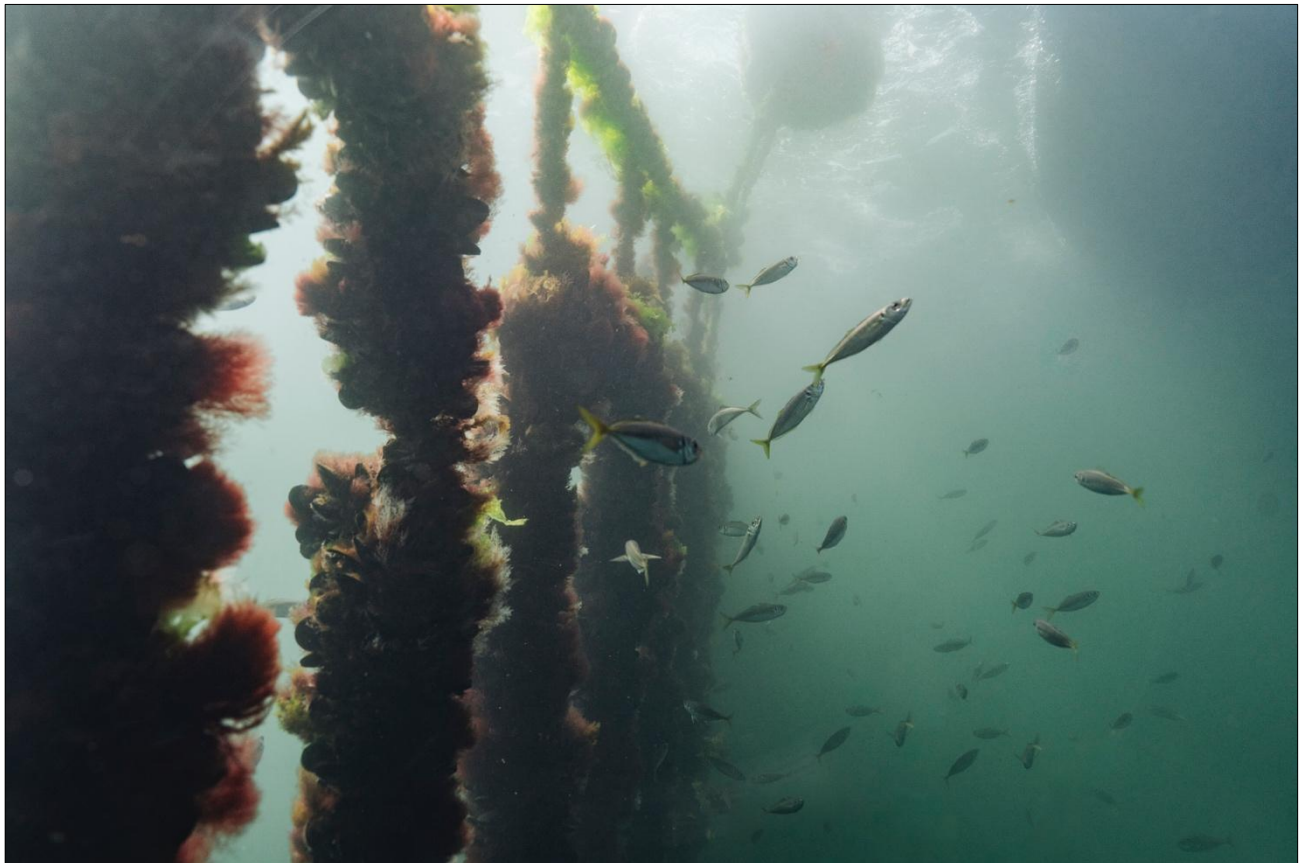




Annual Environmental Management Report



June 2019 - June 2020

Developed by South Coast Mariculture

South Coast Mariculture Annual Environmental Management Report

June 2019 - June 2020

More information

www.southcoastmariculture.com.au

Cover image: Underwater at South Coast Mariculture Callala North Lease (AL 15/001) 2020

Executive Summary

This report details the performance of the South Coast Mariculture marine aquaculture leases from 1st June 2019 – 31st June 2020. 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.

An independent benthic environmental survey was undertaken by the University of Newcastle prior to spat line deployment on the Callala North lease in 2019. The baseline surveys incorporated water quality, gross seabed characteristics, sedimentary characteristics (particularly %TOC), benthic macroinvertebrate taxa and fishes. It is noted that annual benthic environmental sampling is to be continued at the same time of year (winter), with the next occasion expected to be in July / August 2020

During the reporting period there was:

- successful stocking of Callala North lease (AL 15/001) with Blue Mussel spat (*Mytilus galloprovincialis*)
- no significant unexplained mortality or illness of mussels;
- no new introduced pest/species identified on the lease;
- no aquatic fauna entanglement incidents;
- no marine mammals within or around the leases;
- attendance of South Coast Mariculture directors and staff at community engagement forums;
- one water quality, benthic and video monitoring studies conducted by an independent contractor from the University of Newcastle;
- operational training of staff;
- review of operational and emergency management plans; and
- employment of 7 full-time 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 no sightings within the lease area;

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List of Abbreviations

EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EP&A Act	Environmental Planning and Assessment Act (1979)
FM Act	New South Wales Fisheries Management Act (1994)
IALA	International Association of Lighthouse Authorities
LGA	Local Government Area
MMR	Marine Mammal Research group Jervis Bay
MSDS	Material Safety Data Sheet
NPWS	National Parks and Wildlife Service
NSW DPI	New South Wales Department of Primary Industries
NSW DoPI	New South Wales Department of Planning and Infrastructure
NSW OEH	New South Wales Office of Environment and Heritage
POEO Act	Protection of the Environment Operations Act (1997)
JBMP	Jervis Bay Marine Park
NSW RMS	New South Wales Roads and Maritime Service
SCM	South Coast Mariculture
SWMS	Safe Work Method Statement
TMP	Traffic Management Plan
TOC	Total Organic Carbon
WH&S	Work Health and Safety

1. Introduction

The NSW Government recognises the need to develop sustainable and viable aquaculture. In November 2014, Fisheries NSW, a division of the NSW Department of Primary Industries (NSW DPI), obtained State Significant Infrastructure Approval SSI-5657 from the NSW Government Department of Planning and the Environment to establish three commercial extensive aquaculture leases totaling 50 Hectares within the marine embayment of Jervis Bay, NSW. The conditions of the approval stated that lease development must be initiated by November 2019.

South Coast Mariculture Pty Ltd was successful in securing the approval from Fisheries NSW to develop these leases, and in 2018 obtained lease-based aquaculture permit AP2554 from NSW DPI to culture a number of marine bivalve and aquatic plant species on the leases.

South Coast Mariculture has worked in close consultation with NSW DPI, local, state and federal government agencies, community groups, private enterprise and numerous other stakeholders to ensure that the planning, development, infrastructure deployment, operations and environmental management of the South Coast Mariculture 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 embayments 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 Jervis Bay leases will assist in providing food security during seasonal fluctuations that may affect Port Stephens and Twofold Bay.

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.



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

Figure 1 shows the locations of the South Coast Mariculture lease sites. The leases occupy a total area of 50 hectares consisting of the following coordinates outlined below:

- 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").

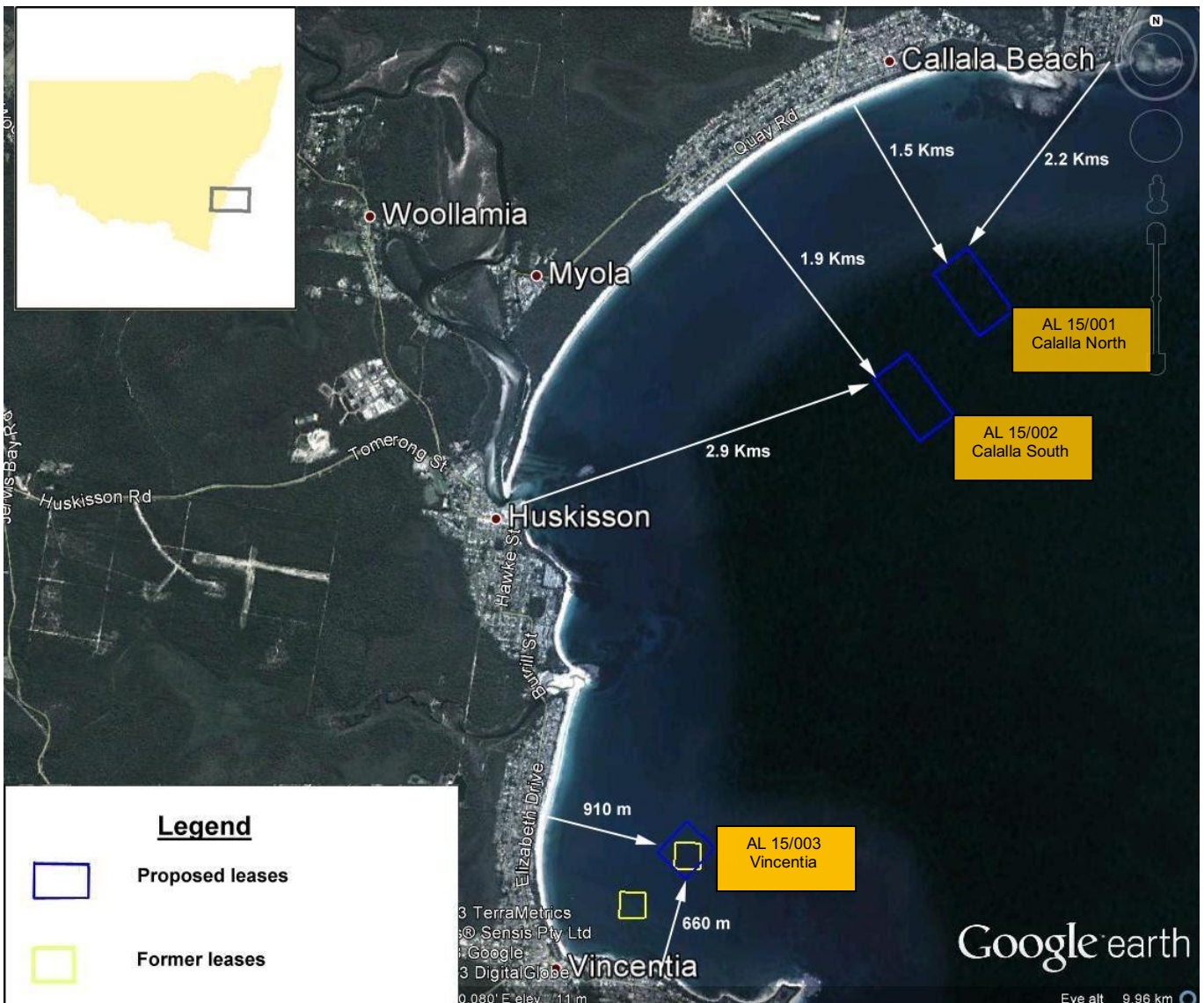


Figure 2: Location of the Commercial Shellfish Aquaculture Leases and the former Blue Mussel leases in Jervis Bay (Source: Fisheries NSW, 2013).

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 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:

- 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 Deployment and 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 not yet been developed.

2.3 Callala North AL15/001

Callala North lease AL15/002 infrastructure was deployed in June 2019 with the screw anchors being deployed on the 6th June 2019, the cardinal markers installed on the 10th June 2019 and the backbones installed on the 11th June 2019.

The lease infrastructure consists of 6m screw anchors at the end of each system connected to lengths of chain and polypropylene hard lay UV stabilized rope (25 – 35mm in diameter) which is connected to the main backbone rope. Dropper lines are suspended from these backbone ropes. End buoys are attached at each end of the system and support buoys are attached along each backbone rope. Four navigation buoys are positioned on the corners of the commercial lease.

A single spat collection line was deployed on the 16th July 2019. The lease was first seeded in May 2020 with wild caught *Mytilus galloprovincialis* spat translocated from Two Fold Bay lease AL06/002.

From May through to end of June 2020, 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).



Figure 3 Inspection of lease lines at Callala North lease (AL 15/001) (Source: South Coast Mariculture 2020)

3. Operations and Maintenance

3.1. Stock Management

Callala North lease (AL 15/001) was stocked between May 2020 and June 2020 with spat translocated from Twofold Bay as follows:

Shipment Logbook Number	Date of Shipment	Source Estuary	Source Lease	Volume Moved / kg	Destination Estuary	Destination Lease
17601	27/05/2020	Two Fold Bay	AL 06/002	2600	Jervis Bay	AL 15/001
17602	4/06/2020	Two Fold Bay	AL 06/002	2400	Jervis Bay	AL 15/001
17603	4/06/2020	Two Fold Bay	AL 06/002	2400	Jervis Bay	AL 15/001
17604	27/05/2020	Two Fold Bay	AL 06/002	2400	Jervis Bay	AL 15/001
17605	16/06/2020	Two Fold Bay	AL 06/002	4000	Jervis Bay	AL 15/001
17606	18/06/2020	Two Fold Bay	AL 06/002	4000	Jervis Bay	AL 15/001
17607	23/06/2020	Two Fold Bay	AL 06/002	4000	Jervis Bay	AL 15/001
17608	30/06/2020	Two Fold Bay	AL 06/002	4000	Jervis Bay	AL 15/001

Table 1: Callala North Lease (AL 15/001) stocking records June 2019 – June 2020. (Source: South Coast Mariculture, 2020)

Spat was collected and transported in accordance with the NSW DPI spat translocation protocol. NSW DPI were contacted 48hrs prior to spat collection on each occasion.

The health status and growth rates of the stock were routinely monitored using visual checks. Overall the Blue Mussels grown out at Callala North lease displayed excellent health, survival and growth rates.

3.2. Harvest

No harvesting was carried out during the reporting period.



Figure 4 Inspection of Callala North lease lines AL 15/001 from the Blue Revolution (Source: South Coast Mariculture 2020)

3.3. Mussel Line Infrastructure

The South Coast Mariculture Callala North (AL 15/001) mussel line infrastructure has been inspected regularly since its deployment in 2019. Visual inspections are undertaken by SCM staff on arrival at the Callala North lease each work day for any infrastructure issues that may require maintenance.

Routine inspections and any associated maintenance have been undertaken at least every three months and have covered components of the infrastructure including buoys, anchors, ropes, chains, and connectors, as well as the cardinal markers.

3.4. Biofouling Removal

The lease infrastructure is naturally colonised by a range of marine biofouling organisms, including algae, ascidians, molluscs 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 will be removed from the lease when harvesting commences in November 2020 and cleaned and dried before being re-deployed for spat stocking.



Figure 5 Removal of biofouling from buoys at Callala North lease AL 15/001 (Source: South Coast Mariculture 2020)

3.5. Waste Management

The quantity and types of wastes generated by the SCM operations during the first year of operation have been summarised in Table 2. All waste storage containers have been inspected weekly to ensure that they are maintained in a condition appropriate for their use and containment of the specific waste.

Waste Type	Quantity	Date	Method/Place of Disposal
Domestic Waste from Wheelhouse	2 – 3 kg per week	During lease operations June 2019 – June 2020	Brought to shore for landfill
Biofouling removed from infrastructure	50 – 100kg	During lease operations June 2019 – June 2020	Brought to shore for landfill

Table 2: Summary of waste generated by the South Coast Mariculture operations 2019 - 2020. (Source: South Coast Mariculture, 2020)

Skips and bins have been monitored regularly to ensure that cross contamination doesn't occur. All waste removed from the site including products for reuse, have also been monitored to ensure there is no cross contamination. SCM will continue to review the type of surplus materials produced and where possible change the site design and operation to minimise products that go to landfill. Recycling or reuse of waste is a priority.

3.6. Land Based Operations

South Coast Mariculture operates a mussel processing facility at Huskisson where the mussels will be cleaned, graded and packed live for market once harvesting commences.

In addition to the processing facility at Huskisson South Coast Mariculture also operates a shed with and office and storage space for lease infrastructure components, gear and vehicles.

4. Chemical Use, Disease and Introduced Pests

4.1. Chemical Use

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

4.2. Disease and Introduced Pests

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

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

Mussels are inspected routinely when harvesting or stocking to assess health and survival.

4.3. 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 could negatively impacts the appearance and marketability of the mussels. Barnacle over-catch will have to be scraped off the mussels at the SCM land based processing facility prior to sale so that the mussel appearance meets consumer quality specifications.

4.4. Stock – Mortality and Disease

There have been no significant mortality or disease events on the South Coast Mariculture Callala North lease. Marine scavenger species (small fish and crustaceans) present on the lease are likely to have consumed 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.

4.5. Transfer of Spat

All spat (juvenile seed stock) transfers to the South Coast Mariculture marine leases have been in accordance with the NSW DPI Blue Mussel Spat Translocation Protocol (Two Fold Bay to Jervis Bay) as per condition 4.3 of the South Coast Mariculture aquaculture permit AP2554

The protocol specifies:

- Pre-translocation inspection conditions
- Pre-translocation 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.

4.6. Introduced Pests

Marine pests can potentially be spread by ballast water, and vessel hull biofouling (Commonwealth of Australia, 2009).

Service vessels and infrastructure for the SCM leases sourced from outside NSW could represent a marine pest risk for the region, so 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 translocation of pests.

During the reporting period one vessel was brought from Tasmania to New South Wales.

Blue Revolution – a large harvest and spat deployment vessel.

Specifications: 15m x 6.5m catamaran

Preparation: Vessel was brand new and launched in Tasmania on 15th May 2020. (Certificate of Survey attached Appendix 3)

Transfer: Deployed to NSW from Tasmania on 15th May 2020

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 early detection of potential pest species. No new pest species have been observed in the last year.

4.7. 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;

In addition, four staff have now received training by the NSW Food Authority in NSW Shellfish Program water and meat sampling.

5. Monitoring

5.1. 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 operation and is consistent with consent conditions issued under SSI-5657.

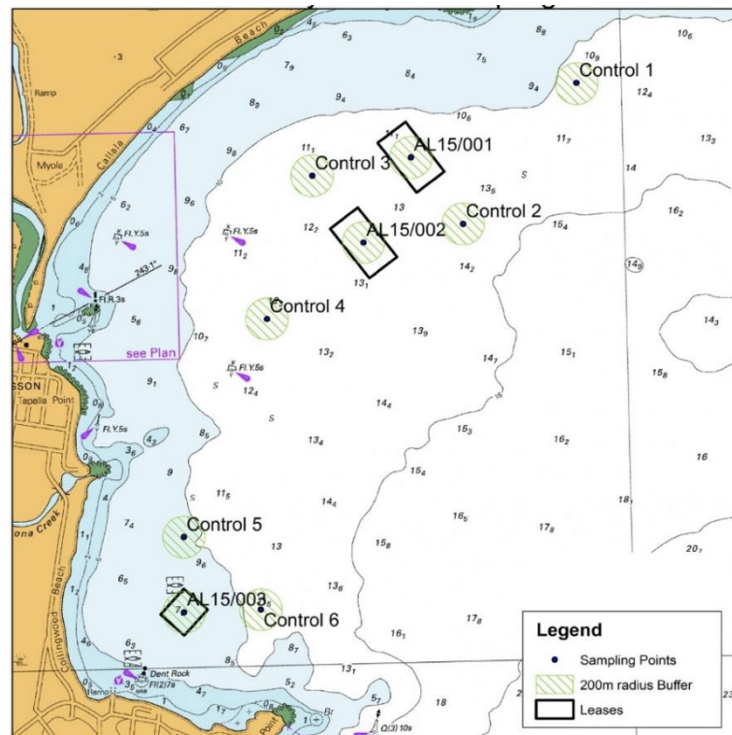
The Program includes monitoring of: water quality, seabed surveys, sedimentary characteristics (including TOC), benthic macroinvertebrates and fish; samples and video footage are taken from under the leases.

A baseline survey event for the Water Quality and Benthic Environment Monitoring Program was conducted by the University of Newcastle in July 2019.

The Baseline survey is 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 will be referenced against both this baseline data and the data collected concurrently at the control sites.

The second sampling event (Update 1) for the Water Quality and Benthic Environment Monitoring Program will be conducted by the University of Newcastle in July / August 2020.

It is noted that annual sampling is to be continued at the same time of year (winter), with the third survey expected to be in July/August 2021.



SITE	LATITUDE	LONGITUDE
AL15/001	35° 1' 22.967"	150° 42' 41.398" E
AL15/002	35° 1' 49.131"	150° 42' 23.020" E
AL15/003	35° 3' 42.802"	150° 41' 13.188" E
Control 1	35° 1' 0.958" S	150° 43' 43.429" E
Control 2	35° 1' 44.008"	150° 43' 0.162" E
Control 3	35° 1' 27.997"	150° 42' 4.545" E
Control 4	35° 2' 12.196"	150° 41' 46.531" E
Control 5	35° 3' 19.414"	150° 41' 13.744" E
Control 6	35° 3' 42.530"	150° 41' 41.706" E

Source: data from NSW DPI and Australian Hydrographic Service
Datum: GDA94 MGA Zone 56

NOT TO BE USED FOR NAVIGATION
The State of New South Wales, the Department of Primary Industries and Australian Hydrographic Service, their employees, officers, agents or servants are not responsible for the result of any actions taken on the basis of the information contained on the map, or for any errors.

Prepared by Aquaculture Management October 2015



Figure 6: Map showing sampling points for benthic sampling program (Source: NSW DPI 2015). Benthic Environment Monitoring Program.

5.1.1. Summary Baseline survey

The Baseline Survey Report is attached as an appendix (Appendix 1) and is available on the South Coast Mariculture website (www.southcoastmariculture.com.au) and the results are summarised below:

Baseline sampling of the water quality and seabed environment at the pre-existing southern (Vincentia, V) and new northern (Callala North and Callala South, CN & CS) lease sites, with two associated controls for each lease was carried out in July 2019 for South Coast Mariculture in Jervis Bay.

The water depth at the nine sites ranged between 8.5 m (Vincentia Lease, V.L) and 14.2 m (Callala North Control 2, CN.C2). Water quality varied little among the nine sites and between bottom and surface waters, except that turbidity was slightly greater at depth (8.2 vs 6.6 NTU). Average salinity was that of seawater (35-36), waters were cool (15°C), pH was 8.4) and waters were well-oxygenated (95 to 100% saturation).

Remote Operated Vehicle (ROV) surveys showed that the seabed at all sites was characterised by pale sand, small attached plants (macrophytes) and drift algae and observations of stingarees, seastars, flathead and seapens. There were branching sponges at one site (CN.C1), extensive drift algae rows, with associated fish and epifaunal molluscs, at three northern sites (CN.C2, CS.C3 & CS.C4), while the southernmost sites (Vincentia) had evident surface burrows and limited drift algae, with some kelp blades.

Mean grain size was similar between the lease and the two control sites at each of the three lease locations and significantly less at the Vincentia location (186-237 µm) vs Callala North and Callala South (291-323 µm). This was reflected by the mean %mud and %Total Organic Carbon (TOC) being greatest at Vincentia and least at Callala North and Callala South. The mean TOC ranged between 0.05% at CS.C3 to 0.18% at V.C6. It is noted that the scope of future sampling will be dictated by any changes in the mean TOC from Baseline, as per the South Coast Mariculture (2015) Benthic Monitoring Plan.

A total of 5127 benthic macroinvertebrates were counted and was dominated by crustaceans (45%), bivalve molluscs (40%) and polychaetes (13%). Heart urchins were relatively large and conspicuous but contributed <1% overall. The number of taxa (richness) was significantly greater at the Vincentia location, while the numbers of animals(abundance)showed no consistent differences among the nine sites. The taxonomic composition of the benthic macroinvertebrate assemblages differed significantly between most sites, except for some in the more northern parts, and these differences were most obvious between Vincentia and the two other lease locations.

Twenty-eight of the 36 Baited Remote Underwater Video Systems (BRUVS) drops were successful with a total of 805 organisms observed. Yellowtail Scad (687) were most dominant, with large schools observed at all sites except CN.C1. Small numbers of flathead and Eastern Fiddler Ray were observed at all sites. Significant differences in the fish assemblages were shown for only CN.C1 vs the other two sites from Callala North and two of the three sites in Vincentia, reflecting mainly the Port Jackson shark being more abundant at CN.C1. It is noted that there was loss of replication due to turbidity issues and cameras falling awkwardly.

The results from this Baseline Study provide a robust background, based on water quality, seabed surveys, sedimentary characteristics (including TOC), benthic macroinvertebrates and fish, against

which any potential future changes from mussel aquaculture activities can be assessed. It is suggested that sampling be continued at the same time of year (winter) during the time that the lease is operational.

6. Marine Fauna Interactions

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 no recorded incidents of marine fauna observed within the lease area during the reporting period.

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.

Date	Observations (travelling to & from SCM lease)				Observations (in and around lease)						
	Humpback Whale	Sea I	Dolphin	Obs	Humpback Whale	Seal	Dolphin	Obs	Nature Of Interaction	Entangle	Comments & Actions
June 2019 – June 2020			Number varies	Daily dolphin sightings in the bay travelling to and from the lease							

Table 3: Summary of marine fauna interactions with the SCM leases June 2019 – June 2020. (Source: SCM, 2020)

6.2.1 Marine Turtles

During the reporting period there were no observations of marine turtles within or in close proximity the SCM leases.

6.2.2 Marine Mammal Entanglement

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

7. 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 which provide further details on the respective standards and performance measures that apply to specific activities.

The EMP and associated sub plans will undergo periodical reviews to ensure continuous improvement and reactive management and to ensure that the plans are still relevant in meeting the conditions within the SSI-657 consent and/or standards and conditions for operation of the SCM marine aquaculture leases.

The environmental benthic monitoring was started in July 2019 and is to continue annually for at least three years from the commencement of operation, with survey Updates 1, 2 and 3 to be completed in 2020, 2021 and 2022 respectively to assess any potential change as production biomass of stock increases through time.

8. Navigational Interactions

SCM has worked closely in conjunction with NSW RMS to ensure that the Callala North (AL 15/001) lease area is safely delineated to ensure navigational safety

The cardinal markers at the corner points of the Callala North 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). In future when the lease is developed a Very Quick (VQ) flashing speed will be 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. These use a 5 quick flash every 20 seconds flash character to distinguish these markers from the cardinal buoys.

8.1. Navigation Incidents

There have been no reported incidents of navigation incidents on or around the lease areas during the reporting period.

9. Structural Integrity and Stability

The Callala North (AL 15/001) 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.

An annual detailed service inspection was undertaken in June 2020 to cover all aspects of the infrastructure including anchors, ropes, chains and connectors.

No infrastructure faults were observed during the reporting period.

10. Compliance

A number of actions have been undertaken to ensure compliance with the consent conditions of the State Significant Infrastructure Approval SS1-5657

10.1. 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 (OEMP), 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.

10.2. 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

10.3. 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 which included ROV video surveys.

10.4. Review of Environmental Management Plans

A review of the Environmental Management Plan (EMP) will be conducted periodically after the commercial operations have commenced on the SCM marine aquaculture leases. The EMP will be reviewed for usage, effectiveness and compliance issues. The EMP will continue to be reviewed by the SCM operations team every six months.

10.5. 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.

There have been no incidents of non-compliance during the reporting period.

10.6. 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
- Callala Beach Progress Association
- Vincentia Ratepayers and Residents Association
- Huskisson Woollamia Community Voice
- Huskisson Primary School
- Jerrinja Aboriginal Land Council
- Jervis Bay Recreational Fishing
- Jervis Bay Recreational Diving
- Wollongong University
- Australian Hydrographic Office
- 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
 - Crown Lands

Jervis Bay mussels are now featured on the menu of the Jervis Bay Hotel and other local restaurants and are becoming a drawcard for visitors to the region.

South Coast Mariculture has worked with locals schools such as the Huskisson Primary School and supported student work experience and education about mussel aquaculture and the marine environment.

During the reporting period the South Coast Mariculture team has had regular interactions with local members of the community at the Huskisson wharf where people often stop to ask about the SCM marine aquaculture leases and the mussels. 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.

The SCM team has participated in Jervis Bay clean up days. 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.

At the time of writing, the SCM website is being developed so that environmental management, reporting and statutory approval documents can be made publicly available as per condition E13 of the conditions



Figure 7: Local school group engaging with South Coast Mariculture crew 01/12/2020. (Source South Coast Mariculture 2020)

11. 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 includes:

- A contact number and a site contact person who manages complaints;
- A feedback and complaints register (See Section 4.1);
- 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

11.1. 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 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 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;

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.

11.2. Complaints Received During Reporting Period

During the reporting period there have been no registered complaints received.

12. 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.

Web References

Web Reference 1

Benthic Baseline Survey

<https://www.southcoastmariculture.com.au>

13. Appendices

13.1. Appendix 1 – Baseline Survey.

For full pdf see:

www.southcoastmariculture.com.au/sustainability/environmentalreporting

BASELINE: Characterisation of the water and seabed environment of the proposed mussel farm in Jervis Bay.

Margaret Platell, Troy Gaston and Vincent Raoult
University of Newcastle

Final Report to South Coast Mariculture

MARCH 2020

13.2. Appendix 2 – Blue Revolution Certificate of Survey

CERTIFICATE OF SURVEY

Schedule 1

*Marine Safety (Domestic Commercial Vessel) National Law Act 2012,
Marine Order 50.3 (Certificates of survey – national law)*

Name of vessel BLUE REVOLUTION	Type of vessel Power Catamaran	Unique vessel identifier 457230	Certificate number COS-94407-001
Measured length (m) 14.73	Measured breadth (m) 6.45	Measured depth (m) 1.800	Gross tonnage (if applicable)
Engine make/type CUMMINS (X2)	Engine power (kW) 213	Hull material Aluminium	Survey frequency MEDIUM

Class(es) and number of persons this vessel is certified to carry

Class	Crew	Unberthed passengers	Berthed passengers	Special personnel
3C	4	0	0	0

Note: the total number of pas.

Conditions

- THE OWNER AND MASTER MUST ENSURE THAT SIDE RAILS ARE TO BE FITTED AT ALL TIMES WHEN THE VESSEL IS IN 'C' WATERS.
- THE OWNER AND MASTER MUST ENSURE THAT SIDE RAILS ARE TO BE FITTED AT ALL TIMES WHEN THE VESSEL IS NOT HARVESTING OR CONDUCTING FARMING OPERATIONS, INCLUDING WHEN THE VESSEL IS TRANSITING.
- THE OWNER AND MASTER MUST ENSURE THAT THE SAFETY EQUIPMENT IS TO BE STOWED SO THAT IT IS AVAILABLE FOR USAGE DURING VESSEL OPERATIONS. ALL CREW ARE TO DON A PFD WHEN WORKING ON DECK AND THE SIDE RAILS ARE REMOVED.
- THE OWNER MUST ENSURE THAT THE STABILITY BOOKLET TO BE ONBOARD AT ALL TIMES AVAILABLE FOR MASTERS USE.

This certificate is in force until 05 May 2025, unless suspended or revoked.

DELEGATE OF THE NATIONAL REGULATOR

PO Box 2181, Canberra ACT 2601

p 1800 627 484

w www.amsa.gov.au

Issued: 25 May 2020

Certificate Number: COS-94407-001

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