

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT



July 2022 - June 2023

Developed by South Coast Mariculture

South Coast Mariculture Annual Environmental Management Report

July 2022 - June 2023

More information

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Cover image: Operations Crew at South Coast Mariculture Callala North Lease (AL 15/001) December 2021

South Coast Mariculture
Annual Environmental Management Report

July 2022 – June 2023

Declaration of Compliance

Project Name	Jervis Bay Commercial Shellfish Aquaculture Leases
Project Application Number	SSI-5657
Description of Project	Commercial Shellfish Aquaculture in Jervis Bay
Project Address	Shed 5, 6 Bolton Road, Huskisson, NSW 2540
Proponent	South Coast Mariculture Pty Ltd
Title of Compliance Report	South Coast Mariculture Annual Environmental Management Report July 2022 – June 2023
Date	1st July 2023

I declare that I have reviewed relevant evidence and prepared the contents of the attached Compliance Report and to the best of my knowledge:

- the Annual Environmental Management Report has been prepared in accordance with all relevant conditions of consent;
- the Annual Environmental Management Report has been prepared in accordance with the Compliance Reporting Post Approval Requirements;
- the findings of the Annual Environmental Management Report are reported truthfully, accurately and completely;
- due diligence and professional judgement have been exercised in preparing the Annual Environmental Management Report and
- the Annual Environmental Management Report is an accurate summary of the compliance status of the development.

Notes:

- Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading information (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years’ imprisonment or 200 penalty units, or both).

Name of Authorised Reporting Officer	Paransheel
Title	Compliance and R&D Manager
Qualification	MSc Honours Marine Science and Management
Company	South Coast Mariculture
Company Address	Shed 5, 6 Bolton Road, Huskisson NSW 2540

Executive Summary

This report details the performance of the South Coast Mariculture marine aquaculture leases between 1st July 2022 and 31st June 2023. The report complies with State Significant Infrastructure Approval SS1-5657 that an Annual Environmental Management Report be submitted to the NSW Department of Planning and Environment, the NSW Office of Environment and Heritage and the Commonwealth Department of Environment and Energy.

For the purposes of this report, the South Coast Mariculture leases will be referred to as:

AL 15/001 = Callala North Lease

AL 15/002 = Callala South Lease

AL 15/003 = Vincentia Lease

The report covers a range of activities including construction and deployment; operation and maintenance; environmental monitoring and biosecurity; research; transport of spat; marine fauna interactions; navigational interactions; compliance with standards and performance measures and community engagement.

The report highlights compliance with consent conditions and provides examples of where and when standards were exceeded. The report also identifies any non-compliance issues during this review period.

The University of Newcastle undertook Independent Benthic Environmental Surveys prior to infrastructure deployment on the Callala North lease in 2019 and after spat stocking in 2020 & 2022. This Baseline, Update 1 and Update 2 Survey (Appendix: A), based on water quality, gross seabed characteristics, sedimentary characteristics (particularly %TOC), benthic macroinvertebrate taxa and fishes, provide no evidence that the present stocking of mussels at the Callala North lease is having an adverse effect on the marine environment in this area of Jervis Bay.

During this reporting period, there was:

- commencement of lease infrastructure deployment on AL 15/001 B block and AL 15/002 A block;
- successful continued stocking of Callala North lease (AL 15/001) and Callala South Lease (AL 15/002) with Blue Mussel spat (*Mytilus galloprovincialis*);
- successful harvest of mussels from Callala North lease (AL 15/001);

-
- no significant unexplained mortality or illness of mussels;
 - no new introduced pest/species identified on the lease;
 - no aquatic fauna entanglement incidents:
 - two marine fauna interactions recorded within and around the Callala North lease (AL 15/001); only pods of seals, dolphins and one turtle was observed and no whales
 - operational training of interested staff in HACCP, Food Safety Program, Contributing to Workplace Health and Safety & First Aid Training
 - one intensive beach clean-ups with Ocean Watch: Tide to tip and one beach clean-up after severe weather conditions to control and address marine plastic pollution.
 - employment of 17 full-time, 1 part-time and 17 casual staff members at South Coast Mariculture

This report also outlines any incidents related to operational matters that occurred on the South Coast Mariculture leases during the reporting period including:

- Zero infrastructure malfunctions.
- Marine fauna monitoring with zero entanglements and two recorded sightings within the lease area.
- One feedback registered in FY2022-FY2023
- no major incidents occurred, and six minor incidents; all recorded within Sea Flux

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List of Abbreviations

BAP	Best Aquaculture Practices
EMP	Environmental Management Plan
HACCP	Hazard Analysis Critical Control Point
IALA	International Association of Lighthouse Authorities
IEA	Independent Environmental Audit
NSW DPI	New South Wales Department of Primary Industries
NSW DPIE	New South Wales Department of Planning and Environment
JBMP	Jervis Bay Marine Park
NSW RMS	New South Wales Roads and Maritime Service
SCM	South Coast Mariculture
SDS	Safety Data Sheets
TOC	Total Organic Carbon
UoN	University of Newcastle
UTS	University of Technology Sydney
WH&S	Work Health and Safety

1. Introduction

South Coast Mariculture Pty Ltd is successfully developing commercial extensive aquaculture leases (Figure:1) within the marine embayment of Jervis Bay, NSW as per the State Significant Infrastructure Approval SSI-5657 received by Fisheries NSW, a division of the NSW Department of Primary Industries (NSW DPI), from the NSW Government Department of Planning and the Environment (NSW DPIE). According to the lease-based aquaculture permit AP2554 from NSW DPI, South Coast Mariculture (SCM) is authorised to culture a number of marine bivalves on the lease as-

- Akoya (Pearl) (*Pinctada imbricata*)
- Blue Mussel (*Mytilus galloprovincialis*)
- Commercial Scallop (*Pecten fumatus*)
- Doughboy Scallop (*Mimachlamys asperima*)
- Native Oyster (*Ostrea angasi*)
- Sydney Rock Oysters (Diploid) (*Saccostrea glomerata*)

SCM has worked in close consultation with NSW DPI, local, state and federal government agencies, community groups, private enterprises and numerous other stakeholders to ensure that the planning, development, infrastructure deployment, operations and environmental management of the SCM lease/s meet the conditions of the SSI-5657 and that the development has a net positive impact for the environment, the local community and the Jervis Bay region.

Jervis Bay is one of only three marine embayment on the NSW coast that are suitable for extensive aquaculture. The other embayments are Port Stephens, which has an established edible oyster industry and Twofold Bay, which already has extensive Blue Mussel aquaculture (Joyce *et. al.*, 2010).

The viability of the operation of the South Coast Mariculture Commercial Extensive Aquaculture Leases is dependent upon preserving the quality of the surrounding marine environment. Also, to cover environmental management, animal welfare, social responsibility, and food safety, SCM operates in accordance with Best Aquaculture Practices (BAP). BAP standards are endorsed by the Global Food Safety Initiative and the Global Sustainable Seafood Initiative. Thus, SCM is committed to work with full transparency in all interactions with the marine environment.



Figure 1: Regional Map of Jervis Bay and the locations for the South Coast Mariculture Commercial Extensive Aquaculture Leases (Source: Fisheries NSW 2012).

1.1 Lease Site Locations

The SCM leases (Figure:1 & 2) occupy a total area of 50 hectares between the coordinates:

- AL15/001 (Callala North) - 20 hectares (Coordinates: -35° 1' 11.899" 150° 42' 39.666"; -35° 1' 27.615" 150° 42' 53.655"; -35° 1' 33.944" 150° 42' 43.147"; -35° 1' 18.228" 150° 42' 29.158");
- AL15/002 (Callala South) - 20 hectares (Coordinates: -35° 1' 38.188" 150° 42' 21.156"; -35° 1' 53.796" 150° 42' 35.324"; -35° 2' 0.206" 150° 42' 24.887"; -35° 1' 44.597",-150° 42' 10.720"); and
- AL15/003 (Vincentia) - 10 hectares (Coordinates: -35° 3' 35.483" 150° 41' 13.244"; -35° 3' 42.122" 150° 41' 21.910"; -35° 3' 49.960" 150° 41' 13.027"; -35° 3' 43.321" 150° 41' 4.361").

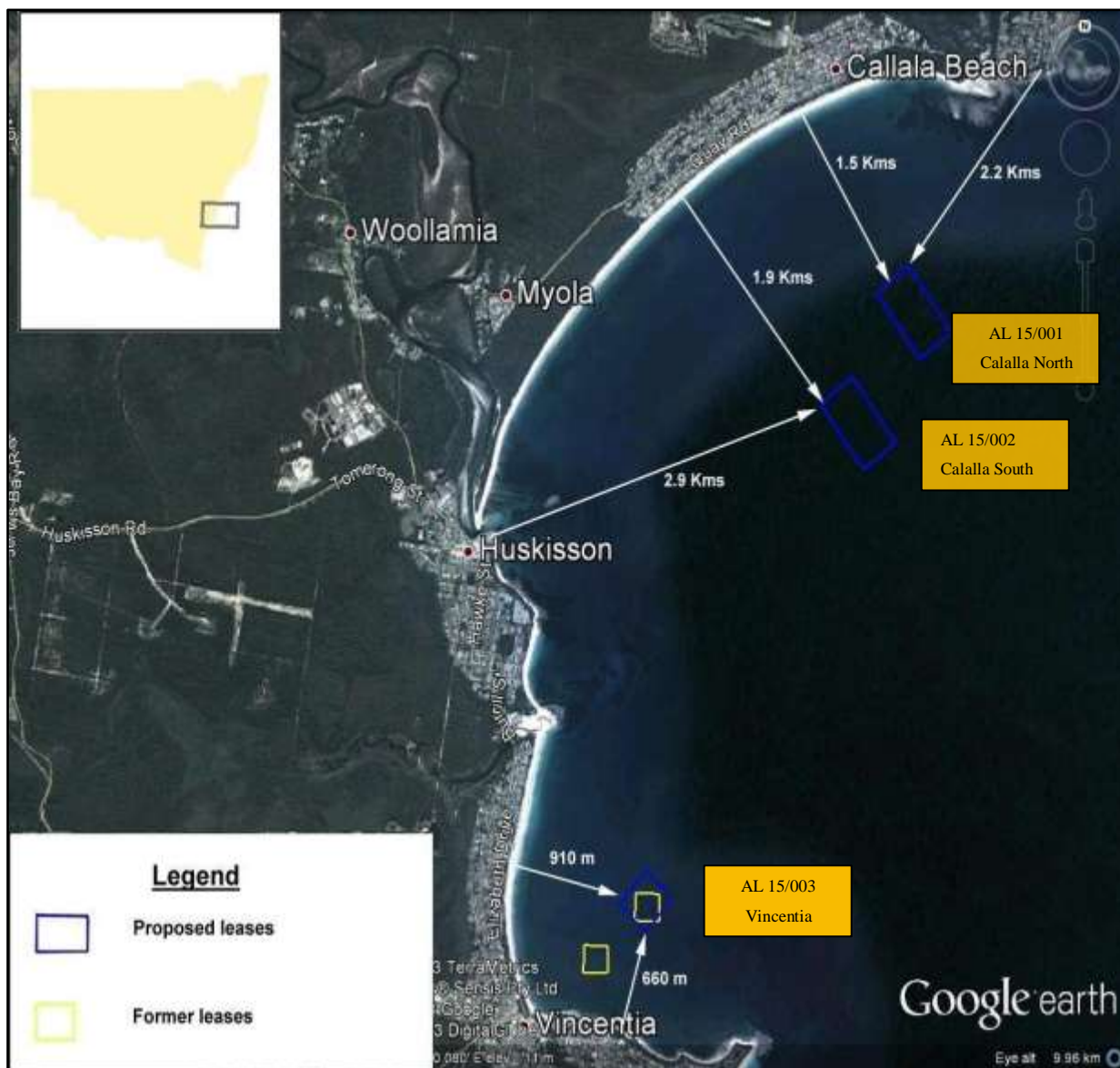


Figure 2: Location of the Commercial Shellfish Aquaculture Leases and the former Blue Mussel leases in Jervis Bay (Source: Fisheries NSW, 2013).

The Callala Leases (north and south) are located approximately 1.5 km and 1.9 km southeast of Callala Beach, respectively. The Vincentia Lease is approximately 660 m north of Orion Beach in Vincentia (Figure 2).

In compliance with consent condition E7 of the State Significant Infrastructure Approval SSI-5657 the Annual Environmental Management Report will assess the environmental and socio-economic impacts of the South Coast Mariculture Commercial Extensive Aquaculture Leases, evaluate the effectiveness of mitigation, monitoring and management measures, and make modifications to the operation of the leases in accordance with the report findings.

The annual environment report will consist of the following information:

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- The standards and performance measures that apply to the development;
 - Description of the operations that have been carried out during the reporting period;
 - Annual water and benthic monitoring report;
 - Non-compliance report and actions taken to meet compliance
 - Annual marine fauna interaction/observations report;
 - Annual navigation incidents report;
 - Annual complaints report;
 - Annual diseases, parasites and pests report;
 - Annual structural integrity and stability report and;
 - Details of monitoring results with commentary on any effects of the development compared to relevant guidelines, pre-lease sampling or control sites and an analysis of any trends or key findings.

2. SCM Commercial Extensive Aquaculture Lease Operational Status

2.1 *Vincentia AL15/003*

The Vincentia lease AL15/003 has not yet been developed.

2.2 *Callala South AL15/002*

The Callala South lease AL15/002 has been developing under Stage:3 Full Commercialisation March 2023.

2.3 *Callala North AL15/001*

Callala North lease AL15/001 infrastructure was first deployed in June 2019. The lease infrastructure consists of 6m screw anchors at the end of each system connected to lengths of chain and polypropylene and support buoys are attached along each backbone rope. Four navigation buoys are positioned on the corners of each commercial lease.

The lease was first seeded in May 2020 with wild-caught *Mytilus galloprovincialis* spat translocated from Twofold Bay lease AL06/002. The Callala North lease was first harvested commercially in November 2020. After farming mussels on 20 lines for three years, SCM started developing this lease under Stage:

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3 Full Commercialisation. This program involves anchoring new lines for the leases to increase the farming capacity of the farm. 25 new lines have been set up between AL15/001 and AL15/002.

Over the course of FY22-23, South Coast Mariculture has carried out normal farming operations of seeding and floating *Mytilus galloprovincialis* including carrying out routine inspections and maintenance of the infrastructure at Callala North (AL15/001) along with deploying new infrastructure.



Figure 3: Callala North Lease (AL15/001) harvest. (Source: South Coast Mariculture 2020)

2.4 Deployment

Based on the forecast of operations in Annual Report FY21-22, the following deployment were undertaken in FY22-23 as-

1. Stage:3 Full Commercialisation March 2023 onwards was undertaken as per the SCM Construction and Deployment Management Plan and Traffic Management Plan. This new lease infrastructure deployment carried out during FY22-23 focussed on developing the AL15/001 B Block and AL15/002 A Block. To expand mussel grow-out lines at Jervis Bay, South Coast Mariculture deployed unique shaftless anchors using [Marine Flex](#)'s Screw-in anchor technology to lay these 25 lines over Callala North AL15/001 B Block (9 lines) and Callala South AL15/002 A Block (16 lines). There was no devastation of the seabed reported during installation and its minute footprint deemed it an environmentally friendly technology (Source: Marine Flex Ltd 2023).



Figure 4:SCM crew deploying anchors using Screw-in Anchor Technology by Marine Flex Ltd (Source: SCM 2023)

2. Under the NSW Flood Sector Development Funding initiative, South Coast Mariculture and the University of Technology (UTS) deployed 1.7m wide [Xylem](#) Water Quality Monitoring Sensor- Weather Buoy in the Jervis Bay (December 2022) and Twofold Bay leases (March 2023) (Figure:5). The real-time monitoring information is shared with UTS, Jervis Bay Marine Park (JBMP), Royal Australian Navy and other interested parties since the installation. Public Access is also available via these links-

- [Jervis Bay Weather Buoy](#)
- [Twofold Bay Weather Buoy](#)



Figure 5: Water Quality Monitoring Sensors deployed in Jervis Bay and Twofold Bay Leases (Source: SCM 2023)

2.5 Forecast of operations for the next reporting period

SCM will incorporate new deployments in FY 2023-2024 as

1. To expand mussel grow-out lines at Jervis Bay, South Coast Mariculture will continue deploying unique shaftless anchors using [Marine Flex](#)'s Screw-in anchor technology to lay new lines over Callala North and Callala South based on the spat availability in the next fiscal year. This shaft-less and dive-less system is cost-effective with a vertical holding capacity of 25T. There will be no devastation of the seabed during installation and its minute footprint deems it an environmentally friendly technology (Source: Marine Flex Ltd 2022).
2. Experimentation will continue to understand the effect of variation in the orientation of buoys on production levels during heavy weather conditions. It will also determine if any visual pollution caused by exposed buoys is controlled for residents of Callala Beach.
3. SCM and SeaGen Aquaculture have received NSW DPI Translocation protocol (Appendix: C) to translocate blue mussel spat produced by [SeaGen Aquaculture Pty Ltd](#) at their source hatchery at Newhaven, Victoria. Blue mussel spat produced under this protocol may only be imported into NSW to farm blue mussels under Section 144 (Aquaculture Permit) of the NSW Fisheries Management Act 1994. The mussel brood stock used for production of this spat will be of NSW origin only, undergo

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histopathological analysis before undergoing the breeding program.

- Also, in accordance with Aquaculture Permit Certificate AP2554 Class A Extensive, SCM will translocate Sydney Rock Oyster (*Saccostrea glomerata*) Spat from by [SeaGen Aquaculture Pty Ltd](#), Victoria to NSW Waters (Appendix: D). A NSW Department of Primary Industries (NSW DPI) Fisheries Officer under the Fisheries Management Act 1994 or Authorised Officer under the NSW Biosecurity Act 2015 may examine batches of Blue Mussel Spat and Sydney Rock Oyster spat shipped from the source hatchery for SeaGen Aquaculture Pty Ltd at any time once a shipment enters NSW to ensure that the shipment complies with the protocol, the provisions of the NSW Biosecurity Act 2015, the Biosecurity Regulation 2017, the Fisheries Management Act 1994 and the Fisheries Management (Aquaculture) Regulation 2017.

3. Outcomes and actions from the previous Annual Environmental Report

(July 2021 – June 2022)

As per the Department’ feedback- Annual Review of the 2021 - 2022report, the Annual Report FY21-22 was considered generally satisfied resulting in no outcomes and the actions to be addressed from the previous annual report.

4. Operations and Maintenance

4.1 Stock Management

Callala North lease was first stocked in May 2020 with spat translocated from Twofold Bay. All mussels spat over the years has been sourced from Twofold Bay. SCM will continue to harvest mussels at Jervis Bay and conduct spat translocation from Twofold Bay (Appendix: B) and the registered hatchery as per the new NSW DPI Translocation Protocol (Appendix: C).

The spat stocking from July 2022 proceeded as follows:

Table 1: Callala North Lease (AL 15/001) stocking records July 2022 - June 2023 (Source: SCM, 2023)

Shipment Logbook Number	Date of Shipment	Source Estuary	Source Lease	Weight (kg)	Destination Estuary	Destination Lease
18659	06/09/2022	Two Fold Bay #52	AL 08/098	3200	Jervis Bay #25	AL 15/001
18660	28/09/2022	Two Fold Bay #52	AL	4800	Jervis Bay #25	AL 15/001

			08/098			
18661	01/11/2022	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18662	16/01/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18663	22/01/2023	Two Fold Bay #52	AL 08/098	4000	Jervis Bay #25	AL 15/001
18664	31/01/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18665	05/02/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18666	06/02/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18667	07/02/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18668	13/02/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18669	14/02/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18670	28/02/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18671	06/03/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18672	07/03/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18673	13/03/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18674	21/03/2023	Two Fold Bay #52	AL 08/098	2400	Jervis Bay #25	AL 15/001
18676	23/05/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18677	24/05/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18680	29/05/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18681	30/05/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18682	06/06/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18684	13/06/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18685	14/06/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18686	19/06/2023	Two Fold Bay #52	AL 08/098	4000	Jervis Bay #25	AL 15/001
18687	21/06/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
18688	27/06/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001

18689	28/06/2023	Two Fold Bay #52	AL 08/098	4800	Jervis Bay #25	AL 15/001
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Spat was collected and transported in accordance with the NSW Blue Mussel Spat Translocation Procedure (Appendix: B). NSW DPI was contacted 48hrs before spat collection on each occasion. The health status and growth rates of the stock were routinely monitored using visual checks and recorded in the [Marine Farming](#) app. Overall, the Blue Mussels grown out at Callala North lease displayed excellent health, survival and growth rates. No incidence of disease outbreak, pest occurrence or mortality was recorded during these regular inspections.

4.2 Harvest

Harvesting commenced on the first stocked Callala North (AL15/001) lines in November 2020. At harvest, the mussel ropes are pulled up and the mussels are stripped from the rope, tumbled to remove fouling, and sorted to remove damaged stock and any byproduct. Stripped ropes and buoys are stowed for cleaning and line redeployment. Any organic waste collected during harvesting is retained on board and taken back to shore for disposal. The mussels are harvested into large bags or bins on the deck of the work vessel *Blue Revolution* (Figure:6). Once the desired volume of mussels has been harvested, the product is transported to South Coast Mariculture's processing facility in Huskisson for processing and packing for the market.

Each harvest is assigned a Product Receival Number (PRN) as per the harvest docket to maintain the traceability of the product. This harvest docket enlists details on the source of the product and critical environmental conditions such as water temperature and condition of the harvested product.



Figure 6 Harvest operation on Blue Revolution 2021. (Source: South Coast Mariculture 2021)

4.3 Mussel Line Infrastructure

The South Coast Mariculture Callala North (AL 15/001) mussel line infrastructure has been inspected regularly since its deployment. Visual inspections are undertaken by SCM staff on arrival at the Callala North and South leases each workday for any infrastructure issues that may require maintenance.

Routine inspections are conducted weekly, and any associated maintenance has been undertaken as required covering components of the infrastructure including buoys, anchors, ropes, chains, and connectors, as well as the cardinal markers.

Maintenance logs are recorded using cloud-based vessel management software, [Seaflux](#) which manages and records site/operations-based activities.

4.4 Biofouling Removal

The lease infrastructure is naturally colonised by a range of marine biofouling organisms, including algae, ascidians, and barnacles. The removal of this biofouling is important to reduce resistance to currents and wave action which may jeopardise the integrity of the infrastructure e.g., stress moorings.

Buoys and ropes removed from the lease during harvest are cleaned onboard (Figure:7) and dried at the equipment yard before being re-deployed for spat stocking. Any organic waste generated onboard is collected to be disposed of at landfill facilities.



Figure 7: Biofouling being removed from a buoy during harvest. (Source: South Coast Mariculture 2023)

4.5 Waste Management

SCM disposes all domestic waste from wheelhouse and organic waste from harvest and processing to landfill (Table:2). All waste storage containers are inspected weekly to ensure efficient use and containment of the specific waste.

Table 2: Summary of waste generated by the South Coast Mariculture operations 2022-2023 (Source: SCM, 2023).

Waste Type	Quantity	Date	Method/Place of Disposal
Domestic Waste from Wheelhouse	3-5kg per week	During harvest and lease operations FY 2022- 2023	Brought to shore for landfill
Organic Waste from Harvest and Processing	10 tonnes (annual estimate)	FY 2022 - 2023	Landfill

Skips and bins are monitored regularly to ensure no cross-contamination. All waste removed from the site including products for reuse are also monitored to avoid any cross-contamination.

SCM continues to review the type of surplus materials produced and where possible change the site design and operation to minimise products ending in landfills. In the light of sustainable practices, most of SCM packaging materials are deemed recyclable.

4.6 Land-Based Operations

- South Coast Mariculture operates a mussel and oyster processing facility at 6 Bolton Road, Huskisson where the harvested product is cleaned, graded, and packed for the market.
- Jervis Bay Shellfish Market at Unit-1, 6 Bolton Road Huskisson is a local shellfish market, making fresh shellfish available to locals on most days since December 2021.
- SCM also operates an office and storage space for lease infrastructure components, gear and vehicles at 1A Erina Road, Huskisson.

Advancements at the SCM Processing Facility-

1. The Processing Facility is undergoing a major development as per local council regulations to aid future processing operations. It includes a new built-in chiller and freezer facility, product grading, inspection, and packaging areas along with designated maintenance and storage areas. All areas will be operational in FY2023-2024 after completion of ongoing development.

2. The stock holding capacity of wet storage tanks installed at the South Coast Mariculture has increased after the recent relocation and ongoing development. This wet storage facility has increased the efficiency of harvesting and processing operations by enabling mussels to be harvested the day before

processing and dispatch and before predicted high rainfall events.

3. SCM is launching a mussel cook-up line to expand the product range in the FY2023-2024. The ongoing development will set a base to start product trails in next financial year.

4.7 Equipment and Vessel Maintenance

Regular checks, visual inspections and significant examinations are conducted by the team and contractors to ensure the safety and performance of all equipment involved. Seaflux, a cloud-based vessel management software reduces the double handling of information for vessel safety and maintenance logs (Table:3). It facilitates the implementation of maintenance schedules, reporting and targets better safety culture, leadership among the crew.

Table 3: Summary of documentation recorded via Seaflux for equipment and vessel maintenance (Source: SCM, 2023).

Vessel logs	Fundamental documentation
Safety	<p>Safety Equipment Checks include watertight hatches, electric bilge pumps + alarms, VHF radio, anchoring equipment, charts publication + navigation equipment and gantry ropes.</p> <p>Safety Drills include anchors, emergency procedure engine failure, fire, grounding collision, pollution, and anchor drill</p>
Maintenance	<p>The maintenance schedule for lights, emergency batteries and grease gun</p>
Health and safety checks	<p>Incident, Accident and Medical Register, Hazard Register, Health and Safety Meetings and Dangerous Goods, Register.</p>

5. Chemical Use, Disease, and Introduced Pests

5.1 Chemical Use

No chemicals have been used on the South Coast Mariculture marine leases.

At SCM Processing Facility, UV lamp and ozone is used to disinfect the incoming seawater in the wet

storage tanks in compliance with NSW Food Authority. Emptied tanks are cleaned with a food-safe chlorine-based detergent and food-safe sanitiser using potable water only. Current Safety Data Sheets (SDS) are available onsite for any chemicals used for cleaning and maintenance of any equipment and machinery.

5.2. Disease and Introduced Pests

The risk of endemic diseases and parasites affecting the mussels on the leases is identified as very low. Several preventative measures have been employed to mitigate the potential impact of endemic diseases, parasites and pests on cultured stock including:

- Inspection of spat health before stocking
- Adherence to NSW DPI Blue Mussel spat translocation biosecurity protocol (Twofold Bay to Jervis Bay) (Appendix: B)
- Biofouling management;
- Maintaining appropriate stocking densities;
- Inspecting mussel health.
- Collecting samples for laboratory examination (when applicable); and
- Maintenance of personnel and farm equipment hygiene.

Mussels are inspected routinely when harvesting or stocking to assess health and survival. Spat received from Twofold Bay as per NSW DPI Blue Mussel spat translocation biosecurity protocol undergoes inspection before and after harvest and restocking to determine any mortalities due to unforeseen environmental factors. All records are maintained in [Marine Farming](#) app.

5.3. Disease and Parasites

The health status of the stock has been regularly inspected, including the potential occurrence of disease and parasites. There has been no significant disease or parasitic event on the South Coast Mariculture Callala North lease during the reporting period.

Naturally occurring barnacle over-catch has been identified as an issue that negatively impacts the appearance and marketability of the mussels. Barnacle over-catch is scraped off the mussels at the SCM land-based processing facility before the sale so that the mussel appearance meets consumer quality specifications. The incidence of barnacle over-catch is being monitored through production and processing records.

The research team at School of Environmental and Life Sciences University of Newcastle (UoN) have investigated the barnacle species affecting the leases and potential barnacle over-catch mitigation solutions such as timing and spat size when stocking, stock husbandry and barnacle removal during processing. This project aimed at characterising spatial and temporal patterns in biofouling on mussels and their relationship to mussel conditions. SCM will attend the final project seminar held by the research candidate of UoN and strategize husbandry practice accordingly in farm operations.

5.4. Stock Mortality and Disease

There have been no significant mortality or disease events on the South Coast Mariculture Callala North (AL 15/001) lease. Marine scavenger species (small fish and crustaceans) present on the lease are likely consume any Blue Mussel mortalities if they have occurred.

If a significant unexplained mortality or health issue should arise, samples of affected mussels will be sent to an approved veterinary laboratory for diagnosis.

5.5. Transfer of Spat

All spat (juvenile seed stock) transfers to the South Coast Mariculture marine leases have been per the NSW DPI Blue Mussel Spat Translocation Protocol (Twofold Bay to Jervis Bay) as per conditions of the South Coast Mariculture aquaculture permit AP2554.

The protocol specifies-

- Pre-translocation inspection conditions
- Pre-deployment in Jervis Bay treatment of spat conditions
- Reporting conditions
- Shipment documentation

NSW DPI Fisheries Officers have inspected spat translocations on a number of occasions and have been satisfied that SCM is following the protocol as written.

To optimise spat supply for marine leases in Jervis Bay and Twofold Bay, SCM in collaboration with SeaGen Aquaculture Hatchery have obtained NSW Spat Translocation protocol for Blue mussel spat and Sydney Rock Oyster Spat (Appendix: C&D) in June 2023.

5.6 Introduced Pests

Marine pests can potentially be spread by ballast water, and vessel hull biofouling (Commonwealth of South Coast Mariculture Annual Environmental Management Report

Australia, 2009).

Service vessels and infrastructure for the SCM leases sourced from outside NSW could represent a marine pest risk for the region, so the movement of service vessels and infrastructure has complied with the *National Biofouling Management Guidelines for Commercial Fishing Vessels* (Commonwealth of Australia, 2009). If the origin port of the vessel is known to have significant marine pest issues, a risk assessment is required, and mitigation measures must be undertaken to prevent the translocation of pests. Between July 2022 and June 2023, no new SCM vessels were brought to the lease site from outside NSW. The lease infrastructure has been colonised naturally by a range of marine biofouling organisms, including algae, ascidians, molluscs, and barnacles. Inspections of the South Coast Mariculture infrastructure and biofouling organisms have been regularly undertaken to ensure the early detection of potential pest species. No new pest species have been observed in the last year.

5.7 Training

Regular on-the-job training has been undertaken by South Coast Mariculture operations/production staff to support the objectives of the Environmental Management Plan, including

- Waste management training;
- Chemical handler training;
- Stock health and pest identification training;
- Training against all standard operating procedures;

Five staff members are currently trained as Approved Samplers under NSW Food Authority NSW Shellfish Program Water and Meat sampling training provided by University of Tasmania.

Along with this, special training was provided for Hazard Analysis Critical Control Point (HACCP), Food Safety Program, First Aid Training and Contribute to Workplace Health and Safety (WH&S) to interested employees to address workplace requirements.

6. Monitoring

6.1. Water Quality and Benthic Monitoring Program

The Water Quality and Benthic Environment Monitoring Program has been implemented by South Coast Mariculture to assess and mitigate potential impacts from the operations and is consistent with consent conditions issued under SSI-5657. The program includes monitoring of water quality, seabed surveys, sedimentary characteristics (including TOC), benthic macroinvertebrates and fish; samples and video

footage taken from the leases.

The first Baseline survey event for the Water Quality and Benthic Environment Monitoring Program was conducted by the University of Newcastle (UoN) in July 2019. The Baseline survey was intended to provide pre-farming measurements of the range of variables that have been approved in order to assess the environmental performance of the shellfish leases. The results from future sampling events within and around the shellfish leases are referenced against both this baseline data and the data collected concurrently at the control sites (Figure:8).

The second sampling event (Update 1) for the Water Quality and Benthic Environment Monitoring Program was conducted in August 2020, followed by third sampling survey (Update 2) in July 2022 by UoN. All Benthic survey reports are available on SCM website (www.southcoastmariculture.com.au).

6.1.1 Benthic Survey Update 1 Summary

In August 2020, sampling of the water quality and seabed environment was undertaken at the preexisting southern (Vincentia (AL 15/003)) and new northern (Callala North (AL 15/001 and Callala South (AL 15/002)) lease sites, with two associated controls for each lease, in Jervis Bay. This sampling represents the Update 1 survey and was sampled in the same way as for the Baseline study in July 2019, enabling unconfounded comparisons.

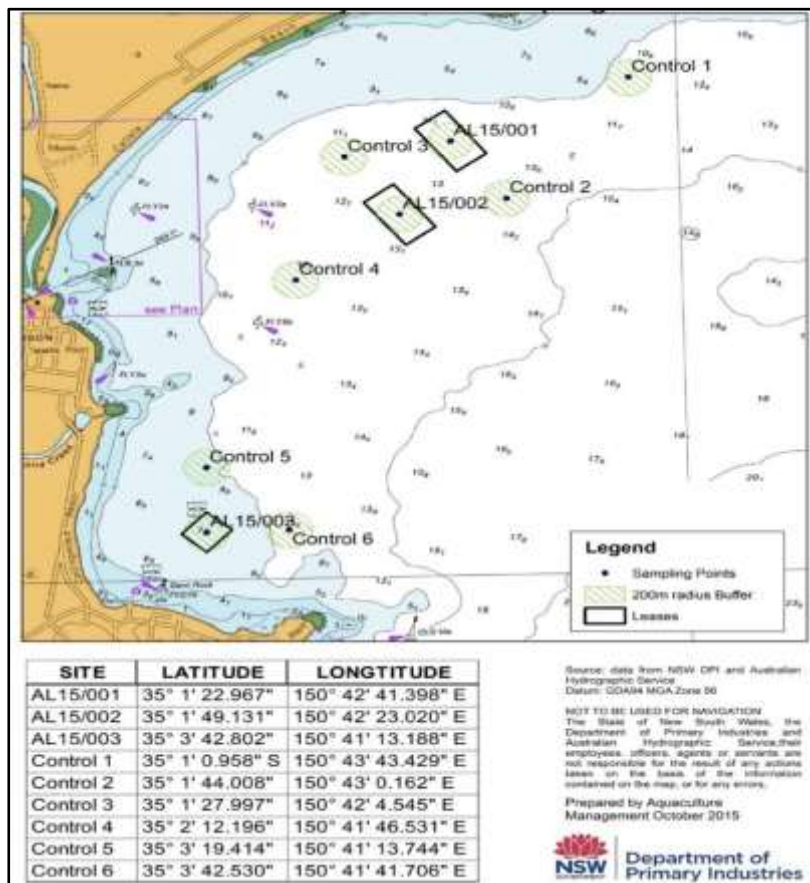


Figure 8: Map showing sampling points for benthic sampling program (Source: NSW DPI 2015). Benthic Environment Monitoring Program.

Water quality varied little among the nine sites and between bottom and surface waters. The waters were cool (16°C), pH was 7.7 and waters were always fully saturated with oxygen. Salinities were slightly less than seawater (32-33) and also of that recorded in Baseline, likely related to heavy rainfalls in late July 2020.

Remote Operated Vehicle (ROV) surveys showed that the seabed at all sites was sandy substrates, with drift algae and small attached macrophytes sometimes present. Small sharks and rays, sea stars and some fish of commercial and recreational importance were observed, as also smaller fish species that were associated with drift algae. Masses of drift algae were present at four sites but were not structured in “rows” recorded during Baseline and kelp fragments were still only recorded at Vincentia.

Neither flathead (*Platycephalus* spp.) and large schools of Yellowtail Scad were observed during ROV, unlike Baseline, although they were “captured” using BRUVS. Single and small clumps of mussels were sometimes observed on the seabed at CN.L, but with no evidence of darker sediments around those

mussels that could imply sediment anoxia. The mooring base now has a substantial amount of encrusting organisms that have developed since the Baseline and may eventually impact the durability of the structure. No further inspections of the leased infrastructure or the mussels themselves were undertaken.

The % Total Organic Carbon (%TOC) in the sediments at the Callala North Lease site (where mussels are presently stocked) and all other sites did not change significantly between the two winter sampling periods (Baseline and Update 1), indicating that there is no statistical evidence that the stocking of mussels is acting to increase the %TOC beneath the Lease site. Thus, mean (and SE) values for %TOC at the Callala North Lease site were 0.040 (0.004) at Update 1, which was less than 0.068 (0.008) at Baseline. The lack of a significant difference means there is no requirement (as per South Coast Mariculture (2015)) to examine and enumerate the benthic macroinvertebrate taxa for this report.

The mean %TOC values from Update 1 were typically lower at Callala North and Callala South (0.040-0.070) than at Vincentia (0.137-0.195), with the %TOC at the three sites in the last location slightly (but not significantly) higher in Update 1 vs Baseline (noting that no mussels are presently stocked at this site). The apparent increase in %TOC at the three sites in Vincentia may warrant future investigation as this indicator of organic enrichment may be arising from sources that are unrelated to the stocking of mussels.

Sedimentary characteristics of mean grain size and %mud were generally similar to Baseline. Thus, the mean grain size was similar between the lease and the two control sites at each of the three locations and significantly smaller at the Vincentia location (167-193 μm) vs Callala North and Callala South (237-263 μm). This pattern in mean grain size was reflected by the %mud being higher at Vincentia (0.11-0.15) vs all other sites (0.01-0.03).

All replicates for the benthic macroinvertebrate taxa were collected, sieved and picked. During the picking of the samples, a similar range of taxa was observed to that of the Baseline. Samples are safely stored at UoN.

Thirty-one of the 36 Baited Remote Underwater Video Systems (BRUVS) deployments recorded a total of 754 organisms. Yellowtail Scad (374) was again very common but was present in smaller schools than in Baseline. Unlike Baseline, substantial numbers of Trumpeter Whiting and Blue-spotted Flathead were observed, which partially explains the significantly higher taxa richness in Update 1.

The fish assemblages significantly differed between Update 1 and Baseline, but the biological

significance is difficult to assess, given the present limited understanding of temporal (including annual) changes in fish assemblages in Jervis Bay. The fish assemblages at CN.L (where mussels are presently stocked) were not statistically significant from those of any of the other sites in the study area.

The results from this Update 1 survey, based on water quality, gross seabed characteristics, sedimentary characteristics (particularly %TOC), benthic macroinvertebrate taxa and fishes, provide no evidence that the present stocking of mussels at CN.L is having an adverse effect on the marine environment in this area of Jervis Bay. It is noted that annual sampling is to be continued at the same time of year (winter), with the next occasion expected to be in July/August 2022 (travel restrictions delayed the 2021 survey) after the 2020 survey.

6.1.2 Benthic Survey Update 2 Summary

On 19 and 20 July 2022, sampling of the water quality and seabed environment was undertaken in Jervis Bay at the northern (Callala North and Callala South) lease sites, the first of which is stocked with blue mussels, and at the southern (Vincentia) lease site, with two associated controls for each lease site. This sampling represents the Update 2 survey (Appendix: A) and was sampled in the same way as for the Baseline and Update 1 studies in 2019 and 2020, respectively, enabling non-confounded comparisons. It is noted that, due to travel restrictions associated with COVID-19, sampling could not be carried out in 2021.

Water quality typically varied little among the nine sites and only occasionally between bottom and surface waters. On average, salinities were slightly less than that of seawater (32-33), waters were cool (14-15°C), pH ranged between 6.0 and 8.2 and waters were always fully saturated with oxygen. Surface salinities were lower than at depth at three of the nine sites, presumably reflecting recent rainfall and subsequent freshwater influx. Salinities were similar to Update 1, but slightly lower than in Baseline, reflecting ongoing La Niña conditions in 2021 and 2022.

Remote Operated Vehicle (ROV) surveys were not able to be conducted in this survey, owing to poor conditions both above and below the water. Alternatively, examinations of the videos for the BRUVS deployed for the fish assemblages showed that substrates were again characterised by pale rippled sand and shell debris, drift algae and small attached macrophytes. However, owing to the limited field of view in the BRUVS, it was not possible to draw any usable comparisons between the nine sites. It is recommended that, for future Update sampling events, that ROV sampling be carried out during no rainfall

days, or that a robust on-board shelter be constructed.

With regards to %TOC from the currently stocked site (Callala North Lease), no significant change was detected from that site in Baseline, with the mean (and SE) values being 0.082 (0.004) at Update 2 and 0.068 (0.008) at Baseline. %TOC differed significantly among the nine sites overall in Update 2, with mean (and SE) values ranging from 0.065 (0.007) at Callala North Control 1 (CN.C1) to 0.195 (0.092) at Callala South Control 1 (CS.C3).

Mean sediment grain size did not differ significantly between Baseline and Update 2, while % mud was significantly less in Update 2 than Baseline, with mean (SE) values overall being ~2% in Update 2 vs ~5% in Baseline. This is encouraging, despite recent La Niña conditions, as flooding waters have been linked with increases in % mud and declines in water quality in another Australian embayment. Mean grain size did not differ significantly between the nine sites in Update 2, with means (and SE) ranging from 0.125 (0.004) to 0.284 (0.067) mm for the nine study sites. In contrast, significant differences were detected for % mud, with a greater amount of these finer sediments (5-6%) at two of the Vincentia study sites vs 1-2% elsewhere.

All replicates for the benthic macroinvertebrate taxa were collected, sieved through 1 mm mesh and stored in 70% ethanol. However, the lack of a significant difference for %TOC between Baseline and Update 2, with particular reference to the stocked site, means there is no requirement (as per South Coast Mariculture (2015)) to examine and enumerate the benthic macroinvertebrate taxa for this report, and samples have been securely stored at the University to facilitate any future examinations.

Twenty seven of the four Baited Remote Underwater Video Systems (BRUVS) deployments at each of the nine sites recorded 13 species and 538 organisms, with the fish faunas being dominated by Yellowtail Scad, Blue-Spotted Flathead and Trumpeter Whiting and, for the elasmobranchs, the 4 Eastern Fiddler Ray was most abundant. Significantly more taxa were observed in Update 2 than Baseline, while the total MaxN showed no such differences between surveys. Multivariate analyses showed that differences between Update 2 and Baseline surveys were statistically significant (as was also the case with Update 1 vs Baseline), but these may not be biologically significant, as there is still a limited understanding of the fish assemblages in the study area. It is noteworthy that fish assemblages at the site at which mussels were stocked (Callala North Lease) did not differ significantly to the fish assemblages at any other site in the study area.

The results from this Update 2 survey, based on water quality, broad seabed characteristics, sedimentary characteristics (particularly %TOC), and fishes, provide evidence that the present stocking of blue mussels at the Callala North Lease site is having no detectable effect on the marine environment in this area of Jervis Bay. It is noted that annual sampling is to be continued at the same time of year (winter), with the next occasion expected to be in July/August 2023.

7. Marine Fauna Interactions

7.1 Marine mammals

The Marine Fauna Interaction Management Plan has been developed to identify and mitigate potential impacts on marine fauna through direct and indirect interactions with the South Coast Mariculture. The plan includes a Marine Fauna Interaction Protocol, Marine Fauna Monitoring Program and an Observer Protocol have been prepared as a combined document as the matters are interrelated.

The South Coast Mariculture Marine Fauna Interaction Committee consists of representatives from NSW National Parks and Wildlife Service, NSW DPI and South Coast Mariculture. Notably, the South Coast Mariculture operations team has extensive experience in managing interactions with marine wildlife around shellfish aquaculture operations. All members of the SCM operations team have been informed about the Marine Fauna Interaction Management Plan and received appropriate training.

All marine fauna interactions within the SCM shellfish leases have been monitored since the infrastructure was installed in June 2019. There have been two recorded incidents (Figure:9) of marine fauna observed within the lease area (Table:4) during this period:

- A seal pup was observed swimming in the Callala North lease on 11.08.2022. Species could not be identified.
- A loggerhead turtle was observed swimming in the Callala North lease on 20.12.2022.

Dolphins are regularly seen in Jervis Bay and the SCM operations team frequently observe dolphins in the bay during water sample collection or navigating to and from the leases. Whales and seals have been observed by the SCM operations crew out in the bay, but no whales have been observed within or in close proximity to the leases.

There is a local Jervis Bay Marine Mammal Research group (MMR) that monitors marine mammal numbers in and around the bay (www.marinemammalresearch.com). SCM has been in contact with MMR to suggest a possible collaboration of data gathering to improve understanding of marine mammal movement in JB. This could deliver improved management practices at SCM with regard to marine

mammal interactions / contact with the leases.

Table 4: Summary of marine fauna interactions with the SCM leases July 2022 – June 2023 (Source: SCM, 2023).

Date	Observations (travelling to & from SCM lease)			Observations (in and around lease)					
	Seal	Dolphin	Obs	Seal	Turtle	Obs	Nature of Interaction	Entangle	Comments & Actions
July22- June23	only one seen on most occasions	Number varies	Dolphin and seal sightings in the bay traveling to and from the lease						
11.08.2022				1		Swimming between the lines	Observed from the SCM vessel	Nil	Reported To Jervis Bay Marine Park
20.12.2022					1	Close to lease – travelling North. Playful, happy	Observed from the SCM vessel	Nil	Reported To Jervis Bay Marine Park



Figure 9: Marine mammal swimming through Callala North lease (AL 15/001) on 11.08.2022 and marine turtle on 20.12.2022. (Source: South Coast Mariculture, 2023)

7.2 Marine Turtles

During the reporting period there was one observation of marine turtle (Table:4) within and in close proximity to the SCM leases (Figure: 9) and the species identified as a loggerhead turtle (*Caretta caretta*) by SCM crew.

7.3 Marine Mammal Entanglement

There have been no reports of entanglements of marine mammals in SCM lease infrastructure during this reporting period.

8. Standards / Performance Measures and Environmental Targets / Strategies

In accordance with the SSI-5657 consent conditions the SCM operations team developed an Environmental Management Plan (EMP) which outlines the management practices and procedures to meet the standards and performance measures that apply to the SCM marine aquaculture lease development.

The EMP contains a number of sub-plans that provide further details on the respective standards and performance measures that apply to specific activities.

The EMP and associated sub-plans have been updated as Version:3 approved by the Department in September 2021 to ensure that they are still relevant in meeting the conditions within the SSI-657 consent and/or standards and conditions for the operation of the SCM marine aquaculture leases.

Independent environmental sampling that has been undertaken in 2019 (Baseline) prior to lease development, Update-1 Survey in 2020 and Update-2 Survey in 2022 (Appendix: A) after lease development and stocking has found no significant impact on benthic invertebrate ecology or water column chemistry within the SCM marine leases or at the control sites.

9. Navigational Interactions

SCM has worked closely in conjunction with NSW RMS to ensure that the Callala North (AL 15/001) and Callala South (AL 15/002) lease areas are safely delineated to ensure navigational safety.

The cardinal markers at the corner points of the Callala North and South leases (North, East, South, West) are IALA compliant Spar Buoys. Each of the four cardinal buoys has a specific buoy colour combination and day shape as follows:

The buoy flash pattern complies with the following:

- Continuous fast flashes = north;
- Three fast flashes = east;
- Six short fast flashes and one long flash = south; and
- Nine fast flashes = west.

South Coast Mariculture has adopted the recommendation from RMS for Quick (Q) flashing speed for Lease 1 Callala (AL15/001). A Very Quick (VQ) flashing speed is adopted for Lease 2 Callala AL15/002 to differentiate between the two leases for vessels.

There are two yellow light buoys at midway length for the Callala North lease and Callala South lease. These use a 5 quick flash every 20 seconds flash character to distinguish these markers from the cardinal buoys.

9.1 Navigation Incidents

No navigational incidents have occurred during this reporting period within SCM leases.

10. Structural Integrity and Stability

The Callala North (AL 15/001) and Callala South (AL 15/002) lease infrastructure has been monitored in accordance with the Structural Integrity and Stability Program outlined in the SCM EMP. Inspections of lease infrastructure have been conducted routinely (weekly) during the reporting period, focusing on evidence of faults, damage, excessive biofouling and loose lines or buoys.

Inspections have been particularly important after severe weather in order to minimise marine fauna entanglements and navigation hazards. A detailed service inspection was undertaken after every severe weather to cover all aspects of the infrastructure including cardinal marks, anchors and ropes.

No excessive or unusual biofouling has been observed during the reporting period.

11. Compliance

The following actions have been undertaken to ensure compliance with the consent conditions of the State Significant Infrastructure Approval SS1-5657.

11.1 Training

SCM personnel including employees, contractors and subcontractors, have received appropriate induction training and have the required skills and qualifications to fulfil their respective roles in a competent manner.

Minimum environmental training has included:

- An induction onto the SCM marine aquaculture leases and land-based sites;
- A briefing on the importance of conformity with the environmental policy, procedures and requirements of the Environmental Management Plan (EMP), as well as their roles and responsibilities;
- Specialised environmental training and instruction required for undertaking allocated tasks, especially in regard to compliance with the environmental conditions of the SSI-5657 consent;
- Other specific training and instruction requirements including emergency response and operation of specific equipment; and
- Regular meetings which have included discussions on safety issues, risk assessments and controls.

11.1.1 Site Meetings, Toolbox Meetings and Contractor Meetings

Any daily items or ongoing matters applicable to the environmental management of the SCM marine

aquaculture leases have been addressed by staff, consultants and subcontractors during site meetings, toolbox meetings and contractor meetings which have been conducted on an as needed basis. Minutes have been kept for all meetings and intended documents recorded in Seaflux.

11.2 Environmental Monitoring

A benthic monitoring program has been developed and implemented to meet condition D12. Independent benthic and water quality sampling and analysis has been carried out annually to provide baseline data plus comparative data following stocking of the lease. Water quality, benthic fauna, sediment chemistry and particle size have been analysed.

11.3 Review of Environmental Management Plans

Version:3 Environmental Management Plans (EMP) were approved by the Department in September 2021 and underwent a thorough Departmental and internal review at that time, prior to approval.

The Version:3 EMP are under review and approved versions will be available publicly via SCM website. Currently Appendix-1 Construction Deployment Plan and Traffic Management Plan (Version:4.1) and Appendix-7 Disease, Parasite and Pest Management Plan are under review as part of Stage:3 Full Commercialisation of leases and Translocation of Hatchery Reared Spat respectively. Recent versions will be uploaded on SCM website, once approved by the Department.

11.4 Annual Review of Jervis Bay Shellfish Program

The 2022 Annual reviews of Jervis Bay harvest areas was confirmed as Conditionally Approved for both Callala and Vincentia harvest areas upon Local program compliance with NSW Shellfish Program requirements on 21.12.2022 by NSW Food Authority. Also, SCM opted for voluntary seasonal closure to align with the mussel grow-out period on the lease from February 2023- May 2023.

11.5 Best Aquaculture Practices Certification

SCM was successful in regaining the Best Aquaculture Practices (BAP) certification in Australia by meeting the requirements of BAP as per the “Mollusk Farm Standard” Version 1.2, February 2023. BAP certified SCM in demonstrating international standards of environmental responsibility, social accountability, animal health and welfare and food safety. It has enabled SCM to become the first and only mussel farm in Australia to gain this accreditation and retain the accreditation second year in a row.

11.6 Independent Environmental Audit

As per the SSI-5657 approval conditions (E11), an independent environmental audit (IEA) final report was
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submitted to the department on 01.06.2022 and shared publicly upon the receiving the approval.

Of the 81 conditions, a total of 19 conditions were not triggered during the audit period. There were 20 non-compliances identified during the audit, the remainder of which were determined to be compliant. Of the 20 non-compliances, 10 required corrective actions. There were also five opportunities for improvement identified. Out of the 10 non-compliances, eight have been closed, one under review (Condition C1 of SSI5657) and another (Condition E6 of SSI5657) to be finalised in upcoming months (Table:5).

Table 5: Actions identified from Independent Environmental Audit (Source: SCM, 2023).

Action Identified	Audit Details	Details of Corrective Action	Completed Status and Date
Corrective action against non-compliances			
Condition C1 of SSI5657	This condition requires that the Construction and Deployment Environmental Management Plan (EMP) be prepared in consultation with Council and any other relevant stakeholders. There is no documentation available showing that this occurred.	When the next review and update of the EMP and sub-plans are completed, provide this to Council and any relevant stakeholders for review/	Currently under review
Condition E6 of SSI5657	The proponent shall submit a report to the Secretary demonstrating that they have actively attempted to work with local businesses, community groups, local aboriginal communities, or other local bodies to incorporate regional tourism and local employment and/or training opportunities into the Project. Initially, this non-compliance is against NSW DPI and SCM as the current proponent is responsible for corrective action closeout.	Prepare and submit a report to the Secretary demonstrating that they have actively attempted to work with local businesses, community groups, local aboriginal communities, or other local bodies to incorporate regional tourism and local employment and/or training opportunities into the Project.	Final Report to be submitted upon completion in the first quarter of FY23-24.

11.7 Non-Compliance

Non-compliance is defined as a non-fulfilment of a specified requirement (either legal, specified or policy) and a corrective action is defined as an action taken to eliminate the cause of a detected non-compliance and to mitigate any environmental impact. During FY 22-23, no non-compliance was issued to SCM as per any external auditing bodies and regulating authorities.

12. Community Consultation and Engagement

12.1 Community Consultation

The South Coast Mariculture project has been embraced by the local Jervis Bay community. During the reporting period SCM has worked closely with the people and businesses of the Jervis Bay region to ensure full transparency of the project from the beginning and to build positive relationships and foster strong links with groups such as

- Jervis Bay Marine Rescue
- Shoalhaven City Council
- Australian Maritime Museum
- Jerrinja Aboriginal Land Council
- Jervis Bay Recreational Fishing
- Jervis Bay Recreational Diving
- Wollongong University
- University of Technology Sydney
- University of Newcastle
- Kiama Lions Club

In addition SCM has been in communication with the following state and federal government departments and bodies:

- NSW Dept. Primary Industries
- NSW Roads and Maritime Services
- NSW Food Authority
- NSW Port Authority
- Marine Parks Authority
- Royal Australian Navy

12.2 Engagement with community

Community engagement has been facilitated on many occasions as during the reporting period the South

Coast Mariculture team has had regular interactions with local members of the community at the Wollamia and Huskisson wharf where people often enquire about the SCM marine aquaculture leases and the mussels. Local Community and interested parties were welcomed onboard to witness SCM farming and processing operations as Nowra Evening View Club, Sonic Objects and Sonic Architecture Dr. Nigel Helyer, interested chefs etc (Figure:10). SCM attended the local citizen science club gathering to share environmental and processing controls in place as part of NSW Shellfish Program and Food Safety.

A strong community focussed culture has been fostered within the SCM team so that all community interactions are handled with transparency, positivity and patience and feedback is noted and complaints are recorded and addressed.



Figure 10: SCM crew engaging with the local community and local groups (Source: South Coast Mariculture, 2023).

Also, to celebrate the occasion of World Oceans Day, on 06.06.2023, Jervis Bay Mussels and local seaweed science business Phycohealth, adorned the evening with a flavourful feast packed with mussels, oysters, and seaweed at the local Jervis Bay Brewery. The community joined this ticketed event and profits from every sold ticket went to the Australian Marine Conservation Society.

South Coast Mariculture has worked with local schools and supported student work experience and educate locals about mussel aquaculture and the marine environment (Figure:11). Local students have gained the deckhand and Coxswain experience during the school holidays with SCM Operations crew.



Figure 11: Local school students gaining deckhand experience and learning about sustainable mussel farming practices (Source: South Coast Mariculture, 2023).

The SCM team has organised one beach clean-ups at Callala beach and Frank Lewis Bay off the Wollamia wharf (Figure: 12) to address the concern of rising marine plastic pollution after a severe weather event. SCM also collaborated with OceanWatch Australia to run a – Tide to Tip beach cleanup event on 24th Feb 2023. These events have been a great opportunity to interact with tourists and residents who shared a positive outlook on the mussel aquaculture leases. The team earned laurels for its positive impact on the environment with its continual environmentally focused efforts. Also, it was noted that with each cleanup session, the amount of waste decreased (Table: 6) and the type of waste varied showing an interesting pattern. Further cleanup sessions will focus on this as well.

Table 6: Volume of rubbish collected during Beach Cleanup events conducted by South Coast Mariculture at Jervis Bay (Source: SCM 2023).

Date of Clean-up	Destination	Volume of rubbish collected
08.07.2022	Callala Beach and Frank Lewis Way	~15 kg
24.02.2023	Callala Beach and Frank Lewis Way	~12 kg



Figure 12: Beach Cleanups conducted by South Coast Mariculture. (Source: South Coast Mariculture, 2023)

The Jervis Bay mussel story has been published extensively in the media with segments on [ABC's Landline](#), on local television and radio and on the [BBC Reel](#) – giving great exposure to the project, to Jervis Bay and the greater Jervis Bay region.

Numerous government, non-government and stakeholder visitors have been taken out to the leases on regular occasions through the reporting period (Figure: 10).

The SCM website (www.southcoastmariculture.com.au) has been kept up to date so that environmental management, reporting and statutory approval documents are publicly available as per condition E13 of the conditions.

13. Feedback and Complaints

In compliance with condition E5 of the State Significant Infrastructure Approval SS1-5657, the

Community Stakeholder Communication Plan for the SCM marine aquaculture leases details the following:

- Identification of relevant community and other stakeholders;
- Details of procedures and mechanisms used to inform the community (including local aboriginal communities) and stakeholders of the developments progress and other issues;
- Processes to receive and manage feedback and complaints; and
- Phone, email and mail contact details for the development including a 24-hour contact number.

Local Councils have been informed of the procedures so that on receipt of any complaints they are able to redirect issues to the appropriate regulatory departments.

South Coast Mariculture's Feedback and Complaints Handling Protocols include:

- A contact number and a site contact person who manages complaints;
- A feedback and complaints register;
- Proposed mitigation measures and follow-up with the complainant;
- Contingency measures when repeated complaints are received including provisions for additional monitoring and amelioration measures;
- Compliance performance agreements with residents; and
- Reporting procedures to relevant government agencies or Council.

Feedback and complaints about the SCM marine aquaculture leases, land-based sites or company operations is registered via the following options:

- Mail: PO Box 6115, Griffith, ACT 2603
- Email: info@southcoastmariculture.com.au

13.1 Feedback and Complaints Register

A feedback and complaints register has been maintained by South Coast Mariculture and is regularly reviewed to determine the most appropriate response. The register lists information such as the following for feedback and complaints:

- Date;
- Person/s receiving the complaint;
- Name, address and contact phone number of the person(s) making the complaint;

- Specific details of the nature of the feedback or complaint; and
- Action undertaken in response to the feedback or complaint.

A record will also be made about whether the complaint originated from normal operational procedures, an ‘incident’ or an occasional procedure.

If from occasional procedures, discussions should be held with complainants regarding whether it was the timing or nature of the impact and how the impacts can be better managed. In many cases, an agreement can be reached between parties regarding procedures, timetables, duration and intensity.

If it resulted from normal operation procedures, these procedures should be reviewed in discussion with the relevant approval authorities. A summary of the feedback and complaints register will be included in the Annual Report that will be submitted to the Director-General. Feedback and complaints received during the past year will be compared to those received in previous years.

13.2 Complaints and Feedback Received During Reporting Period

One community feedback has been received during the 2022 - 2023 reporting period (Table:7). Detailed action report is listed on SCM Complaints register on the website.

Table 7: Complaints & Feedback Register of South Coast Mariculture (Source: SCM 2023).

Date	Name	Contact details	Nature of feedback/complaint	Action taken
05.04.2023	Member of public	Retained by SCM	Query sent by member of public- “A query. Has the mussel farm expanded recently. I have noticed from the beach it seems to have expanded towards the south. Thanks for the info”	Initial response by Sam Gordon on 06.04.2023 along with a Map of Jervis Bay Lease locations- Hello , I tried to call your mobile to provide an explanation to your inquiry. We have 2 x 20ha lease and 1 x 10ha lease approved for the culture of shellfish in Jervis Bay. The 2 x 20ha lease are both in front of Callala Beach and the 10ha lease is near Vincentia. See on Map . The

				<p>location of all three leases had been discussed at previous representations to the Callala Beach Progress Association, there has been no expansion of the lease area from the original approval.</p> <p>To date we had only developed lease AL15/001, we are now developing lease AL15/002 as per our approval with NSW Department of Planning, Industry and Environment. Developing the lease means installing the culture lines that the mussels grow on.</p> <p>I would be more than happy to discuss further over the phone or meet in person if more information is required.</p> <p>Kind Regards</p> <p>Sam”</p> <p><i>Followed by Member of Public’s response on 06/04/2023-</i></p> <p>“Thanks, Sam, for that information. I know that there were two leases in front of Callala, just did not know that you had started developing the second one. Be great if you could let us know in advance. Not to invite criticism, just to inform the</p>
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				<p>community what's happening out there. Once again thanks for your feedback</p> <p>Cheers</p> <p>--”</p> <p><i>On same day, Sam Gordon closed the query as-</i></p> <p>“Hello --,</p> <p>Point taken re: informing the community.</p> <p>Have a great Easter.</p> <p>Cheers</p> <p>Sam</p>
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Detailed action is listed on SCM Feedback and Complaints Register on our website.

14. References

- Commonwealth of Australia (2009) National Biofouling Management Guidelines for Commercial Fishing Vessels. Commonwealth of Australia.
- Joyce, A., Rubio-Zuazo, A.M. and Winberg, P.C. (2010) Environmental and Socioeconomic Considerations for Aquaculture in Jervis Bay, NSW. Fisheries Research and Development Corporation, Canberra.

15. Web References

Web Reference 1

Benthic Surveys

<https://www.southcoastmariculture.com.au/sustainability/environmental-reporting>

Web Reference 2

Marine Flex Ltd

<https://www.marineflex.com/screw-in-anchor-technology>

Web Reference 3

Xylem

<https://www.xylem.com/en-au/>

Web Reference 4

SeaGen Aquaculture

[https://www.seaгенераquaculture.com/](https://www.seaгенаquaculture.com/)

Web Reference 5

Jervis Bay Weather Buoy

<https://public.eagle.io/public/dash/gnnu7ol42v7pn2x>

Web Reference 6

Twofold Bay Weather Buoy

<https://public.eagle.io/public/dash/ylrdodlwb2nu15r>

16. Appendices

Appendix: A Update 2: Benthic Survey

UPDATE 2: Characterisation of the water
and seabed environment of the blue
mussel farm in Jervis Bay.

Margaret Platell, Troy Gaston, Alessandra Suzzi and Vincent
Raoult

School of Environmental and Life Sciences
University of Newcastle

Final Report to South Coast Mariculture

February 2023

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For full pdf see: [SCM Environmental Reporting](#)

Appendix: B Current NSW Spat Translocation Protocol



Department of
Primary Industries

Sam Gordon
Director
South Coast Mariculture Pty Ltd
PO Box 6115
Griffith ACT 2603

Our Ref: ACF20/253, RDOC22/60904

Dear Sam

Re: NSW Blue Mussel spat translocation protocol (Twofold Bay to Jervis Bay)

I refer to your email request dated 7 April 2022 requesting modifications to the NSW Blue Mussel spat translocation protocol (Twofold Bay to Jervis Bay) that applies to your Class A aquaculture permit (AP2554).

NSW Department of Primary Industries (NSW DPI) has considered your request and has approved the requested modifications. Please find attached a revised version of the NSW Blue Mussel spat translocation protocol (Twofold Bay to Jervis Bay) which now applies to your Class A aquaculture permit (AP2554).

If you require any further information, please do not hesitate to contact me on (02) 4916 3845.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Graeme Bowley'.

Graeme Bowley
Snr Policy Officer, Aquaculture
21/4/2022

NSW Department of Primary Industries - Fisheries
Port Stephens Fisheries Institute
Locked Bag 1, Nelson Bay NSW 2315 Tel: 02 4916 3900
ABN 199 483 254 63 www.dpi.nsw.gov.au/fishing/aquaculture

Shellfish Hatchery and Translocation Protocol

Translocation into Jervis Bay and Twofold Bay of blue mussel (*Mytilus galloprovincialis*) spat produced by SeaGen Aquaculture Pty Ltd, at 10 Beach Crescent Newhaven, Victoria

Purpose

The following biosecurity conditions and requirements have been developed to minimise the risk of the introduction of diseases and pests from Victorian waters into NSW waters via the translocation of blue mussel (*Mytilus galloprovincialis*) spat (juvenile seed stock) produced by SeaGen Aquaculture Pty Ltd at their hatchery at 10 Beach Crescent, Newhaven, Victoria, 3925 to blue mussel grow-out leases at Jervis Bay and/or Twofold Bay, NSW.

Scope

Blue mussel spat produced by SeaGen Aquaculture Pty Ltd at the source hatchery at Newhaven, Victoria will only be permitted to be placed into the waters of Jervis Bay and/or Twofold Bay, NSW where it can be demonstrated that the spat has been produced and translocated in accordance with the following protocol. Blue mussel spat produced under this protocol may only be imported into NSW by persons/entities ('the shipper') authorised to farm blue mussels under Section 144 (Aquaculture Permit) of the NSW *Fisheries Management Act 1994* with a special or specific condition on their NSW Department of Primary Industries (NSW DPI) Aquaculture Permit that for the purposes of section 216 (1) of the *Fisheries Management Act 1994* authorises blue mussel spat produced by SeaGen Aquaculture Pty Ltd at the source hatchery to be placed onto the leases authorised by that permit (see definition for 'shipper' below). Following the initial translocation by the shipper into waters of Jervis Bay or Twofold Bay NSW, the mussels may only be on-sold for further cultivation within NSW, or otherwise translocated for further cultivation within NSW where that sale or other translocation is to a person/entity authorised to farm the blue mussels under Section 144 of the *Fisheries Management Act 1994* at that additional location, and is subject to the record keeping and reporting requirements in this protocol as well as to all conditions in any protocols for that further translocation, conditions under the relevant Aquaculture permits and any other restrictions under the *Fisheries Management Act 1994*, the Fisheries Management (Aquaculture) Regulation 2017, the NSW *Biosecurity Act 2015* and the Biosecurity Regulation 2017.

A NSW Department of Primary Industries (NSW DPI) Fisheries Officer under the *Fisheries Management Act 1994*, or Authorised Officer under the NSW *Biosecurity Act 2015* may examine batches or any part of a batch of blue mussel spat shipped from the source hatchery for SeaGen Aquaculture Pty Ltd at any time once a shipment enters NSW to ensure that the shipment complies with this protocol, the provisions of the NSW *Biosecurity Act 2015*, the Biosecurity Regulation 2017, the *Fisheries Management Act 1994* and the Fisheries Management (Aquaculture) Regulation 2017.

Note: At any time a formal legal instrument can take effect that may override either parts of, or the entire, protocol.

Documentation requirements relating to translocation of blue mussel spat under this protocol must be provided to NSW Department of Primary Industries via email to both oyster.import@dpi.nsw.gov.au and aquaculture.administration@dpi.nsw.gov.au

General Biosecurity Duty



Shellfish Hatchery and Translocation Protocol Production and Translocation into NSW Waters of Sydney Rock Oyster (*Saccostrea glomerata*) spat produced by SeaGen Aquaculture Pty Ltd, at 10 Beach Crescent, Newhaven, Victoria, 3925

Purpose

The following biosecurity conditions and requirements have been developed to minimise the risk of the introduction of diseases and pests from Victorian waters into NSW waters via the translocation of Sydney Rock Oyster (*Saccostrea glomerata*) spat (juvenile seed stock) produced by SeaGen Aquaculture Pty Ltd at their hatchery at 10 Beach Crescent, Newhaven, Victoria, 3925 to Sydney Rock Oyster grow-out leases in NSW.

Scope

Sydney Rock Oyster spat produced by SeaGen Aquaculture Pty Ltd at the source hatchery at Newhaven, Victoria, will only be permitted to be placed into NSW waters where it can be demonstrated that the spat have been produced and translocated in accordance with the following protocol.

Sydney Rock Oyster spat produced under this protocol may only be imported into NSW by persons or entities ('the shipper') authorised to farm Sydney Rock Oysters under Section 144 (Aquaculture Permit) of the *Fisheries Management Act 1994* with a special or specific permit condition on their NSW Department of Primary Industries (NSW DPI) Aquaculture Permit, that for the purpose of section 216 (1) of the *Fisheries Management Act 1994* authorises Sydney Rock Oyster spat produced by SeaGen Aquaculture Pty Ltd in their hatchery at Newhaven Victoria to be placed onto the leases authorised by that permit (see definition for 'shipper' below).

Following the initial translocation by the shipper into waters of NSW, the Sydney Rock Oysters may only be on-sold for further cultivation within NSW, or otherwise translocated for further cultivation within NSW where that sale or other translocation is to a person/entity authorised to farm the Sydney Rock Oysters under Section 144 of the *Fisheries Management Act 1994* at that additional location, and is subject to the record keeping and reporting requirements in this protocol as well as to all conditions under the relevant Aquaculture permits and any other restrictions under the *Fisheries Management Act 1994*, the Fisheries Management (Aquaculture) Regulation 2017, the NSW *Biosecurity Act 2015* and the Biosecurity Regulation 2017.

A NSW Department of Primary Industries (NSW DPI) Fisheries Officer under the *Fisheries Management Act 1994* or Authorised Officer under the NSW *Biosecurity Act 2015* may examine batches of Sydney Rock Oyster spat shipped from the source hatchery for SeaGen Aquaculture Pty Ltd at any time once a shipment enters NSW to ensure that the shipment complies with this protocol, the provisions of the NSW *Biosecurity Act 2015*, the Biosecurity Regulation 2017, the *Fisheries Management Act 1994* and the Fisheries Management (Aquaculture) Regulation 2017.

Note: At any time a formal legal instrument can take effect that may override either parts of, or the entire, protocol.

Documentation requirements relating to translocation of Sydney Rock Oyster spat under this protocol must be provided to NSW Department of Primary Industries via email to both oyster.import@dpi.nsw.gov.au and aquaculture.administration@dpi.nsw.gov.au