnification

Regarding concerns about lights on the cardinal markers causing visual impacts at night, the revised VIA confirmed the use of lights is unavoidable due to maritime navigational safety requirements. However, the Proponent also reiterated the number of cardinal markers (and therefore lights) would decrease if the modification is approved, from ten markers to six, as only the corners and midway points of the leases need to be delineated in accordance with TfNSW requirements. The modification would therefore decrease visual impacts associated with the cardinal markers.

The Proponent also confirmed the large yellow Water Quality Monitoring Sensor Buoy which had been deployed by the University of Technology Sydney and SCM in 2022, would be moved as part of the modification, however, it would not be moved closer to Callala Beach. The existing and likely location of the monitoring buoy is illustrated in **Figure 13** below.

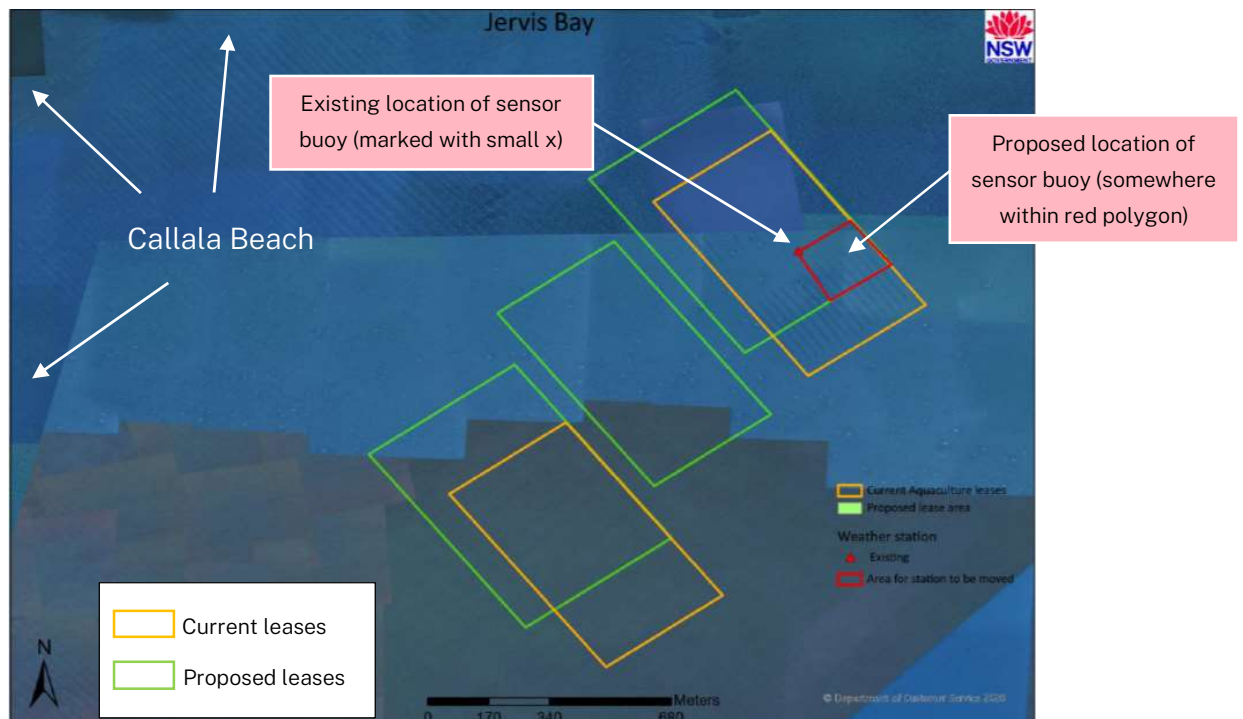


Figure 13 | Existing and proposed likely location of the Water Quality Monitoring Sensor Buoy

Department's Assessment

The Department carefully considered the potential for visual impacts as part of the original application for the project. This assessment found the visual impacts of AL15/001 and AL15/002 at Callala Beach would be either nil or very low to low impact, primarily due to their distance (i.e. significantly greater than 200 m) from the various viewing locations assessed.

The relocated leases proposed under this modification will result in the lease areas being approximately 1,250 m, 1,710 m and 1,560 m from Callala Beach shore for leases AL15/001, AL15/002 and AL15/003, respectively. The leases will therefore be located significantly further away than 200 m, which was previously assessed and found to have either nil or very low to low impact. The Department is satisfied the relocated leases are therefore unlikely to increase the visual impacts of the leases as viewed from Callala Beach.

To address any residual visual impacts from the leases, existing conditions require the surface support buoys to be no larger than 800 millimetres (mm) in diameter, to be partially submerged such that only 400 mm is visible above the water surface, and to be routinely maintained and cleaned of bird guano. For navigational purposes, the Proponent is also required to consult with TfNSW regarding the minimum number of buoys that can remain in the water for each longline when they are not stocked. This will also ensure any unnecessary / unused buoys are removed, further minimising any minor residual visual impacts.

These requirements are all required under the consent conditions and are to be implemented through the Support Buoy Protocol within the approved Environmental Management Plan for the project.

The Department is satisfied the ongoing implementation of these mitigation measures across the expanded leases, as proposed under this modification, will ensure that the key assets of Callala Beach, including water colour, clarity and expansive views, will continue to be maintained.

6.6 Other issues

Table 6 | Assessment of other issues

Findings and conclusions	Recommended conditions
Underwater Cultural Heritage	
- The installation of screw anchors into the seabed for the proposed relocation and expansion of the three leases has the potential to affect underwater cultural heritage (UCH) sites such as shipwrecks, aircraft wreckage or underwater Aboriginal heritage sites or relics. - The Heritage Council of NSW raised concern the Proponent had not carried out a UCH survey and inspection of the seabed to confirm the presence of any significant items of heritage as part of the modification application.	Require the Proponent to: update the approved Environmental Management Plan to incorporate maritime heritage procedures.

Findings and conclusions	Recommended conditions
• The Proponent carried out a desktop assessment as part of the modification application and subsequently completed a UCH survey in December 2024 in response to the Heritage Council recommendations. • The Proponent’s UCH Assessment, submitted in February 2025, found there were no known shipwrecks within the proposed lease area. The UCH Assessment concluded there is a low potential for shipwrecks or other UCH items to be present within the proposed relocated lease areas. Overall, the UCH found the operation of the mussel leases are not expected to have any operational impacts on any known or potential UCH sites or articles within Jervis Bay. • The Proponent has committed to adopting and implementing an Unexpected Finds Procedure, in the event any UCH items or sites are unexpectedly found during the deployment of the relocated leases. • The Heritage Council of NSW confirmed the assessment methodology was acceptable and agreed with the findings of the assessment. The Heritage Council recommended conditions requiring maritime heritage procedures be incorporated into the existing Environmental Management Plan for the project, including an unexpected finds protocol and induction training for employees. • The Department is satisfied the UCH assessment has been carried out by a qualified maritime archaeologist and demonstrates the risk of impacts to UCH items and sites is minimal. The recommended conditions will ensure mussel farm employees/contractors will be educated about maritime archaeology and any unexpected finds are appropriately managed and protected.	
Navigation	
• Community submissions, including the Jervis Bay Cruising Yacht Club (JBCYC), objected to the modification because of the potential for conflict with sailing racing courses, increase in biofouling of boats and resulting maintenance costs, and the potential for the expanded lease areas to cause a navigational hazard. • The Proponent confirmed the leases, both existing and proposed, are non-exclusive areas, meaning that other water users are free to access and use the lease area, provided they do not interfere with any infrastructure or operations. The proposed lease locations would also provide for a 50 m corridor between each lease.	No additional conditions required.

Findings and conclusions

Recommended conditions

- Furthermore, consistent with the conditions of approval, the Proponent confirmed the deployment of lease infrastructure would continue to comply with the IALA Buoyage System (a worldwide standard sea mark system used in navigation) and TfNSW-Maritime would be notified of the final lease co-ordinates to ensure updates are made to the navigation charts and/or 'Notices to Mariners'.
- In relation to the JBCYC concerns, the Proponent confirmed that relocating the leases up to 210 m closer to the beach would still allow over one kilometre for yachts to travel past the leases and would not appear to impact the racing courses adversely, or the traversing route between Currambene Creek and the club house in Callala Bay.
- TfNSW (Maritime) confirmed that all requirements regarding lighting and marking and navigation had been adequately addressed, and advised the consolidated location for the three leases within Jervis Bay represents a better safety, environmental, access and amenity outcome when compared to the separate Vincentia and Callala Beach locations (as approved) as the consolidated location will make the lease area more easily delineated by vessel operators.
- The Department is satisfied the existing conditions regarding navigation safety will continue to ensure the safety of other waterway users following relocation of the leases noting they will be located to the satisfaction of TfNSW and must comply with international standards. The number of navigational cardinal markers on the leases will reduce from ten to six and will be within one consolidated location, rather than located in the waters off both Vincentia and Callala Beach.
- The Department has reviewed the JBCYC race plans and notes the lease areas are noted on the plan and there are courses that require yachts to pass by the lease areas on all sides, including between the leases and Callala Beach. Noting the distance between the proposed leases and Callala Beach will only reduce by 200 m and will remain over one kilometre, the proposed location of the leases is not expected to interfere with the JBCYC races.
- The Department's assessment concludes no additional conditions are required to manage navigation safety as existing conditions are suitable to ensure the protection of waterway users and prevent conflicts between the farm and other vessels.

Findings and conclusions	Recommended conditions
Water Quality and Benthic Monitoring	
- Community submissions raised concern regarding the potential impacts of existing farm operations on the benthic environment, water quality and water circulation, and the risk of this being exacerbated by the proposed expansion of the farm. - The Proponent confirmed that monitoring carried out to date had demonstrated the farm was not having any adverse impacts on the marine ecosystem. This monitoring will continue when the farm is relocated and expanded if the modification is approved, including benthic sampling. - The proponent has committed to updating the existing Water Quality and Benthic Monitoring Program (WQBMP) following approval of the modification and to implement additional management actions, such as a reduction in stocking density or temporary cessation of re-stocking the leases, if benthic communities are being impacted. - Additionally, a water quality monitoring sensor buoy, deployed in 2022, will be relocated to a new position within the relocated lease areas and will continue to monitor water quality. This data will continue to be publicly available. - In conclusion, the Proponent noted the broader environmental benefits that mussels have on the marine environment, including reducing turbidity, increasing light penetration thereby enhancing benthic productivity of habitats such as seagrass and leading to improved water quality and habitat provision. - The Department acknowledges that monitoring of existing farm operations has demonstrated no adverse impacts to the benthic environment or water quality and circulation. Monitoring will continue to ensure that if the defined environmental triggers are reached, appropriate management actions and ameliorative actions will be implemented to prevent harm to the marine ecosystem. - The Department is satisfied no additional conditions are required subject to the implementation of the Proponent's commitments to update and implement the WQBMP following approval of the modification. The Department's assessment concludes impacts to the benthic environment and water quality / circulation are unlikely because of the modification.	No additional conditions required.

Findings and conclusions	Recommended conditions
Seahorses and Matters of National Environmental Significance	
- One community submission noted potential impacts of biofouling and the mussel farm operations on MNES. Concerns were raised regarding potential impacts on seahorses during harvesting as these have been observed around the farm on anchors and longlines, noting the potential for the national protected species, White's Seahorse, to be present in Jervis Bay. - Cth DCCEEW confirmed EPBC referral 2013/6768 applies to the approved project in which the project was deemed to not be a controlled action if undertaken in a particular manner, including: - backbone line ropes to be at least 25mm in diameter - weekly visual inspections of the longlines to ensure backbone ropes are taut - annual servicing of the longline infrastructure. - The Proponent advised a new self-assessment had been carried out for the modification and confirmed the farming operations would continue to be carried out in line with these provisions. Cth DCCEEW noted this and advised the advice from Cth DCCEEW did not constitute an endorsement or decision under the EPBC Act. - In light of recent observations of seahorses (undefined species) on anchor lines around the farm, the Proponent has committed to updating the Marine Fauna Entanglement Plan, Marine Fauna Entanglement Avoidance Protocol and Marine Fauna Interaction Management Plan to incorporate best practice seahorse management into farm operations. A seahorse expert will also be invited to join the Marine Fauna Interaction Committee established by the Proponent. - The Department is satisfied the Proponent will implement current best practices into harvesting operations to minimise potential impacts on seahorses. In terms of the White's Seahorse, the Department notes this is a matter for the Proponent to demonstrate to the Cth DCCEEW it will comply with the relevant requirements of EPBC referral 2013/6768. - Existing conditions require all management plans and strategies to be revised and updated following the approval of any modification. The Department is therefore satisfied the existing conditions will ensure seahorses are protected and concludes no further conditions are required to manage impacts on seahorses.	No additional conditions required.

7 Evaluation

The Department's assessment has considered the relevant matters of the EP&A Act and considers the proposed modification is appropriate on the basis that:

- it supports the growth and expansion of the marine aquaculture industry in NSW, consistent with the Marine Waters Aquaculture Strategy
- will benefit the local and NSW economy by generating five construction jobs and 15 additional operational jobs, as well as increasing the production and sale of mussels locally and interstate
- it will consolidate farm operations to a single location off Callala Beach, improving navigational safety and community amenity, particularly in relation to visual impacts
- it adopts a screw anchor system for the longlines, which is recognised as industry best practice
- it responds to the current state of knowledge regarding the species of Blue Mussel found on the NSW east coast by including the species *M.planulatus* on the list of approved species to be farmed and committing to further research into the species and distribution of Blue Mussels in Jervis Bay
- the realignment and expansion of the longline infrastructure will improve operational efficiencies
- co-ordinates for the lease areas will be clarified to ensure the farm is outside the Department of Defence's Beecroft Weapons Range, protecting the safety of employees.

The Department has carefully considered the concerns raised by the community and advice from key government stakeholders and has recommended a range of conditions to address these concerns and manage residual environmental impacts. This includes requiring the Proponent to report on the findings of the Spatfall Monitoring Program to better understand the spatial and seasonal distribution of mussel spat within Jervis Bay, including the genetics of the population. This will contribute to the knowledge of the species to determine if the recent proliferation of mussels within the bay is being driven by the farm or natural cycles.

To protect the integrity of the JBMP for existing and future generations, the screw anchors left *in situ* following relocation of the Callala leases will be managed until such time the farm is decommissioned. The SAMP will also provide clear triggers for removal of the screw anchors if they are found to be having an adverse environmental or social impact prior to decommissioning. Further, having regard to the principles of ESD, existing conditions requiring the aquaculture permit holder to remove all infrastructure when the farm is decommissioned, will be retained.

Finally, the modification will retain all conditions regarding stock management and health, visual amenity, navigation safety, structural integrity, marine fauna entanglement and monitoring and reporting to ensure the expanded farm operations will continue to operate within the existing rigorous operational framework established under the original approval. More contemporary requirements for compliance reporting and the protection of maritime heritage will improve oversight on the environmental performance of the project. Operational management procedures and environmental performance will also be improved following determination of the modification application with the

review and update of all management plans and strategies to ensure all plans are contemporary and incorporate new information regarding biosecurity, the screw anchor system, marine fauna and maritime heritage.

Consequently, the Department is satisfied the modification should be approved subject to the recommended modifying conditions of approval.

8 Recommendation

It is recommended the **Executive Director – Energy, Resources and Industry** , as delegate of the Minister:

- **considers** the findings and recommendations of this report
- **determines** that the application SSI5657-Mod-1 falls within the scope of section 5.25 of the EP&A Act
- **accepts and adopts** the findings and recommendations in this report as the reasons for making the decision to approve the modification
- **agrees** with the key reasons for approval listed in the notice of decision
- **modifies the approval** for the Jervis Bay Aquaculture Project (SSI-5657-Mod-1), subject to the conditions in the attached instrument of modification.
- signs the attached instrument of modification (0).

Recommended by:



10 March 2025

Sally Munk

Principal Planner

Industry Assessments

Recommended by:



20 March 2025

Joanna Bakopanos

A/Director

Industry Assessments

9 Determination

The recommendation is **adopted** by:

A handwritten signature in dark ink, appearing to read 'C. Ritchie', is positioned above the date.

20 March 2025

Chris Ritchie

A/Executive Director

Energy, Resources and Industry Assessments

Glossary

Abbreviation	Definition
Additional Information	Correspondence from the NSW Department of Primary Industries and Regional Development to the Department dated 30 July 2024
Cth CCEEW	The Australian Government Department of Climate Change, Energy, the Environment and Water
AHD	Australian Height Datum
Aquaculture lease	A lease issued under Section 163 of the <i>Fisheries Management Act 1994</i>
Aquaculture permit	A permit issued under Section 146 of the <i>Fisheries Management Act 1994</i>
BCS	Biodiversity Conservation and Science Group of NSW DCCEEW
Broodstock	Mature or parent fish used for breeding purposes in order to produce spat, fry and fingerlings
Council	Shoalhaven City Council
Crown Lands	Crown Lands Division of the Department of Planning, Housing and Infrastructure
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
Decommissioning	The formal process of removing all Lease infrastructure (i.e. longlines) from the leases
Department	Department of Planning, Housing and Infrastructure
DPI	Department of Primary Industries within the Department of Regional NSW
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESD	Ecologically Sustainable Development

Abbreviation	Definition
Extensive aquaculture	Low-impact aquaculture (i.e. aquaculture which does not use supplementary food to grow the product under cultivation) of cultured stock on long-lines
Heritage	Heritage NSW, within the Department of Climate Change, Energy, the Environment and Water
LGA	Local Government Area
Longline	A structure consisting of anchors, mooring lines and buoy supported backbone lines from which cultivation apparatus is attached to grow the cultured stock
Minister	Minister for Planning and Public Spaces
Modification Report	The report titled ' <i>Application to modify the approval for the Commercial Shellfish Aquaculture leases in Jervis Bay NSW Project (SSI-5657)</i> ' prepared by the Aquaculture Management Unit (NSW Department of Primary Industries) dated 9 November 2023
NPWS	National Parks & Wildlife Service within the Department of Climate Change, Energy, the Environment and Water
Planning Secretary	Secretary of the Department of Planning, Housing and Infrastructure
Proponent	NSW Department of Primary Industries
SEPP	State Environmental Planning Policy
Spat	Small juvenile mussels
Spatfall	The process by which young shellfish larvae attach to a hard surface or substrate
SSI	State significant infrastructure
Submissions Report	The report titled ' <i>Submissions Report – Modify the approval for the Commercial Shellfish Aquaculture leases in Jervis Bay NSW Project (SSI-5657)</i> ' prepared by the Aquaculture Management Unit (NSW Department of Primary Industries) dated 21 May 2024
TfNSW	Transport for NSW

Appendices

Appendix A – List of Referenced Documents

The Department has relied upon the following key documents during its assessment of the proposed development:

Modification Application

- ‘Application to modify the approval for the Commercial Shellfish Aquaculture leases in Jervis Bay NSW Project (SSI-5657)’ prepared by the Aquaculture Management Unit (NSW Department of Primary Industries) dated 9 November 2023’ - <https://www.planningportal.nsw.gov.au/major-projects/projects/modification-jervis-bay-mussel-farms-relocation-and-expansion>

Submissions Report

- ‘Submissions Report – Modify the approval for the Commercial Shellfish Aquaculture Leases in Jervis Bay NSW Project (SSI-5657)’ prepared by the Aquaculture Management Unit (NSW Department of Primary Industries) dated 21 May 2024 - <https://www.planningportal.nsw.gov.au/major-projects/projects/modification-jervis-bay-mussel-farms-relocation-and-expansion>

Additional Information

- Correspondence from the NSW Department of Primary Industries and Regional Development to the Department dated 30 July 2024 - <https://www.planningportal.nsw.gov.au/major-projects/projects/modification-jervis-bay-mussel-farms-relocation-and-expansion>
- Correspondence from the NSW Department of Primary Industries and Regional Development to the Department dated 6 February 2025 - <https://www.planningportal.nsw.gov.au/major-projects/projects/modification-jervis-bay-mussel-farms-relocation-and-expansion>
- Draft Spatfall Monitoring Program prepared by the NSW Department of Primary Industries and Regional Development dated 6 March 2025 - <https://www.planningportal.nsw.gov.au/major-projects/projects/modification-jervis-bay-mussel-farms-relocation-and-expansion>

Department’s Assessment Report for SSI-5657

- <https://www.planningportal.nsw.gov.au/major-projects/projects/jervis-bay-aquaculture-facility>

Appendix B – Submissions and Government Authority Advice

All submissions and government agency advice can be found here:

<https://www.planningportal.nsw.gov.au/major-projects/projects/modification-jervis-bay-mussel-farms-relocation-and-expansion>

Appendix C – Community Views for Draft Notice of Decision

Table 7 | Key issues and how they have been considered

Issue	Consideration
Species being farmed is non-native and may impact on ecological integrity of the Jervis Bay Marine Park	Natural endemic populations of Blue Mussel have now been confirmed to consist of both <i>M.galloprovincialis</i> and <i>M.planulatus</i> and hybrids of both, the Department agrees with the Proponent and BCS that it is appropriate to add <i>M.planulatus</i> to the list of species permitted to be farmed at the Jervis Bay aquaculture leases. SCM only collect Blue Mussels found in the wild and have not attempted to change the species mix naturally present. Benthic and water quality monitoring have demonstrated the mussel farm is not having any adverse impacts on the ecological integrity of the JBMP. Monitoring will continue as part of the expanded farm operations and require the Proponent to implement remedial actions, including reducing stocking density or temporary cessation of stocking, if required. The Proponent has committed to carrying out genetic testing of Blue Mussels found in and around Jervis Bay to expand the knowledge of this species and its distribution. <u>Recommended conditions/response:</u> No change is required to the existing conditions regarding how the leases are stocked as conditions require stock to be sourced from the endemic population and in accordance with approved NSW DPI hatchery and translocation protocols. The outcomes of the genetic testing of mussels in Jervis Bay will be reported as part of a broader Spatfall Monitoring Program and to better understand the distribution of mussels within Jervis Bay. To ensure the Proponent is meeting the requirements for stocking of the leases under the approval, conditions require the Proponent to report all details annually as part of a Compliance Report to be submitted to the satisfaction of the Planning Secretary.
Biosecurity risks associated with farming of an invasive species and taking spat from Twofold Bay which has international boat traffic	The translocation of spat is managed in accordance with the bespoke NSW Blue Mussel Spat Translocation Protocol (Twofold Bay to Jervis Bay) (DPI, 2022) (the Protocol). The Protocol sets out biosecurity requirements SCM must implement to move Blue Mussel spat from Twofold Bay to Jervis Bay for commercial aquaculture grow-out. The Protocol was approved by the Chief Veterinary Officer in 2018.

Issue	Consideration
	The Proponent has committed to update the existing Disease, Parasite and Pest Management Plan (DPPMP) to address new pest species and increased boat traffic in Twofold Bay which will ensure the DPPMP is contemporary and will continue to provide an appropriate framework to manage biosecurity risks for the expanded farm. <u>Recommended conditions/response:</u> Conditions require the Proponent to prepare and submit a Compliance Report (as discussed above) to ensure the farm is reporting on its compliance and performance in line with contemporary compliance reporting requirements and will act as an additional layer of oversight on biosecurity protocols. The requirement for an independent audit to be carried out tri-annually will be maintained to ensure there continues to be independent oversight across farm operations.
Spat distribution and biofouling on boats having adverse impacts on the marine ecosystem and causing a financial burden	The Department acknowledges it is important to understand if the source of the increase in mussels observed within Jervis Bay is being driven by the mussel farm or is the result of natural ‘boom and bust’ cycles. The Department therefore supports the Proponent’s proposal to carry out a Spatfall and Genetics Monitoring Program to better understand natural spatfall distribution patterns in Jervis Bay over time. This will help to understand any seasonal trends associated with ‘boom and bust’ cycles and/or if the SCM mussel farm is increasing spatfall around Jervis Bay and causing biofouling in Currumbene Creek. The proposed Program will also ensure appropriate remedial actions are implemented by SCM should the program find the SCM mussel farms are contributing to biofouling in Currumbene Creek and/or driving the increase in mussels found throughout the bay. <u>Recommended conditions/response:</u> Conditions require the Proponent to commence the Program within six months of the approval of the modification and to report annually on the findings of the study to the Planning Secretary thereafter. This information will be made public. This will ensure any remedial actions are implemented by the Proponent and farm operator as soon as possible, if required. The Program will be reviewed after three years following the relocation of the leases, and future continuation of the Program considered in consultation with the Department. Existing condition B4 permits the Planning Secretary to direct the Proponent to implement additional remedial measures, if required.

Issue	Consideration
Visual impacts from leases being larger and closer to shore	The relocated leases proposed under this modification will result in the lease areas being approximately 1,250 m, 1,710 m and 1,560 m from Callala Beach shore for leases AL15/001, AL15/002 and AL15/003, respectively. The leases will therefore be located significantly further away than 200 m, which was previously assessed and found to have either nil or very low to low impact. The Department is satisfied the relocated leases are therefore unlikely to increase the visual impacts of the leases as viewed from Callala Beach. <u>Recommended conditions/response:</u> To address residual impacts, existing conditions require the surface support buoys to be no larger than 800 millimetres (mm) in diameter, to be partially submerged such that only 400 mm is visible above the water surface, and to be routinely maintained and cleaned of bird guano. For navigational purposes, the Proponent is also required to consult with TfNSW regarding the minimum number of buoys that can remain in the water for each longline when they are not stocked. This will also ensure any unnecessary / unused buoys are removed, further minimising any minor residual visual impacts.
Lack of benefit to the community	It is understood that SCM employs 35 full-time and 17 part-time jobs and contributes to the local and State economy. The expansion of the farm will increase employment by up to 15 additional full-time jobs during operation and five construction workers. Deployment of the water quality monitoring buoy also provides real time publicly available water quality data for Jervis Bay. The Proponent has also reported the leases are used regularly by divers and fisherman. The Department notes the leases are non-exclusive areas, meaning that other water users are free to access and use the lease area, as long as they do not interfere with any infrastructure or operations. The Department is satisfied the proposed expansion of the farm will increase economic benefits both locally through employment and more broadly through the sale and distribution of mussels throughout NSW and interstate. <u>Recommended conditions/response:</u> No additional conditions are required.

Issue	Consideration
Navigational conflicts with other waterway users and the Jervis Bay Cruising Yacht Club racing courses	The Department is satisfied the existing conditions regarding navigation safety will continue to ensure the safety of other waterway users following relocation of the leases noting they will be located to the satisfaction of TfNSW and must comply with international standards. The Department concurs with the views of TfNSW that the consolidated location for the three leases within Jervis Bay represents a better safety, environmental, access and amenity outcome when compared to the separate Vincentia and Callala Beach locations. The proposed lease locations have had regard to other waterway users such as the local yachting community. <u>Recommended conditions/response:</u> No additional conditions are required to manage navigation safety as existing conditions are suitable to ensure the protection of waterway users and prevent conflicts between the farm and other vessels.

Appendix D – Recommended Instrument of Modification