BLUE ECONOMY
COOPERATIVE RESEARCH CENTRE

BASS STRAIT BLUE ECONOMY ZONE AQUACULTURE RESEARCH TRIAL IN COMMONWEALTH WATERS

Extended Project Description

REPORT

AUGUST 2024

Australian Government
Department of Industry, Science and Resources

Cooperative Research Centres Program

The Blue Economy Zone

Australia's first aquaculture research trial in Commonwealth waters is supported by funding from the Fisheries Research and Development Corporation on behalf of the Australian Government and the Blue Economy CRC.

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1. About the Project

1.1. Project details

The Blue Economy CRC led Aquaculture Research Trial in Commonwealth Waters (the proposed action) is a temporary multi-species aquaculture research activity within the designated Bass Strait Fisheries Arrangement Area for marine farming research activities in the Australian Fishing Zone.

The proposed action will involve the establishment, commissioning, operation, evaluation, and decommissioning of a **research-scale multi-species farming operation** in the highly active and open waters of Bass Strait, approximately 12 kilometres off the coast of Burnie, Tasmania.

The Research Trial will take place over a **three-year period** and is expected to **commence in Spring 2024,** with activities and infrastructure being **decommissioned at the end of 2027.**

The Research Trial area is suitable for a 6-bay grid mooring structure and will involve commissioning a **4-bay grid mooring system. Two pens** for finfish production will be activated **(Tasmanian Atlantic salmon and kingfish).** The two active pens will hold **15,000 fish** each, well below commercial levels.

This research operation will use a hybrid of high-energy precision farming and traditional farming. The mooring system may be extended to the maximum 6-pen configuration, should additional research activities into submersible pens, seaweed and shellfish farming require, subject to funding and approval.

A comprehensive **Research and Operational Plan** will guide activities on the Research Trial site, as a highly experienced multi-disciplinary research and operational team tests the capability of existing and new offshore/high-energy aquaculture farming systems in these deeper and more high energy waters.

The Blue Economy CRC research and operational team will adopt an **evidence-based approach** to address research questions on fish husbandry, gear and system integrity, environmental conditions, and community and marine user sentiment.

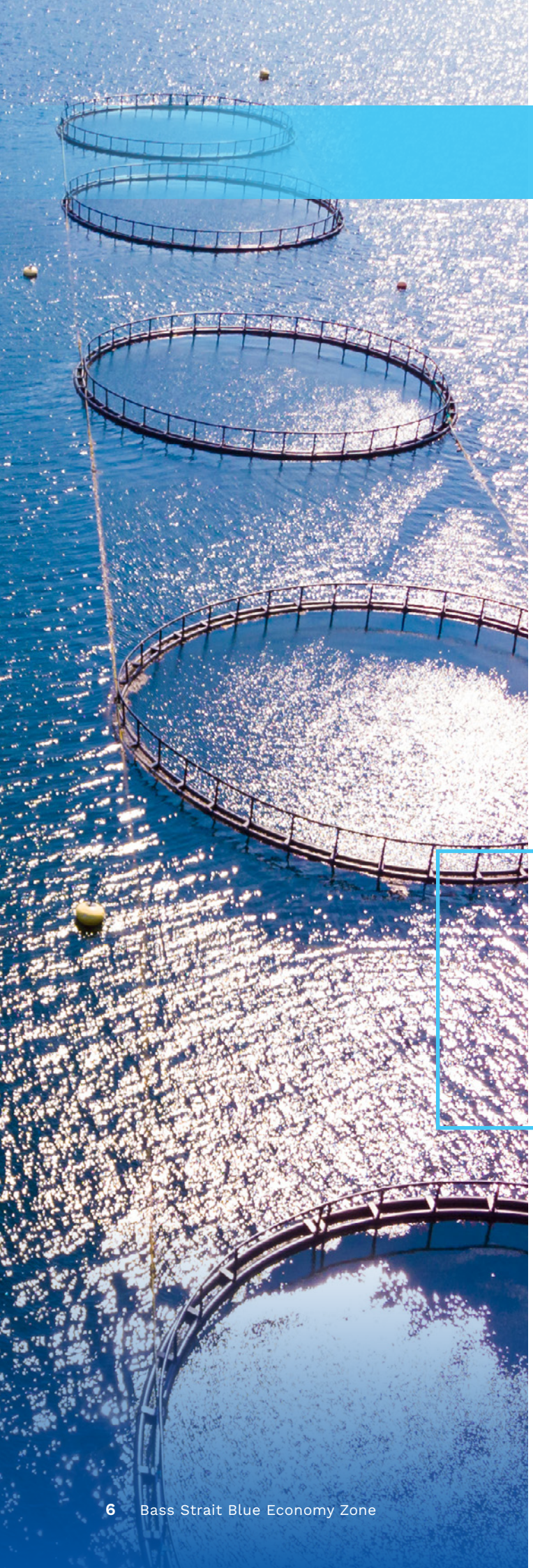
This research will lay the foundation for future governance considerations for the sustainable, equitable offshore aquaculture in Commonwealth waters.

Furthermore, the proposed action is in accordance with the arrangement between the Commonwealth and Tasmania in relation to **marine farming research activities in the Australian Fishing Zone**. The proposed action delivers upon the intent of the 2021 and 2022 MOUs between the Commonwealth and Tasmanian governments:

- "To support the implementation and operation of an aquaculture research trial in Commonwealth waters adjoining Tasmanian waters in Bass Strait" and
- "To support the implementation of the national aquaculture strategy enabling offshore aquaculture in adjoining Commonwealth waters".

As outlined within the 2022 MOU, Research Trial **"means the conduct of activities for research by way of marine farming operations for a term of three years or less by the farming operator in the Trial Area".**

The Blue Economy CRC have proposed a multi-species aquaculture research trial in the Bass Strait Blue Economy Zone (BEZ). The project is a three-year research scale Atlantic salmon (Salmo salar) and yellowtail kingfish (Seriola lalandi) farming operation, testing infrastructure that has been designed and commissioned for offshore aquaculture whilst monitoring social and environmental values.



1.2. Description of the proposed action

1.2.1. Background

The Blue Economy CRC was established in 2019 as an independent not-for-profit company limited by guarantee and is a Cooperative Research Centre under the Australian Government's CRC Program. It brings together 43 industry, government and research partners from nine countries with expertise in aquaculture, marine renewable energy, maritime engineering, environmental assessments and policy and regulation.

The Blue Economy CRC's vision is for a sustainable ocean economy, underpinned by innovative industries and trusted stewardship of the oceans and the services they provide. To date, the multi-disciplinary research, training, education, and advisory programs are primarily focused on supporting the entry of two new, emerging, and transitioning ocean industries: **renewable energy production** and **offshore aquaculture.**

Australia is well placed to deliver a sustainable and enduring ocean sourced food system, having sovereignty and sovereign rights of the third largest Exclusive Economic Zone. Australian Fishing Zone is spread across 9 million square kilometres, making it larger than mainland Australia.

Under the Offshore Constitutional Settlement (OCS), state and Northern Territory governments are generally responsible for managing fisheries within State waters (out to 3 nautical miles from the coast) and the Commonwealth for 3 – 200 nautical miles. Unlike this arrangement for fisheries, aquaculture is regulated by state and Northern Territory governments within state waters and there is currently no regulatory basis for commercial aquaculture operations beyond these state waters.

A variation of these default management responsibilities through the OCS arrangements is allowing **aquaculture research activities** to take place in the Australian Fishing Zone as executed through:

- S72 Arrangement - Aquaculture Research Trial Commonwealth Waters 2022
- MoU Aquaculture Research Trial Commonwealth Waters 2022
- Aquaculture in Commonwealth Waters MoU 2021

Aquaculture in state waters has played an increasingly important role in Australia's food system, presenting as a scalable and versatile protein solution while also supporting regional workforces and communities.

Aquaculture is predicted to play an even more critical role in future food production, but also with emerging opportunities in coastal and marine ecosystem restoration, nature repair, seaweed cultivation, circular economy solutions, biodiversity credits and co-location with other ocean uses, such as offshore wind.

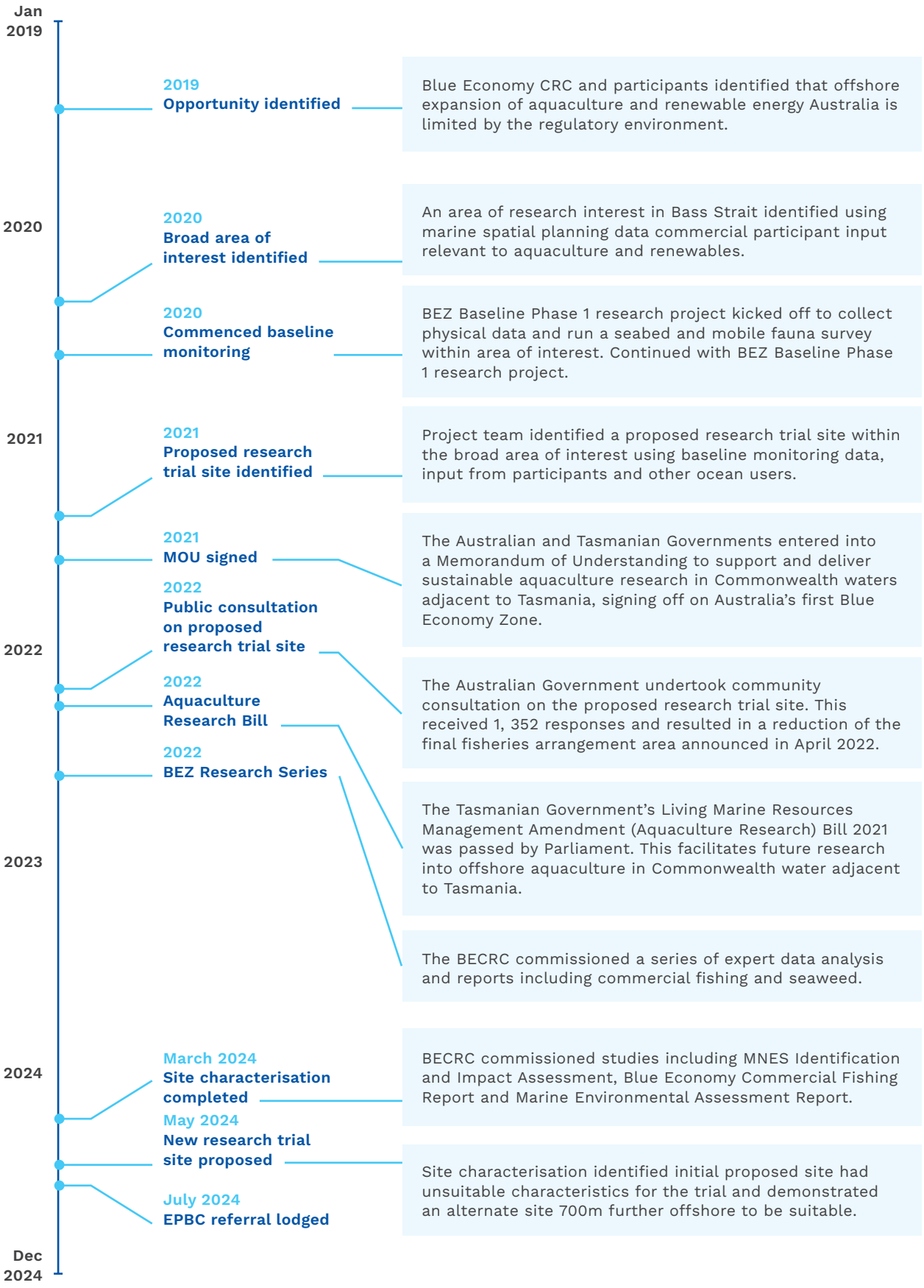
As demand for **farmed seafood and nature positive solutions** grows, the government, community and industry have collectively looked to future growth in further offshore, higher dynamic and open ocean areas. This includes Commonwealth waters where any new planning, regulatory and management system will need to consider from the outset other ocean users, and community values and sentiment, as much as seafood opportunity and market trends.

Furthermore, the **National Aquaculture Strategy (2017)** offered industry and government a blueprint for aquaculture priorities, including "**Actions for Priority 1**: Regulatory framework Task: Amend the Commonwealth Fisheries Management Act 1991 to allow individual jurisdictions to extend their existing aquaculture regulations to cover adjoining Commonwealth waters".

The Blue Economy CRC was encouraged by industry and government to lead the efforts to extend aquaculture into Commonwealth waters through an in-water trial, a multi-disciplinary research program and insights and models for future governance models and arrangements to best support the introduction of this industry into Commonwealth waters. In 2020, the Blue Economy Zone in Bass Strait was identified as an area of interest to deliver Australia's first aquaculture research trial in Commonwealth Waters, leveraging off the Tasmanian industry leadership and a comprehensive regulatory system enacted by the Tasmanian Government. Other potential blue economy zones for alternate species (i.e. barramundi in the Gulf of Carpentaria and mussels and seaweed for the South Coast NSW/Eastern Bass Strait waters) were identified during engagement.

Since 2020, the Blue Economy CRC has worked with the Australian and Tasmanian Governments to design and establish the new governance and regulatory setting to support the permitting and operation of the research trial (Figure 1).

Figure 1. Blue Economy Zone Research Trial timeline



Alongside this work, the Blue Economy CRC has been delivering a **portfolio of research projects** to understand and mitigate the challenges and progress the opportunities for open ocean aquaculture in Australia and neighbouring New Zealand. This research portfolio (see Table 1), including the proposed action, constitutes the first steps to introduce aquaculture into Australian Commonwealth waters.

Table 1. BECRC Offshore Aquaculture Research Profile

Ocean Ambition – Aquaculture 2022	What we Heard Report 2022
4.21.002 Marine Spatial Planning	1.21.005 Code of practice for aquaculture vessels
1.20.006 Developing a robust collar tie	1.21.001 MoorPower Scaled demonstrator
5.20.005 Ethics, Values, Social Licence of the Blue Economy	4.20.004 A novel approach to measuring the depositional footprint of the blue economy
1.21.004 Enabling autonomous technologies for aquaculture in challenging environments	2.21.002 Experimental platform for aquaculture production
4.21.001 Advanced monitoring to maximise fish welfare in offshore aquaculture	1.21.003 Robust salmon feed delivery system
3.20.003 Offshore/high energy aquaculture systems – energy demand analysis	1.20.005 Review on fish pen designs and mooring systems

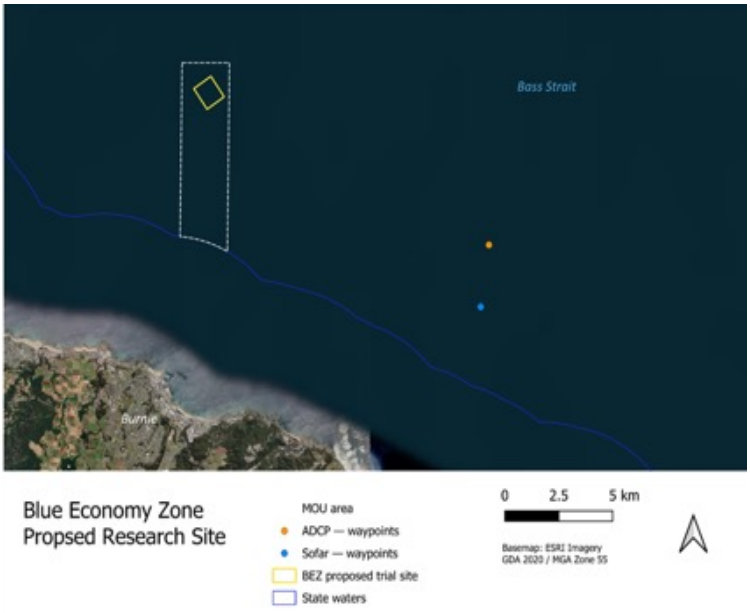
1.2.2. Proposed approach

The Blue Economy CRC is a specialist ocean industry multi-disciplinary research, training, education and advisory not for profit company, accelerating the introduction of new, emerging and transiting industries to the ocean estate.

The proposed action will be led by a **multi-disciplinary team** of governance, ethics, husbandry, operational, IT and engineering experts from the Blue Economy CRC and within the Research Trial operational and funding partners. The team will also work with its participants, the community, and government agencies.

The proposed action is a temporary marine farming research activity to be undertaken over a 3-year period and restricted to a defined Research Trial Site located in Commonwealth waters, 12 km north of Burnie, and serviced from the Port of Burnie. The area is characterised by open ocean, high energy, deep waters, and strong currents and offers a testing ground for the current range of capabilities of infrastructure and operational approaches against best practice frameworks. The trial will identify areas for innovation and test these to address the risks of operating in high-energy waters.

Proposed Blue Economy Zone research site



The proposed action will apply an **evidence-based approach** and the associated research portfolio will focus on testing the capability of existing and evolved sustainable offshore aquaculture systems for finfish, while also exploring opportunities for seaweed and shellfish. The activities will be characterised by advanced innovation, safety, scale and the integration of sustainability outcomes.

The Research Trial **infrastructure configuration and operating profile** will adopt and further evolve the farm systems currently in operation in Australia's most extreme farming location, Storm Bay. It has been informed by 4 years of monitoring of the Tassal West of Wedge site, which will continue to operate as a baseline site for comparison to the Bass Strait site. This approach ensures the Trial has a sound basis for the mooring system, infrastructure and systems that can support a variety of additional infrastructure, equipment, and activities for research trials. The entirety of the infrastructure would be decommissioned and removed from the Research Trial Site at the completion of the trial in accordance with the expectations set in the MOU 2022.

The Research Trial commissioning, operations and decommissioning will be contracted to the **Blue Economy CRC participant**, Tassal. Tassal is experienced in the conduct of aquaculture operations, in particular salmon farming in the waters surrounding Tasmania, and will deliver the operations of the research trial within an existing and endorsed environmental management system and operational standards framework. Tassal has a workforce skilled in vessel operations, fish husbandry and diving operations; and is extremely familiar with the infrastructure to be trialled.

This Research Trial will deliver an **evidence-based blueprint** for future farm systems, drawing on on-water findings, highlighting best practice learnings, environmental monitoring results, community sentiment results and advantages/ disadvantages of potential governance pathways.

The Research Trial will be undertaken in accordance with the arrangements set out in the MOU 2022 and S72 that permits research activities and **does not provide for commercial activities.**

1.2.3. Outputs

The **objectives** of the research activity include:

1. To assess the **operational feasibility and suitability** of open ocean aquaculture in Commonwealth waters.
2. To assess and examine the **environmental conditions** of the research trial site and surrounds and monitor and mitigate impacts on the environment and wildlife.
3. To assess the financial and **economic viability** of sustainable aquaculture in Commonwealth waters, and benefits for local economies.
4. To assess the impacts on other **marine users.**
5. To understand and monitor **community sentiment.**
6. To **develop and assess models** for future governance of aquaculture in Commonwealth waters, including workplace safety frameworks.

The primary **outcomes & outputs** of the trial include:

1. Australia's first **in-water research trial/ demonstration** for aquaculture in Commonwealth Waters
2. **Handbook of open ocean aquaculture**/ Blueprint of future farms, including, but not limited to:
    - **Annual Research Trial outcomes** reporting (as outlined in the MOU information sharing section)
    - A synthesis of the **full Research Trial findings** (as outlined in the MOU information sharing section) against the Research and Operational Plan pillars
    - **Compilation of best practice** learnings for industry extension
    - **Smart Farming** database
    - An offshore/high energy farm **carbon footprint assessment**
    - A **Health and safety** framework
3. **Advisory** on future governance models for aquaculture in Commonwealth waters
4. Associated **BECRC Research portfolio** and reports and communication material

1.2.4. Governance

The Blue Economy CRC will establish a contemporary governance model to oversee the delivery of the research portfolio and operations of the Research Trial (Table 2).

This model will complement the existing Blue Economy CRC governance arrangements and roles, including the role of the Scientific Advisory Committee.

Terms of Reference for each committee/group will be established. An independent project evaluator will undertake assurance and integrity of program logic and models.

Table 2. Proposed governance structure for the proposed action.

Trial Site Research & Operations Working Group	Research & Technical Advisory Group	Community Advisory Group
MEMBERSHIP	**MEMBERSHIP**	**MEMBERSHIP**
Skill based reps from: ▵ Chair (BECRC) ▵ BECRC BEZ Project Team ▵ Tassal BEZ Project Team ▵ Skretting BEZ Project Team ▵ FRDC BEZ Project Team	Skill based reps from: ▵ Chair ▵ Indigenous ▵ Fisheries & aquaculture reps ▵ Technical experts: Engineering, Wildlife, Retail, Safety ▵ Government reps: DAFF, AMSA, AFMA, FRDC, NRET ▵ BECRC Management Team ▵ BECRC Research Leadership Team rep ▵ BECRC Scientific Advisory Committee rep	EOI skills and experience: ▵ Independent Chair ▵ Local Council rep ▵ Indigenous Project Cultural Navigator ▵ Fisheries peak ▵ Recreational peak ▵ Aquaculture peak ▵ ENGO rep ▵ BECRC (secretariat) ▵ BECRC (Griffith University Ethics team)

The **Trial Site Research and Operations Working Group** will oversee the commissioning, operation, evaluation and decommissioning of the Research Trial Site against the approvals and the overarching design and delivery of the Research and Operational Plan.

The **Research and Technical Advisory Group** will advise upon the research portfolio and evaluate the delivery of the Research and Operational Plan. They will also consider the addition of new research projects to the Research and Operational Plan to ensure they are consistent with the research objectives and do not increase potential environmental risks beyond those that have been presented and approved under the relevant state and Commonwealth legislation, including the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the Tasmanian Living Marine Resources Management Act 1995 (LMRMA).

The **Community Advisory Group** (CAG) will advise upon other user and community perspectives on the Research Trial and other ocean estate matters associated with new, emerging and transitioning ocean industries. It will deliver a schedule of deep dives into the research (i.e. site characterisation, wildlife interactions, benthic surveys, finfish welfare, precision farming etc) and include a series of site visits as appropriate.

The Blue Economy CRC participant Griffith University Ethics team will provide advice and ongoing evaluation of the CAG outcomes.

See https://blueeconomycrc.com.au/project/cultural-licence-to-operate-in-the-blue-economy/ for Blue Economy Social Licence project. The CAG will be open via an expression of interest process and will be in place by September 30 2024.

1.2.5. Research Trial Site - temporary infrastructure

A temporary mooring system will be established at the Research Trial Site to support the implementation of the Research Trial. At the completion of the trial period, the mooring system will be decommissioned, with all infrastructure, including mooring blocks, removed from site.

The mooring system consists of a grid with mooring lines (Figure 2). Initially the mooring system will be constructed as a **4-pen grid**. The mooring system may be extended to a maximum 6-pen configuration as research activities require.

The mooring system (Figure 3) is comprised of:

- A series of **concrete mooring blocks and anchors**
- **Floats and buoys** to mark infrastructure and maintain its level in the water column, and
- **Ropes and chain** that form the mooring system structure.

The **aquaculture pens** are then located and secured within the mooring grid (Figure 3). The pens consist of:

- **A collar**, made from HDPE pipe, which floats at the water surface. For the trial, the collar will have a maximum circumference of 168 metres.
- **An aquaculture pen net**, which hangs from the collar and is weighted around its perimeter. For this trial, the side-wall depth will be approximately 10 m with a total depth of approximately 20 m.
- **A wildlife exclusion net**, which is supported above the water by the collar. Wildlife exclusion netting is heavy-weight and high tensile. The net is maintained under tension to reduce the potential for entanglement if birds land on the netting.

Smaller pens (120 m), deeper nets (20 m) and alternative net and wildlife exclusion configurations may be trialled as part of the project.

A feed hopper will be located at the site, secured to the pen as well as on the workboat. A feed distributor is located inside the pen; both air and underwater feeding may be trialled in this project.

Figure 2. Example configuration of aquaculture pens within the mooring grid

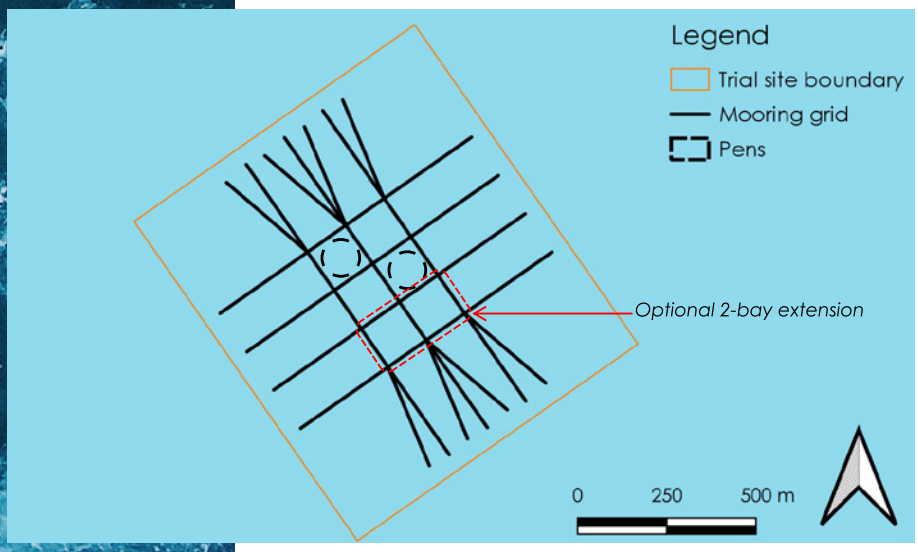
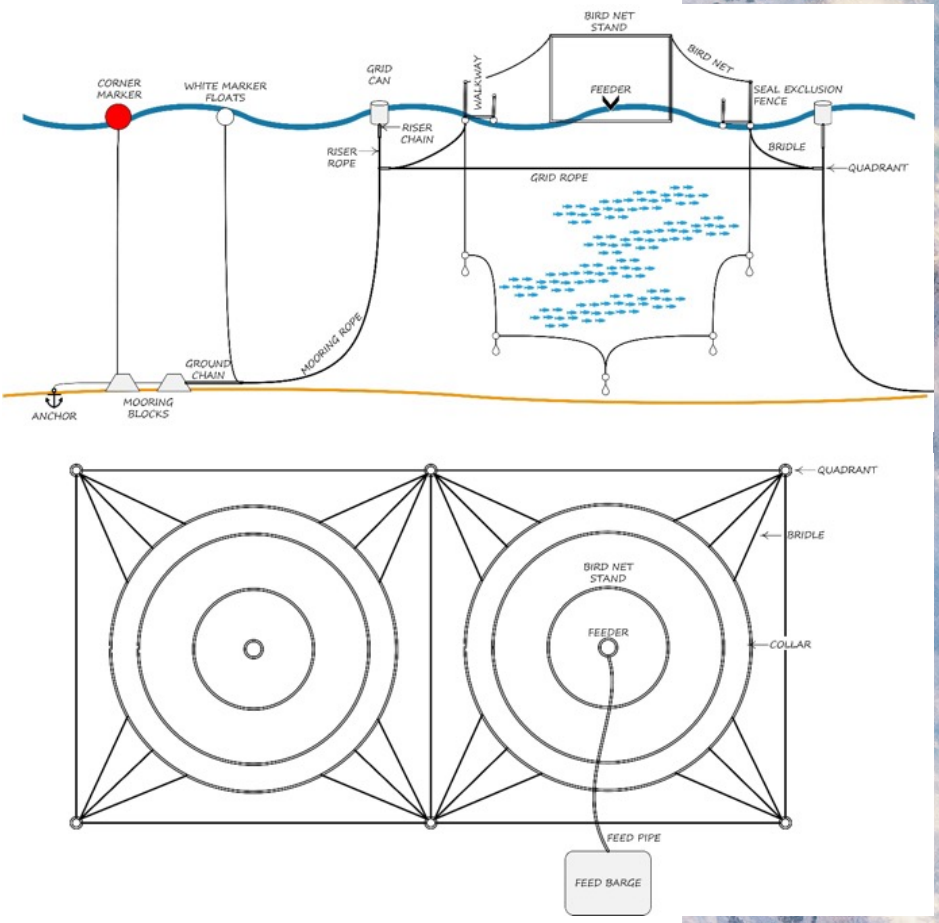


Figure 3. Graphic showing layout of the mooring system.



1.2.5.1. Design

The mooring system and nets will be designed to meet the requirements of Norwegian Standard 9415: 2021 Floating aquaculture farms; Site survey, design, execution and use. The design will be **independently verified** by a suitably qualified third party.

1.2.5.2. Deployment

Prior to installation of the mooring system, corner markers will be temporarily deployed to mark the zone corners with adequate spacing of intermediate markers in line with requirements from ongoing consultation with the Australian Maritime Safety Authority (AMSA), Marine and Safety Tasmania (MaST) and TasPorts.

At the time of installation, a Notice to Mariners will be issued to advise of the potential hazards associated with this activity.

Mooring deployment will require the use of large workboats with cranes to lift and sink mooring blocks and anchors. Constructed pens will then be towed to the site and secured to their moorings.

1.2.6. Research Trial equipment and operational activities

1.2.6.1. Finfish aquaculture research

Research will be conducted to understand the operating environment and viability of finfish aquaculture in offshore areas.

Trial Site commissioning, operations, maintenance, evaluation, and decommissioning will be **undertaken by a workforce skilled** in vessel operations, fish husbandry and diving operations. All activities will be conducted in accordance with permit conditions under the LMRM Act and EPBC Act, and with the Australian Code for the Care and Use of Animals for Scientific Purposes (NHMRC).

In year 1 a single pen of 15, 000 Atlantic salmon smolt and a single pen of 15, 000 juvenile kingfish will be stocked at the Research Trial Site.

Initially, the two pens will be established using conventional farming techniques, drawing from learnings from Storm Bay operations, to understand their suitability and shortcomings for offshore environments and operational paradigms. Novel infrastructure designs, such as submersible pens, may be investigated to understand their benefits in offshore environments.

The trial will also investigate traditional and novel methods of animal husbandry, such as feeding techniques, water circulation, oxygen enrichment, and bathing.

As different methodologies are implemented, they will be reviewed by the **Research and Technical Advisory Group** to ensure alignment with the research objectives and potential environmental risks are adequately addressed.

Typical activities to be undertaken as part of finfish trials are described in Table 3; it should be noted that these activities are likely to evolve as the outcomes of the research trials demonstrate opportunities for improvements to conventional approaches.

Servicing of the proposed Research Trial Site would be undertaken from **Burnie**. The Research Trial Site would be accessed by up to three vessels over the course of a day, including work barge, a dive vessel, and general purpose/works crew vessel. The type of vessels accessing the site is generally determined by the work scheduled on the day. A typical schedule of vessel activities is presented in Table 4.

Table 3. Summary of finfish trial farming activities.

Activity	Description
Stocking	Fingerlings (young fish) will be transported to site using traditional methods employed in the Tasmanian finfish farming industry, i.e. via trucks on a barge or in a specially designed well-boat, which has a large water-holding tank for carrying fish. The fingerlings will then be pumped into the sea pen at the Trial Site. Fingerlings will be sent to sea at between 160 and 180 g bodyweight. Stocking density will be approximately 0.5 kg/m^3.
Feeding	Finfish will be fed specially formulated pellets suitable for the species. Feed will be stored in hoppers on the pens and on the Farmworks boat. Pellets will then be distributed to the pens through pipes, to a feed disperser. Different feeding methods will be trialled, for example spreading pellets across the surface of the water from a centre mounted spinner, or dispersing pellets beneath the surface of the water.
Oxygenation	Dissolved oxygen naturally reduces with increasing water temperature. Aeration/oxygenation methods that may be trialled, should some type of oxygen enrichment be required, include: ▵ Pumping compressed air into the base of sea pens, with the air dissolving into the surrounding water; ▵ Pumping oxygen gas into the base of sea pens; or ▵ Pumping cooler oxygen-rich waters from depth (e.g. >15 m) closer to the surface where fish are more active.
Bathing	Fish are bathed from time to time to manage parasites and other pathogens. Salmon are bathed in freshwater, while kingfish are typically bathed in freshwater with added hydrogen peroxide. Fresh water will be stored in one of the pens, with an impermeable liner place within a net. During bathing, fish will be transferred from their pen, into the liner for bathing, and back to their pen. A well boat may also be used.
Harvesting	At the completion of their grow out stage (at approximately 5.4 kg), finfish will be harvested using a special harvest vessel. Fish are stunned before being bled and placed in the ship's holds in chilled water. The fish are then transported to an onshore facility for processing. Stocking density at harvest is predicted to be approximately 8 kg/m^3.

Table 4. Indicative frequency of vessel movements to the trial site.

Activity	Description	Indicative Frequency
Farm works	Farm works, cleaning, feeding, wildlife management	Daily
Dive boat	Dive inspections, net cleaning	Weekly
Works barge	Bathing support	Fortnightly
Well boat	Bathing and transfer	TBC

1.2.6.2. Research equipment

To support research activities, a variety of equipment would be deployed to support monitoring of the farming activities and surrounding environment.

Typically, this would be relatively small-scale equipment such as remote operated vehicles (ROV) and remote sensing equipment (such as cameras, hydrophones and load cells). Some equipment may be mounted to buoys anchored outside the mooring footprint. Proposed monitoring activities are described in Section 3.

1.2.6.3. Gear marking

On water, the Blue Economy CRC will mark all floating gear and attach geotrackers. The team will continue using **Notice to Mariners** to share the location of floating equipment as part of the existing research and ongoing consultation as well as the site boundaries for geotechnical and geophysical investigations.

Ongoing consultation with Tas Port, MAST and AMSA will continue, including ensuring on-water equipment is appropriately lit and uniquely identified.

2. Location

2.1. Project footprint

The proposed action is located in the Bass Strait within Commonwealth waters (Figure 4). The proposed action also includes related transitory activities between the Port of Burnie and the Trial Site.

The site is Crown Land with a Memorandum of Understanding between the Commonwealth and Tasmanian Government for occupation for the research trial. The MOU sets out that a licence under relevant Tasmanian Government legislation is required for activation of a research trial.

2.2. Site selection

The Blue Economy CRC initially investigated a broad area of Bass Strait, settling on the area subject to the Fisheries Arrangement Area after considering the broadscale biophysical environment and other users and uses of the area. Within this area, the Trial Site was initially proposed approximately ~700m closer to the Tasmanian coastline.

Data for a baseline survey was collected across a broad area between March 2021 and December 2022 (Cossu, *et al.*, 2021). Included in the scope of the baseline survey was seafloor mapping, sediment and high-level benthic habitat characterisation, hydrodynamics characterisation, and biological community characterisation.

This baseline survey provided initial data to plan for a more detailed site characterisation survey and for industry partners to feed into the project planning processes.

In 2023, benthic habitat surveys of the initial trial site identified the presence of dense sponge communities and bedrock. Due to the sensitive nature of this habitat type and the unsuitable seabed geology, the original potential trial site was deemed unsuitable, and investigations were abandoned at this site.

The Marine Environmental Assessment of a Trial Site for a Proposed Blue Economy Zone provides the outcomes of the site investigations.

A subsequent survey in 2024 of the new proposed Trial Site, involving bathymetry, benthic habitat mapping, sediment composition and ecological community characterisation has determined the Trial Site presented in this referral as suitable for the proposed BEZ Trial Site. Full details are in the Marine Solutions report – Marine Environmental Assessment of a Trial Site for a Proposed Blue Economy Zone 2024.

For operational reasons, the proposed research trial site was also rotated to better align mooring systems and activities with prevailing wave and wind directions.

Figure 4. Example of high-biodiversity benthos in the original potential trial site.

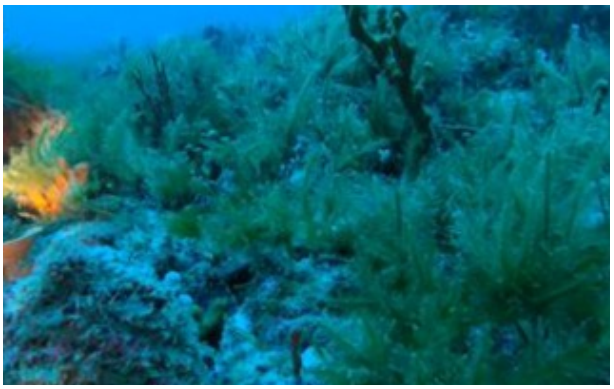


Figure 5. Example of dominant, low-biodiversity benthos in the preferred trial site.

Figure 6. The locations of the original potential trial site and proposed Trial Site.

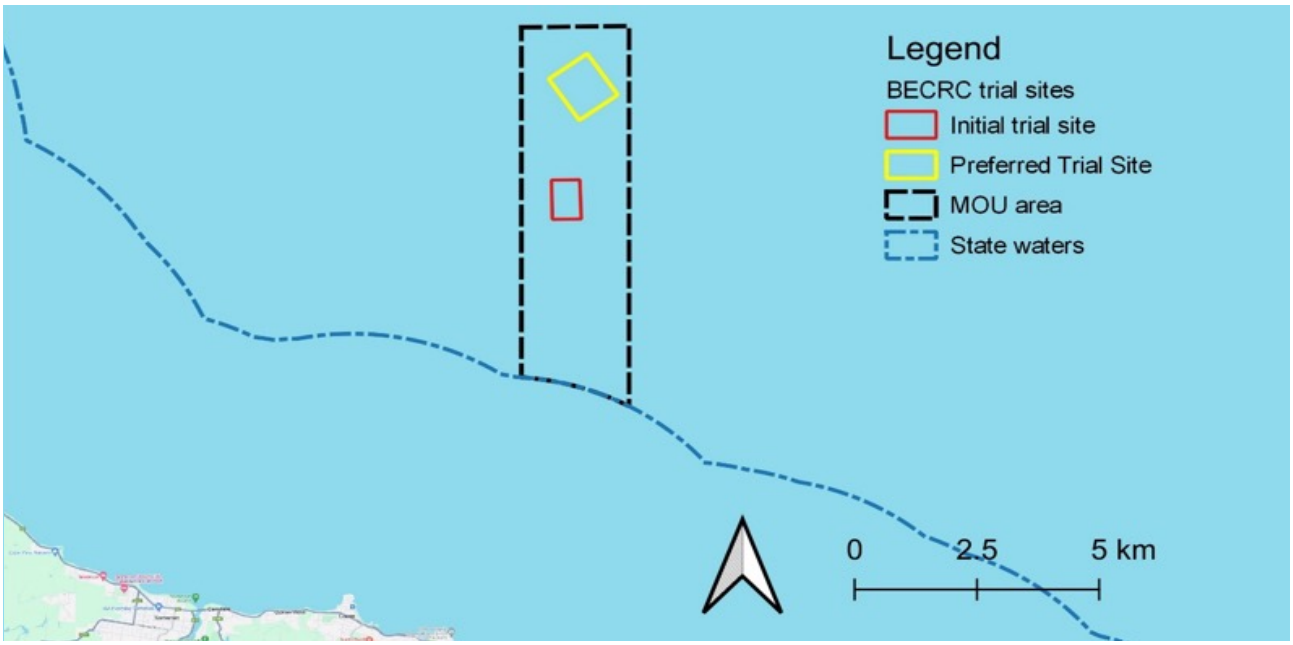


Table 5. Proposed trial site dimensions.

	Surface			**Mooring**			**Lease** with 50m buffer		
	Length	Width	Hectares	Length	Width	Hectares	Length	Width	Hectares
4 Cage Grid	262	262	7	860	860	74	960	960	92
6 Cage Grid	393	262	10	991	860	85	1091	960	105

2.3. Further site-related research

Further to the traditional studies to support site selection such as the Marine Solutions report – Marine Environmental Assessment of a Trial Site for a Proposed Blue Economy Zone 2024 & BMT MNES Identification and Impact Assessment.

The Blue Economy CRC commissioned a series of technical and expert reports and activities to guide entering an already busy ocean estate, as well as how to optimise the Research Trial given the site characteristics and suitability for other aquaculture species.

These include:

- Commercial species.
- Seaweed suitability.

3. Monitoring

3.1. Compliance monitoring

A draft Environmental Monitoring Plan has been developed to capture any environmental impacts of the proposed Research Trial activities (see 2024_06 Proposal - BECRC Regulated Monitoring Program, Marine Solutions 2024).

The objectives of the monitoring program are:

- To adequately assess and monitor the local environment and quality and respond to any environmental changes during the proposed Research Trial.
- To provide a program that is scalable (for future expansions, reductions or removal of the proposed infrastructure/activities in the zone, changes in conditions).

The environmental monitoring plan includes:

- Baseline conditions (pre-trial and ongoing reference site monitoring).
- Monitoring for the duration of the Trial.
- A framework for adjusting the scale of the monitoring program in response to observed conditions.
- Decommissioning.

The draft **Environmental Monitoring Plan** outlines the expected requirements under regulatory bodies and will be updated post receipt of licence conditions.

3.2. Research monitoring

In addition to the compliance monitoring requirements, Blue Economy CRC considers that a range of additional monitoring programs would be of value to the research project, generating information to inform future proponents and regulators.

Being the first of its kind in Australia, the Research Trial presents an excellent opportunity to investigate how environmental, social and commercial values may be influenced by the proposed infrastructure and activities in this high energy environment and more broadly, provide insights into potential impacts under future proposals for commercial-scale operations.

Ensuring monitoring plans accurately capture potential impacts in preliminary scoping projects such as the proposed Research Trial will likely be important in setting a precedent for future research/trials, and ultimately ensuring the collective footprint of offshore industry on the environmental and beyond is minimised.

The Blue Economy CRC is considering the scope of proposed additional monitoring for the Research Trial in the context of broader environmental values.

4. Engagement & Consultation

4.1. Consultation on the trial opportunity (2020 – 2024)

The Blue Economy CRC was encouraged by industry and government to lead the efforts to extend aquaculture into Commonwealth waters through an in-water trial, a multi-disciplinary research program and through providing insights and models for future governance and arrangements to support the introduction of aquaculture into the Commonwealth marine estate.

> **In 2020, the Blue Economy Zone in Bass Strait was identified as an area of interest to deliver Australia's first aquaculture research trial in Commonwealth Waters, leveraging off the Tasmanian industry leadership and the Tasmanian Government's existing regulatory system for aquaculture in State waters.**

Since 2020, the Blue Economy CRC has worked with the Australian and Tasmanian Governments to design and establish the new governance and regulatory setting to support the permitting and operation of the Research Trial.

The Blue Economy CRC team have also been offering **presentations, meetings and briefings** throughout this period to offer continuous updates on the Research Trial's intent and as the Trial site profile was being designed.

4.2. Consultation on aquaculture trial proposal (2022)

The Tasmanian Government led consultation on the Living Marine Resources Management Amendment (Aquaculture Research) Act 2022 which was passed in March 2022, creating the legislative framework to enable aquaculture research in Commonwealth waters adjoining Tasmanian state waters.

The public consultation period ran from 20 October to 3 November 2021. Targeted stakeholder consultation was also undertaken by NRET. The Minister for Primary Industries and Water issued a media release on 20 October 2021 to draw attention to the consultation, and public notices were placed in the three Tasmanian newspapers, the Mercury, the Examiner and the Advocate, on 23 October 2021. The consultation was also announced in the news feed on the NRET landing webpage.

Targeted consultation was undertaken with Tasmanian Association for Recreational Fishing (TARFish), Tasmanian Seafood Industry Council (TSIC), Tasmanian Salmonid Growers Association (TSGA), Institute for Marine and Antarctic Science (IMAS), Commonwealth Department of Agriculture, Water and Environment (DAWE), Blue Economy CRC and Marine and Safety Tasmania (MAST).

Fishing bodies certified under the Living Marine Resources Management Act 1995 (LMRMA) were advised of the consultation, including Tasmanian Abalone Council, Tasmanian Rock Lobster Fishermen's Association, Tasmanian Commercial Divers Association and Oysters Tasmania, as well as the Chairs of Fisheries Advisory Committees established under the LMRMA.

Material relating to the consultation was available on a dedicated NRET webpage. Submissions could be made by following the 'Have Your Say' link to an online form. There was a possibility of submitting confidential comments and attaching a file as part of a submission. It was stated that the Department would treat submissions as public information and would be published on the same webpage, except for confidential comments and attachments that were marked as such by the author.

In total, seven submissions were received, one of which included confidential comments. Seven stakeholder briefings were conducted. Further details can be found here: https://nre.tas.gov.au/aquaculture/industry-strategy-and-innovation/aquaculture-in-adjacent-commonwealth-waters.

The Australian Government held formal **public consultation** on the proposal for an aquaculture trial in Commonwealth waters in Bass Strait in February 2022.

The (then) Department of Agriculture, Water and the Environment assessed 1,352 submissions on the proposed trial area. The assessment did not identify any evidence-based issues specific to the area that would preclude the trial from proceeding. Table 6 summarises the consultation feedback and response.

Table 6. Commonwealth Government consultation feedback and response.

Key Theme	Feedback	Response
Support for research trial and trial area	▵ The trial provides an opportunity to support growth in the aquaculture industry. ▵ Offshore aquaculture will contribute to Tasmanian and local economic growth and employment. ▵ The trial and research will provide information for future decisions on aquaculture in Commonwealth waters and support a sustainable future for the industry ▵ Offshore aquaculture will reduce fishing pressure on wild fish stocks and increase food security ▵ The distance from shore will reduce noise and visual impacts to coastal communities	▵ The final report of the research trial will support an assessment of the economic viability of sustainable aquaculture in Commonwealth waters and potential benefits for the Tasmanian and local economies. ▵ The Australian Government is committed to ensuring that future decisions on aquaculture in Commonwealth waters are informed by data, information and science. The outcomes from this research trial will contribute to that understanding.
Trial area conditions are unsuitable	▵ Bass Strait is shallow and waters do not flush, which will result in build up of pollutants. ▵ Pollution from historical land based industry in the area is present at the trial site. ▵ The water temperature in the trial area is too high for aquaculture.	▵ The research trial will include an assessment of the environmental conditions of the area and its suitability for aquaculture.

Key Theme	Feedback	Response
Environmental and pollution	▵ Aquaculture will negatively impact the ecology, biodiversity and environment of the local area. ▵ Feed, waste and marine debris from the aquaculture operations will introduce pest and disease and pollute the area. ▵ Aquaculture operations should be land-based.	▵ The Australian Government acknowledges the concerns raised regarding potential impacts to the environment as a result of the trial. ▵ Ensuring that environmental impacts are monitored and mitigated effectively will be a core consideration of the proposal for the research trial and a key part of the monitoring and evaluation plan for the trial. ▵ The research trial proponent, the Blue Economy Cooperative Research Centre will undertake stakeholder engagement on the proposal for the trial including consideration of these issues. ▵ Research proposals approved for the trial will be required to comply with all relevant Tasmanian and Commonwealth legislation, including the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.
Wildlife, biodiversity and animal welfare	▵ Whale migratory routes may be impacted. ▵ Potential for animal welfare and habitat impacts on the local penguin and dolphin populations, as well as seals and farmed fish, including fish mortality. ▵ Attraction of predators and potential related negative impacts on local fish, and biodiversity.	▵ The Australian Government acknowledges the concerns raised regarding potential impacts to wildlife and animal welfare as a result of the trial. ▵ Ensuring that wildlife impacts are monitored and mitigated effectively will be a core consideration of the proposal for the research trial.
Impacts to other marine users	▵ Potential for financial and operational impacts on fishing operators due to reduced area for fishing operations and potential to limit areas with prospective fishing value. ▵ Recreational activities (fishing, boating, diving, swimming), shipping and boating traffic could be impacted. ▵ The trial area is too close to shore/populated towns.	▵ The size of the area of interest for the trial has been reduced to further minimise impact on other marine resource users, including wild catch fishers, recreational users, shipping and boating traffic. ▵ The site was selected to ensure that it would be a significant distance from shore (approx. 11 km/6 nautical miles) to minimise any impacts on recreational activities and impacts of the infrastructure to nearby coastal populations. ▵ The trial will allow further assessment of any impacts on other marine users.

Key Theme	Feedback	Response
Lack of information and trust in Government and aquaculture industry	▵ Lack of information on the proposal and parameters of the trial. ▵ Lack of transparency and opportunity for informed debate and stakeholder engagement. ▵ The research trial will lead to industrialisation of the whole of Bass Strait. ▵ Access to state and/or Commonwealth waters should not be granted to private enterprise for commercial operations. ▵ Existing aquaculture regulators and regulations are not sufficient.	▵ The Australian Government is taking a measured and considered approach to assessing whether to allow for aquaculture to operate in Commonwealth waters. ▵ The 2017 National Aquaculture Strategy, which identified establishing aquaculture in Commonwealth waters as a key action, is based on strong science and consistent stakeholder engagement. ▵ Consultation on the proposed trial area is the most recent step to engage stakeholders on the trial of aquaculture in Commonwealth waters. ▵ The research trial is limited to a three-year period and will provide data and information to inform the Australian Government's consideration of future decisions regarding aquaculture in Commonwealth waters. ▵ Further stakeholder engagement will occur on the research trial proposal and prior to Australian Government decisions on the future approach for aquaculture in Commonwealth waters.

The Tasmanian Government also led consultation during the development of **the Tasmanian Salmon Industry Plan** from 23 November 2022 to 20 January 2023, where members of the public were invited to have their say on the Draft Tasmanian Salmon Industry Plan. Web-based submissions were invited during this period and community briefing sessions were held around the state. Ten community briefing sessions were held throughout the State, with approximately 390 people attending. The plan included reference to the BECRC led Bass Strait research trial. Further details can be found here: https://nre.tas.gov.au/aquaculture/industry-strategy-and-innovation/tasmanian-salmon-industry-plan.

4.3. Consultation on the proposed action (current and forward looking)

The Blue Economy CRC has undertaken continuous participation in the conversation as the research governance, regulatory and policy framework has been developed by the governments – attending community, industry, government and research meetings and events.

This shifts to the BECRC leading a **targeted consultation on the proposed research activity and new trial site** to complement and support the formal approval processes of the proposed Research Trial. This will be followed by an **ongoing engagement program** that will be ongoing throughout the three-year period of the trial to allow continuous access to the research team and findings.

The formal consultation program is focused on consulting with communities and stakeholders on the research and findings to date, the Research Trial site and activity profile and also gain feedback on "what matters" regarding sustainability attributes and marine values.

During the **consultation period** and aligned with the Tasmanian Government Offshore Policy, the Blue Economy CRC will consult directly with:

- Local government
- Tasmanian Environment Protection Authority (EPA)
- Marine and Safety Tasmania (MAST)
- TasPorts
- Tasmanian Seafood Industries Council (TSIC)
- Salmon Tasmania
- Tasmanian Association for Recreational Fishing (TARFish)
- Biosecurity Tasmania (NRE Tas)
- NRE Tas
- Regional Natural Resource Management (NRM))
- Department of Agriculture, Fisheries and Forestry (DAFF)
- Australian Fisheries Management Authority (AFMA), including any peak body identified by AFMA
- Australian Maritime Safety Authority (AMSA)

The Blue Economy CRC will also invite local boating clubs, local land and water-based recreational group/clubs and local tourism operators to meet.

Coffee drop-ins and community sessions will also be held on the NW coast (minimum three community sessions). At these community sessions, the Blue Economy CRC project team will present an overview on the Research Trial, including details about the site characteristics gained from existing research, as well as the trial profile and scope. These sessions will be broken into research team led conversations in smaller groups. The sessions will ensure the participants have direct access to the project team including technical, environmental and marine specialists.

This face-to-face engagement is being supported by a **comprehensive online approach**, making all project materials available at the Blue Economy CRC website so people who were unable to make a session could participate.

Stakeholders will also be invited to participate in **online industry and community sessions and webinars.** These sessions will target groups representing other ocean industries, coastal tourism and local business, local government, environment, and community.

A targeted **"What we heard" Consultation Report** and ongoing Engagement Series will be developed that summarises the activities undertaken, feedback collected, and issues received is currently being developed. The 'What we heard Report' will be provided to DCCEEW and NRET prior to the commissioning of the trial site.

5. Next Steps

The Blue Economy CRC has undertaken detailed environmental assessments and is seeking approvals under the Environment Protection and Biodiversity Conservation Act 1999 and a research permit under the Living Marine Resources Management Amendment (Aquaculture Research) Act 2022.

Consultation on the research trial will occur at multiple stages of the regulatory process and continue throughout the life of the research trial if approved.

We will engage and involve both existing marine users and the community wherever possible and to consult and engage with First Nations groups.

Our Research and Operational Plan will detail how we will coexist with existing users, such as shipping and fisheries.

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Cooperative Research Centres Program