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Tasmanian Government

Standing Committee on Agriculture and Water Resources

PO Box 6021

Parliament House

Canberra ACT 2600

27 May 2021

Submission: Inquiry into the Australian aquaculture sector

The Tasmanian Department of Primary Industries, Parks, Water and Environment is pleased to provide a submission to this inquiry. The Department's submission provides an overview of the status of the Tasmanian aquaculture sector and related matters, including where appropriate, reference to historic policy settings that have contributed to the current industry status.

I would be pleased to provide any further information to support the considerations of the Committee.

Yours sincerely,

Tim Baker

Secretary

Encl.

Tasmanian Department of Primary Industries, Parks, Water and Environment

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Introduction

Valued in 2018/19 at $833 million, in gross beach value, the aquaculture sector forms a significant and growing proportion of the value of the $1.017 billion Tasmanian seafood industry.

Marine farming has expanded rapidly in Tasmania since the 1990s and is now one of the State's major industries. Species farmed in Tasmania include salmonids, oysters, mussels, abalone, seaweeds and to a small extent, seahorses.

Secondary industries such as fabrication, service providers, feed producers and tourism have also grown around marine farming, creating additional economic and employment benefits to the State. The Tasmanian aquaculture industry has also stimulated globally significant research and development activity, particularly in the Institute for Marine and Antarctic Studies at the University of Tasmania, and more recently via the Blue Economy Cooperative Research Centre.

The Department of Primary Industries, Parks, Water and Environment is the lead agency for regulating the development of the aquaculture (marine farming) sector in Tasmania. This is supported by the Environment Protection Authority (EPA) for environmental regulation, Inland Fisheries Service (IFS) for regulation of freshwater hatcheries, and the Department of State Growth for market and trade development.

The table below shows the level of production for each marine farming sector.

	Unit	2019-20 Actual[1]
Salmonid	Tonnes	65 677
Mussels	Tonnes	572
Abalone	Tonnes	264
Pacific Oysters	'000 Dozen	2 776

Source: DPIPWE Annual Report 2020
Note:
1. At the time of publishing the 2019-20 figures are estimates only, as end-of-financial-year figures were still being be finalised.

The latest Tasmanian Agrifood Scorecard for 2018/19 valued salmonids at $796 million – which remained the highest value single food product of the Tasmanian primary industries sector, worth more than double the value of dairy production. Oysters were valued at $28M in the same year. The majority

of salmonids and oysters were sold into interstate markets with approximately $100 million worth of salmonids exported, mainly to China.

The Tasmanian Trade Strategy 2019-2025, and associated Annual Action Plans identify a range of initiatives to support the key trade priorities of the seafood and salmon sectors. The *Tasmanian Trade Strategy Annual Action Plan 2021* includes initiatives to diversify and expand markets, increase brand awareness of Tasmanian seafood including aquaculture products, support for freight and logistics and building resilience and capabilities for the broader Tasmanian seafood industry. Further information is available via: https://www.stategrowth.tas.gov.au/business/trade/tasmanian_trade_strategy

Tasmania has been working towards achieving the outcomes desired in the 2017 National Aquaculture Strategy. This includes examining the required potential jurisdictional processes and regulatory framework needed to provide for finfish marine farming to operate in Commonwealth waters.

State Waters

The planning provisions of the *Marine Farming Planning Act 1995* (MFPA) enable marine farming development plans to be prepared. A marine farming development plan (MFDP) establishes zones where marine farming leases may be granted.

A MFDP also specifies the maximum leasable area for each zone, the type of fish (finfish, shellfish, seaweed or other species) that may be farmed in the zone and operational constraints on marine farming activities in the form of Management Controls.

The MFPA empowers the Minister to grant leases within marine farming zones. Leases are subject to conditions determined by the Minister.

A marine farming lessee (operator) must also be licensed under the *Living Marine Resources Management Act 1995* (LMRMA). A marine farming licence includes conditions relating to operational matters.

In the case of finfish farming, a holder of a marine farming licence also requires a separate environmental licence in order to conduct marine farming. Environmental licences are administered by the EPA.

As of April 2020, there are fourteen Marine Farming Development Plan areas in Tasmania, eight of which involve fin fish farming and there are 47 licensed fin fish leases (some of these are also licenced for other species). There are an additional 107 licenced marine farming leases, the majority being for oysters with some being for other shellfish and seaweed. There are 13 land-based marine aquaculture licences for production of abalone, ornamental species and hatcheries that support in-sea production of shellfish and seaweed. Existing marine farming development plans make available more area for in sea farming than is currently used by the industry. This capacity is unutilised due to a range of factors including commercial considerations.

Inland Waters

Aquaculture conducted in inland waters is managed by the IFS under *the Inland Fisheries Act 1995*. This includes the operation and biosecurity of freshwater hatcheries www.ifs.tas.gov.au. There are 20 freshwater hatcheries that produce salmonids, most of which are part of the supply chain for marine production. Anyone operating a freshwater fin fish farm with a standing biomass over two tonnes (except eels) must hold an environmental licence administered by the EPA.

Permits

There are a variety of marine-related activities, including the development of marine farming that may be authorised under the provisions of the LMRMA.

Fin Fish (Salmon Aquaculture)

Nature and status

Salmonids (Atlantic salmon – *Salmo salar, Rainbow Trout - Oncorhynchus mykiss*)

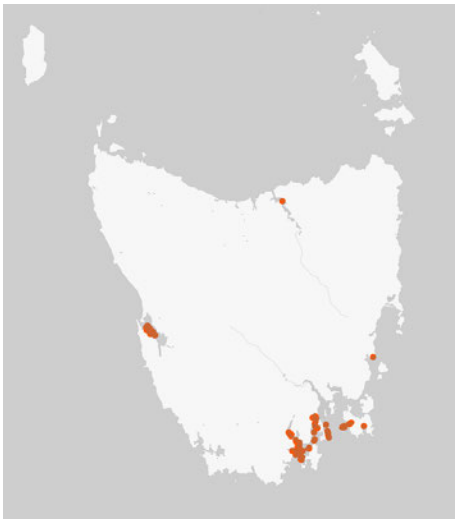

Figure 1 Tasmanian Finfish Marine Farms

Salmonid farming (Atlantic salmon and rainbow trout) in Tasmania is currently predominantly undertaken by three, vertically integrated companies that grow fish from eggs to harvest. Tasmanian salmonid marine farms occupy a total area of 3,222 hectares which is approximately 0.14% of Tasmanian State Waters. There are currently 20 licenced salmonid freshwater fish farms (hatcheries) operating in inland waters and 47 licenced salmonid marine farming leases in Tasmanian State waters. There are five major salmonid processing facilities in Tasmania and a rendering facility that adds value to industry by-products.

The freshwater hatcheries are generally used to grow the fish from fertilised egg up to 250g, at which stage they are transferred to sea. Some facilities are now also producing 'super' smolt; ie larger fish before they are put to sea. The original industry hatcheries built in the 1970's relied on flow-through technology in earthen ponds but are now being replaced with technologically sophisticated recirculating aquaculture systems (RAS) that have the benefit of completely controlled growing conditions and reduced water use.

The major marine growing areas are in sheltered waters, including the D'Entrecasteaux Channel, Macquarie Harbour, Okehampton Bay, Tasman Peninsula and the Tamar River, however production is expanding into high-energy exposed waters such as Storm Bay. The salmonid marine farms are used to grow the fish from smolt to harvest size and are serviced jointly by on-water and remote crews. Harvested fish are processed at facilities both in Tasmania and on the mainland prior to reaching their market destination.

Salmonid production has maintained steady growth in Tasmania averaging 10.8% p.a since the late

1990's (ABARES, 2018[1]). In the 2017 the Tasmanian Government released the Sustainable Industry Growth Plan for the Salmon Industry (Salmon Plan), which set out the policy framework for Government to support the industry to achieve a revised target of becoming a $2 billion a year industry by 2030.

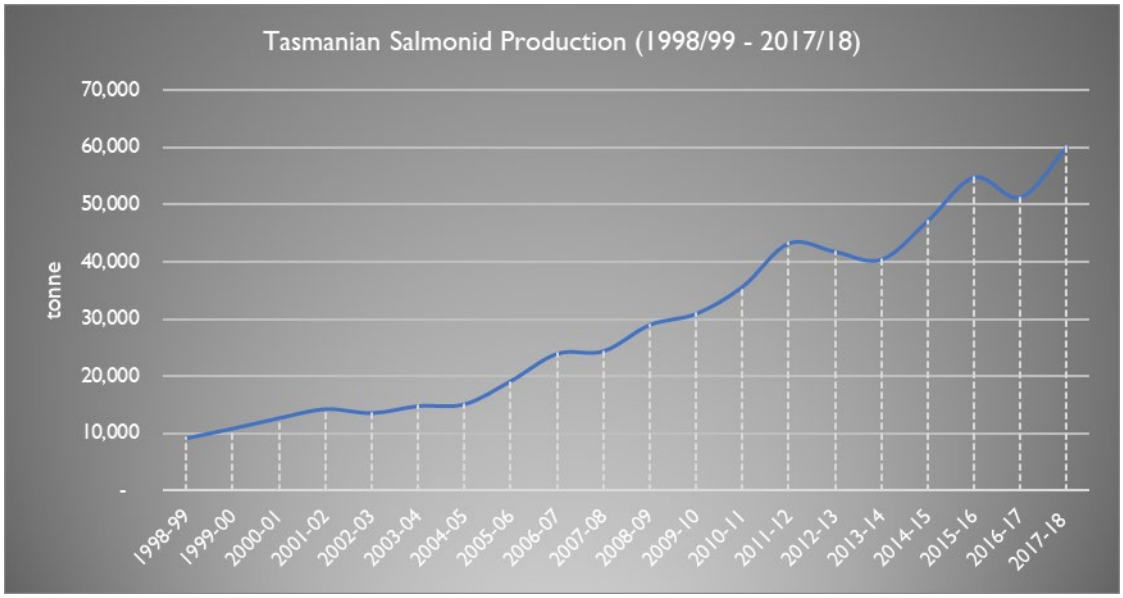

Figure 2 Tasmanian Salmonid Production Source: ABARES 2018 (more recent production information is available on the DPIPWE Salmon Portal – see below)

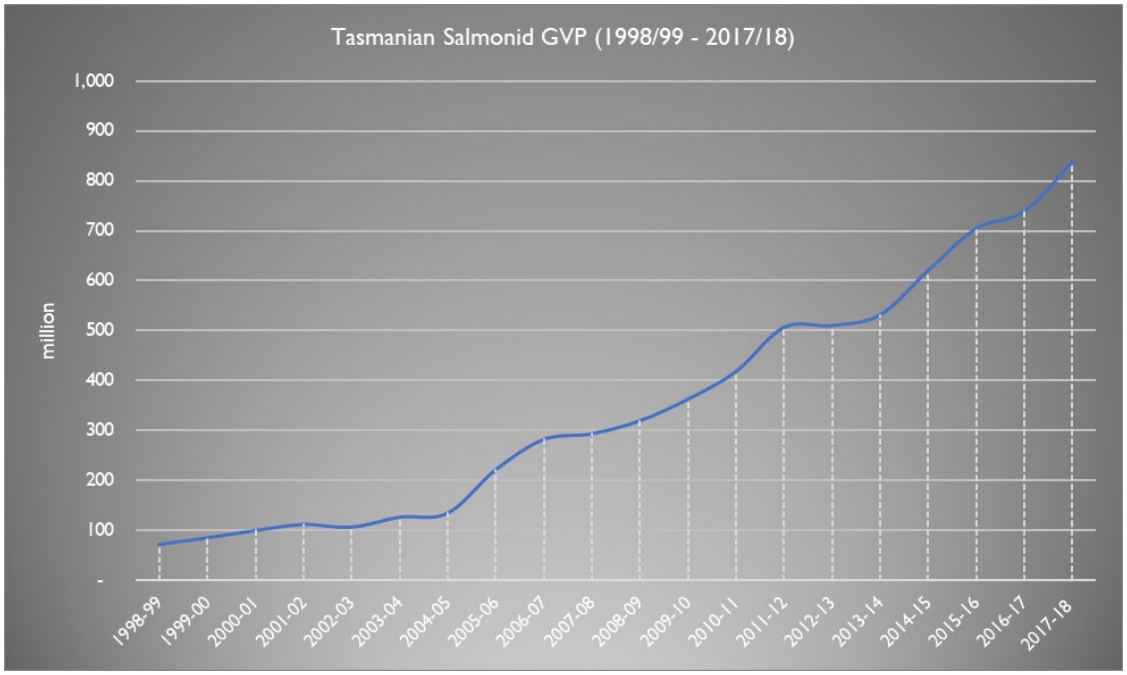

Figure 3 Tasmanian Salmonid GVP Source: ABARES 2018

Under the policy framework set by the Salmon Plan, considerable progress has been made by Government and the industry participants, to achieve continuous improvement in the performance of the industry. This includes addressing issues that can be contested and of concern to the wider

[1] ABARES 2018, Fisheries and Aquaculture Statistics 2018. https://www.agriculture.gov.au/abares/research-topics/fisheries/fisheries-and-aquaculture-statistics/production-2018#tasmaniagvp-rises-by-13-in-201718 Accessed on 8 April 2021

Tasmanian community; including data availability and transparency, reduction of marine debris, environmental regulation and biosecurity.

The Government undertook a one year review of the Salmon Plan in 2019 and a second review is currently in progress.

Data availability

In 2019, DPIPWE published a website – the Salmon Portal - for salmon farming in Tasmania providing an array of information about the regulation and performance of the salmon industry: https://salmonfarming.dpipwe.tas.gov.au/

The portal provides a range of environmental, production and other metrics sourced from across DPIPWE and the EPA. It should be noted that some information is commercial in confidence and cannot be released until the stock market has been advised of company results.

The portal is updated on a quarterly basis. Further information may be added to over time as industry reporting requirements change or when new datasets can be made available.

All Environmental Licences issued under the *Environmental Management and Pollution Control Act 1994* (EMPCA) and Marine Farming licences issued under the LMRMA that have been issued to companies are now publicly available on the LISTMap (Aquaculture)

Marine debris

The DPIPWE works closely with Marine and Safety Tasmania (MAST) to implement the objective of a zero-tolerance approach to marine farming equipment being lost from marine farming leases. This includes best practice tracking technology for marine farming equipment; and developing simple, practicable ways to identify debris from marine farms.

The 'zero tolerance' approach has been in effect since July 2018. Each reported or identified instance of marine farming equipment found to be outside a marine farming lease area is investigated and responded to, with the priority being safety and retrieval.

Authorised Officers within DPIPWE and MAST have the authority to issue infringement notices to lease holders for such offences. Infringement notices are reported on the salmon portal.

There are currently two MAST authorised officers and four DPIPWE authorised officers who monitor and respond to breaches in relation to marine debris.

The Tasmanian Salmonid Growers Association (TSGA) released a Debris Tracker App and Hotline: (1300 332 747) to facilitate the public reporting of debris. All reports submitted via both the industry Debris Tracker App and the industry Hotline are sent to the salmon company closest to the debris for removal, DPIPWE's Marine Farming Branch, and Marine and Safety Tasmania (MAST) for appropriate action.

The debris tracker app complements the hotlines provided by state government for reporting marine debris and hazards to navigation via Marine and Safety Tasmania and DPIPWE Marine Farming.

Marine farming operators are required under marine farming development plan Management Controls and licence conditions to both report any loss of equipment and make all reasonable efforts to recover marine farming debris as soon as is reasonably possible. This includes:

- ensuring that all floating marine farming equipment is identifiable or uniquely marked as the property of the licence holder.
- ensuring that all floating marine farming equipment used under a licence is recorded in the approved marine farming equipment register.
- reporting any loss of equipment to MAST, which then issues a 'Notice to Mariners' regarding potential navigational issues.

The finfish industry is taking proactive measures to prevent marine debris at the source through staff education and specific management protocols that address daily operations, including developing a voluntary marine debris Code of Practice that has recently been drafted by the Tasmanian Salmonid Growers Association (TSGA).

The finfish industry has developed gear marking and colour coding of equipment and registers for identification of individual company's gear and this information has been supplied to DPIPWE for collation into a single marine farming equipment register. Compliance staff in DPIPWE conduct audits of finfish marine farming leases to ensure that all relevant marine farming equipment has been included in these registers.

In addition, the finfish industry is developing debris-management partnerships with the community, environment groups and social enterprises. This includes regular shoreline clean-ups by the industry in finfish growing regions across Tasmania.

Marine debris clean-up and reporting data is collected by the finfish industry and reported to DPIPWE on a quarterly basis. This information is made available to the public through the salmon portal.

Environmental regulation

Historically environmental management and compliance of the marine finfish industry was regulated by DPIPWE under the LMRMA and the MFPA.

In June 2016, the Tasmanian Government announced changes to the regulatory framework surrounding finfish farming activities, reflecting the significant growth in the industry. The EPA became responsible for the environmental regulation of finfish marine farms, and so that this could commence immediately, the EPA Director was provided relevant delegations under the MFPA and LMRMA.

The functions of industry planning and development remained under the jurisdiction of the Minister for Primary Industries and Water.

The *Finfish Farming Environmental Regulation Act 2017* (Finfish Act) established the legal structure empowering the Director, EPA with an independent statutory role for the environmental regulation of the State's finfish farming industry, including marine and freshwater farms.

It amended several Acts relating to the management of the finfish farming activities and establishes Tasmania's EMPCA as the primary piece of environmental regulation legislation.

Provisions relevant to the Director, EPA include:

- specific management controls within Marine Farming Development Plans that provide the Director, EPA with powers relating to the management of nitrogen and auditing of finfish

industry data. Management controls also contain other specific environmental controls relating to carrying capacity.

- *Marine Farming Planning Regulations 2016* prescribe a special penalty relating to the exceedance of nitrogen limits (commonly referred to as nitrogen cap) determined by the Director, EPA. The penalty is a fine of $150,000 for each tonne of dissolved nitrogen that exceeds the assigned quantity of dissolved nitrogen.
- the LMRMA requires the Secretary of DPIPWE to notify the Director, EPA of application to grant, renew and transfer of finfish marine farming licences along with the Minister's decision in relation to these applications. The Director, EPA must also be notified of the surrender of a finfish marine farming licence.

EMPCA provides an Environmental Licence (EL) as the new regulatory instrument for both marine and freshwater activities. This means that anyone operating a marine or inland freshwater finfish farm (with a standing biomass over two tonnes) must hold an EL under EMPCA in addition to holding a Fish Farm Licence under the *Inland Fisheries Act 1995*, in the case of an inland freshwater fish farm, or a Marine Farming Licence under the LMRMA, in the case of a finfish marine farm.

EL conditions require the companies to undertake regular visual monitoring of the benthic impacts associated with farming salmon at all marine farming sites in the State. There are a range of controls relating to the management of lease areas and to respond to any significant visual impact at defined compliance points 35 metres away for the lease boundary.

Water quality and benthic condition monitoring associated with salmonid marine farming specifically relates to assessment of benthic condition and water quality in marine farming development plan areas.

These monitoring programs are subject to a consistent management framework applying to operational finfish marine farming lease areas.

Ongoing benthic monitoring is required in all marine farming development plan areas and water quality monitoring is required in the major production areas of the State including in the D'Entrecasteaux Channel and Huon River, Tasman, Okehampton and Storm Bay areas in the southeast and in the Macquarie Harbour on the west coast.

Recent initiatives of the EPA include:

- A draft Review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture and the Tasmanian Salmon Industry Environmental Scorecard were published on the EPA website in February 2020: https://epa.tas.gov.au/regulation/salmon-aquaculture/industry-regulation
- A Tasmanian Salmon Industry Environmental Scorecard can also be viewed at https://salmonfarming.dpipwe.tas.gov.au/Documents/Salmon%20Snapshot.pdf
- To ensure that current and future Tasmanian aquaculture practices remain sustainable, the EPA is developing a new environmental standard aligning with best practice for Tasmania.

Further information on the environmental regulatory framework applying across aquaculture (marine farming) in Tasmania, including fin fish marine farming, is provided in Appendix 1.

Salmonid Biosecurity Program

The commencement of the Tasmanian *Biosecurity Act 2019* provided an opportunity for improving industry engagement and the regulatory framework to particularly address disease introduction and transmission concerns in the salmonid industry. The new Act itself builds on current systems and provides a streamlined and more effective framework to better protect the State's primary industries.

Improved biosecurity planning and best practice is being applied at a whole-of-industry-level through a regulated Biosecurity Program.

DPIPWE is currently developing a Biosecurity Program which would be enacted through regulations established under the Act. The program is based on a number of spatially defined biosecurity zones within which a number of biosecurity standards will apply.

The zone-specific biosecurity standards are proposed to be designed to reduce biosecurity risks between growing regions, year classes, operators, and individual farms, where practicably possible.

Biosecurity standards will protect the industry from the risks posed by the introduction, establishment and spread of aquatic biosecurity risks (pests and disease pathogens) that have an adverse effect on fish health, welfare and productivity, and help to protect the wider environment from those biosecurity risks by:

- Minimising the risk of introduction of biosecurity risks;
- Minimising the risk of spread of biosecurity risks; and
- Minimising the impact of endemic, introduced or new and emerging biosecurity risks.

Public consultation on the draft Tasmanian Salmonid Biosecurity Program is anticipated in mid-2021.

Additional information on biosecurity is provided later in this submission.

Shellfish – Oysters and mussels

Nature and status

Shellfish aquaculture in its current form has been established in Tasmania for over four decades, with a history of producing premium quality produce. Species grown include Pacific oysters, native angasi oysters, blue mussels, abalone and clams. Shellfish culture utilises 2386 hectares of coastal water space for intertidal and subtidal culture as well as a number of licenced land-based operations.

Oysters (Pacific Oysters – Crassotrostrea gigas, Native Oysters – Ostrea angasi)

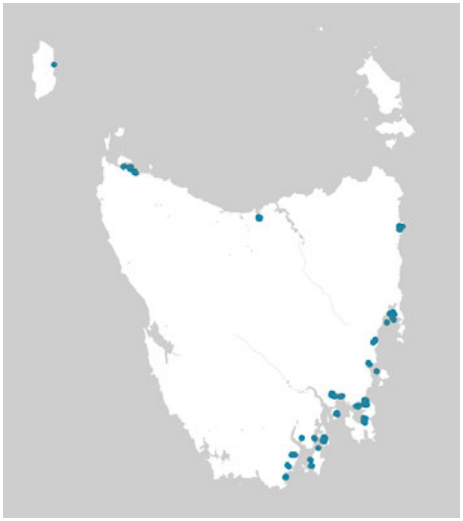

Figure 4 Tasmanian Shellfish Marine Farms

Farming of native oysters commenced in Tasmania in the 1880's, this was followed by the introduction of Pacific oysters in the 1940's. The Tasmanian oyster industry presently produces 3-4 million dozen oysters annually with a gross value of $28 million in 2018/19. There are 104 licenced Tasmanian oysters farms occupying a total area of 1297 hectares, noting that there are significant areas zoned for shellfish culture that are not currently being actively farmed.

The industry produces both seed (2mm up to 50mm) and market sized oysters (>50mm) from its commercial land-based hatcheries and marine based nursery operations located around the State. The industry is supported by a mature selective breeding program through Australian Seafood Industries (ASI) a partnership developed between the Tasmanian and South Australian growers associations. The selective breeding program has focused more recently on Pacific Oyster Mortality Syndrome (POMS) resistance as a primary trait, after the disease reached Tasmanian shores in January 2016 with devastating consequences.

Major marine growing areas are on the north west, east and south east coasts, predominantly in intertidal zones, however some leases utilise subtidal growing technology and are located in deeper waters. Market access in Tasmania is underpinned by the Shellfish Market Access Program (ShellMAP) that monitors harvest waters for the presence of biological or chemical hazards to reduce the risk of food-borne illness.

The Tasmanian Pacific oyster industry has been affected by market closures and increased airfreight costs associated with Covid-19, POMS, harmful algal blooms (biotoxins), water quality issues and loss of market access (product replacement) in recent years. Oysters Tasmania are a partner of the Blue Economy CRC and are exploring possible technologies to allow the industry to meet the challenges recently faced by the industry.

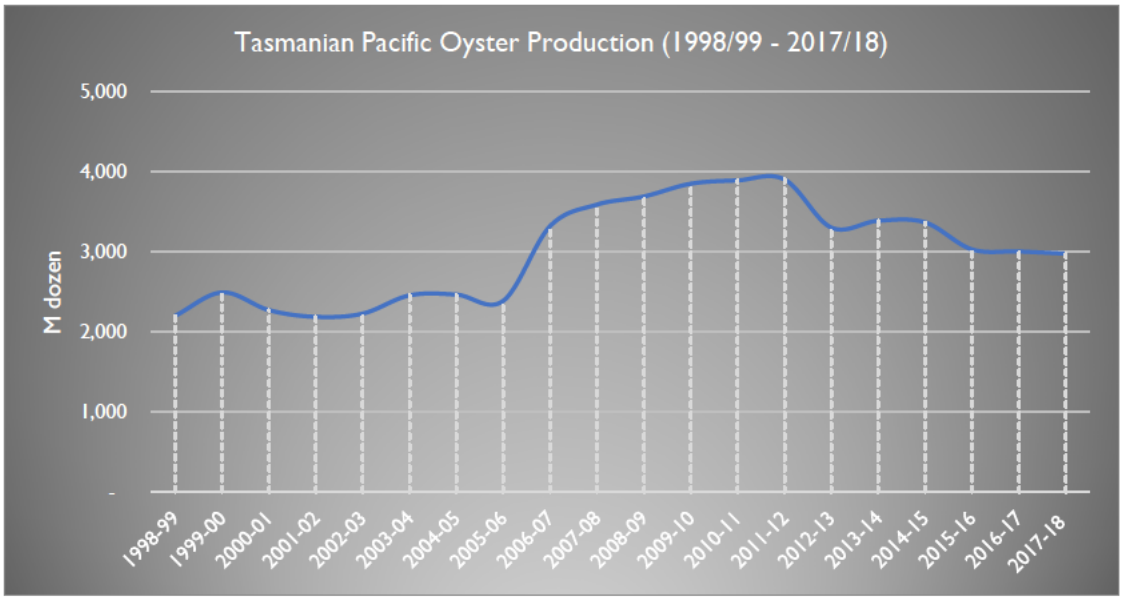

Figure 5 Tasmanian Pacific oyster production, Source: ABARES 2018

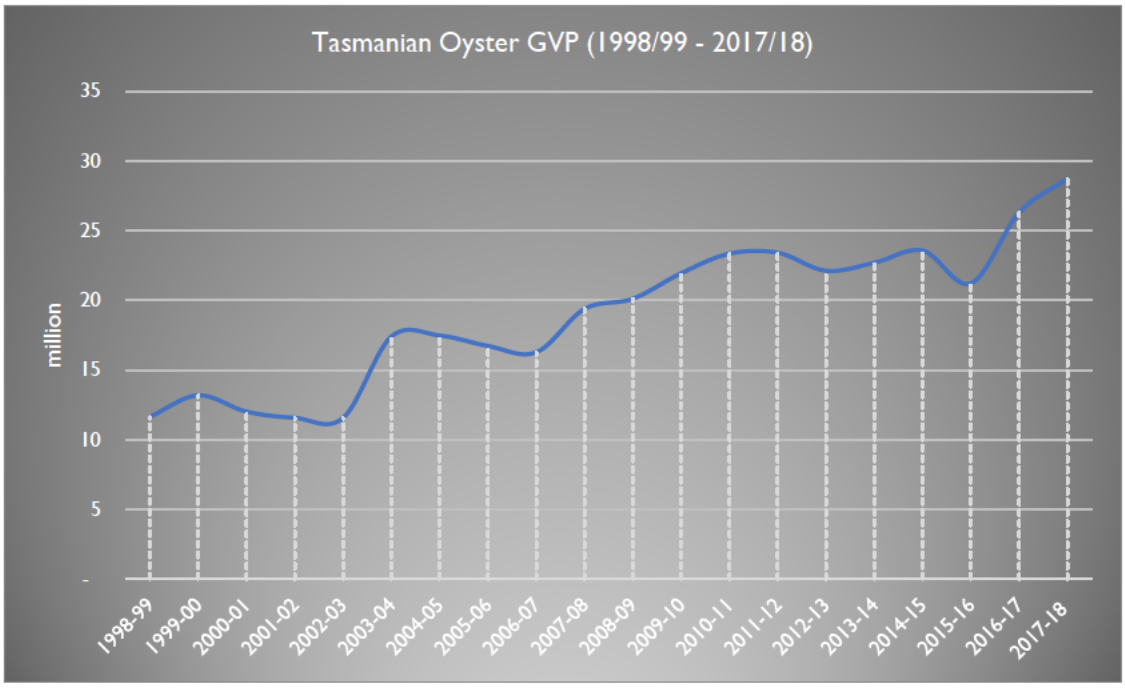

Figure 6 Tasmanian Oyster GVP, Source: ABARES 2018

Blue Mussels (Mytilus galloprovincialis)

There are currently 2 licenced land-based hatcheries and 9 licenced marine based mussel farms. A single operator with a land-based hatchery located at Triabunna and a deep water marine based farm in the Mercury Passage on Tasmania's east coast is producing the majority of the State's production. Production presently averages just over 600 tonne of blue mussels per annum, valued at around $2.5M. DPIPWE understands that intended commercial changes underway in the sector may lead to reduced production.

The Tasmanian blue mussel industry has been hard hit by biotoxins from harmful algal blooms, with the industry being recognised for its development and adoption of a range of biotoxin rapid test kits to allow early detection and avoid product recalls of unsafe product.

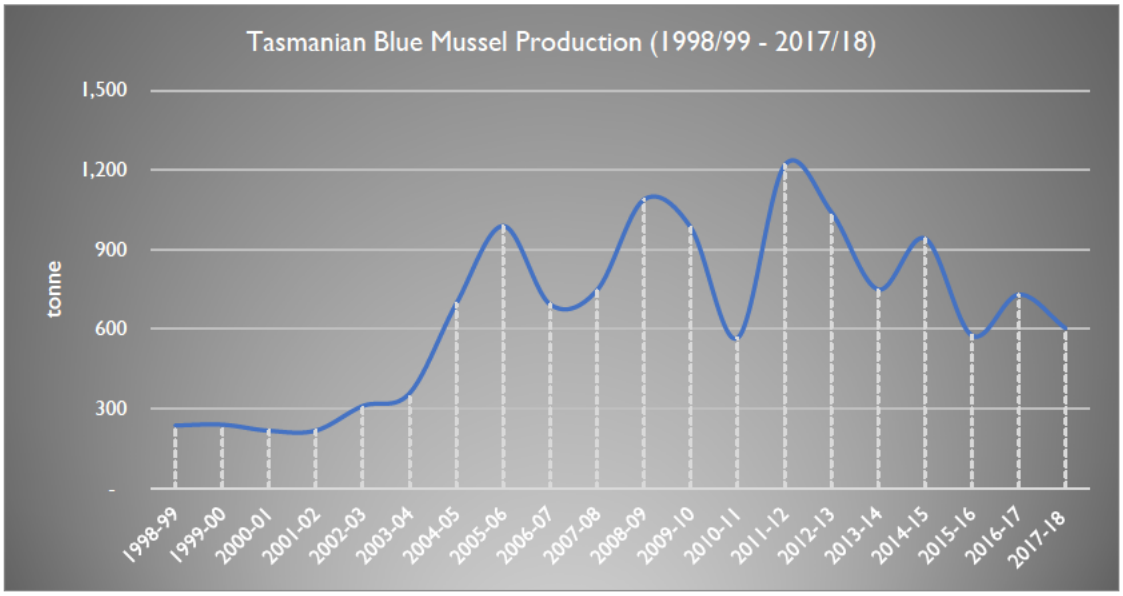

Figure 7 Tasmanian Blue Mussel Production, source: ABARES 2018

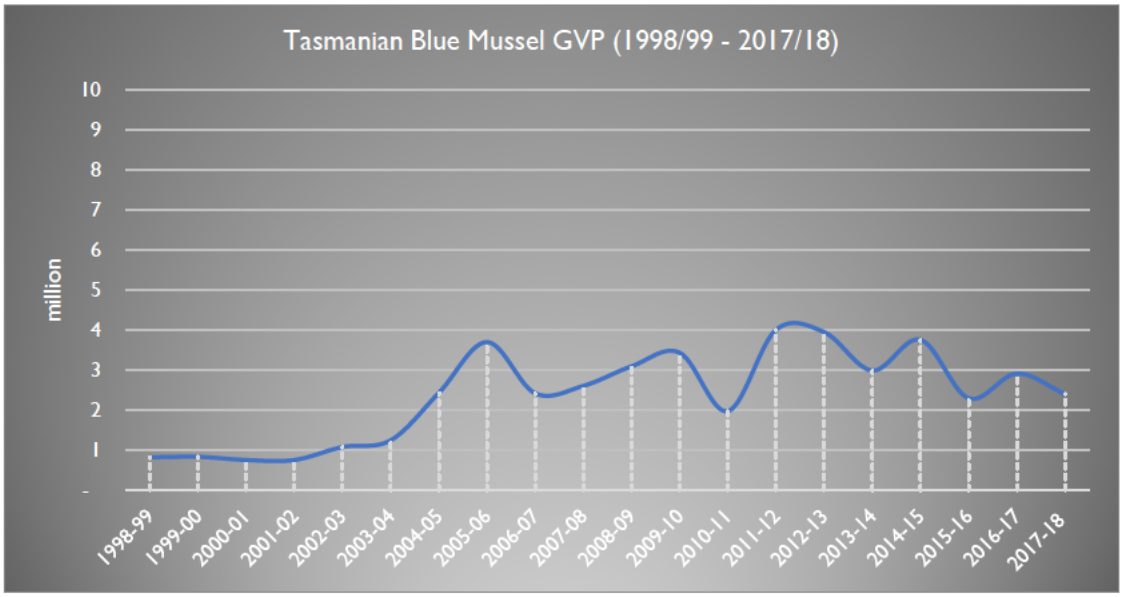

Figure 8 Tasmanian Blue Mussel GVP, source: ABARES 2018

Abalone

Nature and status

Abalone (Black lip abalone – Haliotis rubra, Greenlip abalone - Haliotis laevigata, and their hybrid)

Abalone farmed in Tasmania is predominantly greenlip abalone or hybridisation of the greenlip and blacklip abalone species that form the basis of our well-managed and valuable wild harvest fishery.

Tasmanian farmed abalone is predominantly sold into the overseas food service markets, and as such was exposed to the initial market shock impact of COVID 19.

There are presently 6 licenced land-based abalone farms on the north, east and south-east coasts of Tasmania, in 2017-18 these farms produced 100 tonne, however it is worth noting that this industry is now in a growth phase and unpublished data indicates that the sector has more than doubled production since 2017-18.

Abalone farming is currently restricted in Tasmania to land-based operations to manage the biosecurity risk presented by abalone viral ganglioneuritis (AVG) to Tasmania's wild abalone resource.

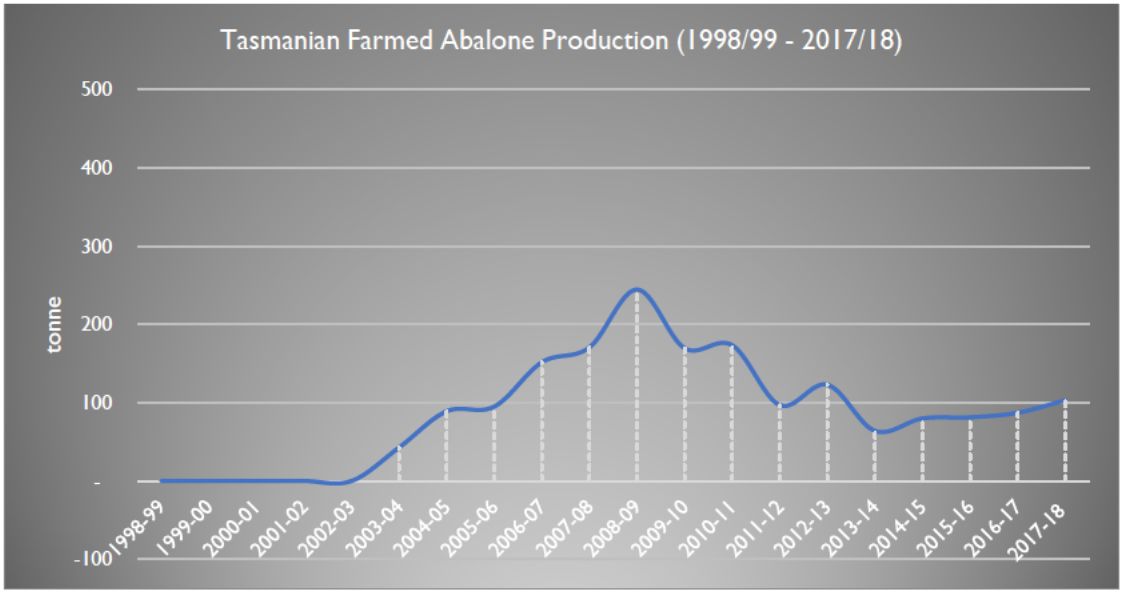

Figure 9 Tasmanian Farmed Abalone Production, source: ABARES 2018

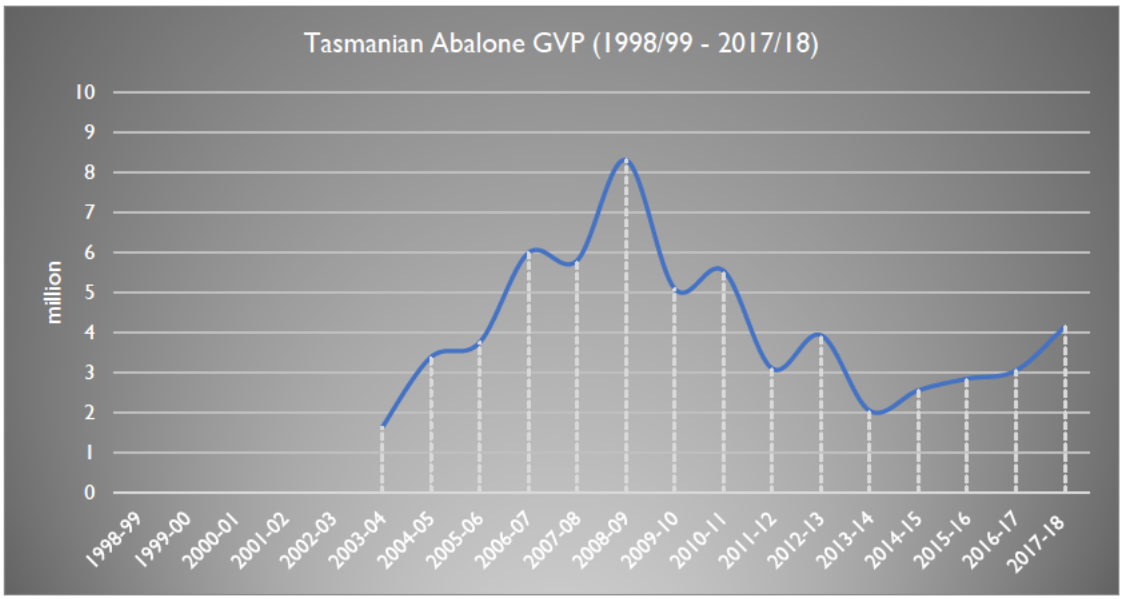

Figure 10 Tasmanian Abalone GVP, source: ABARES, 2018

Seaweed

Nature and status

The seaweed aquaculture sector in Tasmania is in its infancy but there is exciting potential for the industry to become a valuable economic contributor to the State. There is presently one licenced land-based facility and 12 marine based farms licenced to produce various seaweed species including *Macrocystis pyrifera, Lessonia corrugata, Ecklonia radiata* and *Ulva lactuca*, with trial permit authorisation also being in place for *Asparagopsis* culture.

Opportunities and barriers to expansion

DPIPWE acknowledges that industry and the wider community is best-placed to comment in detail on the specific opportunities and barriers to expansion of aquaculture. Through the Department's regular industry engagement activities, a range of inter-related issues are often raised including:

- access to potentially suitable sites for aquaculture, including biophysical limitations and contestability with other seafood sectors and users,
- changing climate affecting water temperatures, disease and site suitability,
- biosecurity management, i.e. pest and disease prevention and management, animal welfare,
- environmental management and regulation,
- access to freshwater (applying to both hatcheries and some marine operations), waste disposal, and or recycling of waste products,
- social acceptance, community concern about amenity values of coastal waters and contested use of shared waters for a range of activities,
- development of farming technology, costs of capital and commercial risk,
- investment in research, development and innovation,
- market access, new market development and trade, and
- skills, training and workforce development.

It is also noted that both the industry and wider community would likely reflect in submissions to this Inquiry their views on the status and influence of Government regulation and policy settings, and research and development support as being key issues.

As stated earlier, the National Aquaculture Strategy offers an opportunity to consider the jurisdictional processes and regulatory framework needed to provide for marine farming to operate in Commonwealth waters.

Conceptually, this provides the opportunity for fin fish production, as well as potentially for seaweed and multi-trophic aquaculture systems. This also accords with the commitment in the Tasmanian *Sustainable Industry Growth Plan for the Salmon Industry* for future expansion of the fin fish farming to move into oceanic (deeper and high energy) waters, rather than estuarine waters.

DPIPWE is in the process of leading a contemporary marine spatial planning exercise to explore ways to identify potential sustainable growth areas for new offshore finfish marine farms. The specific work is being undertaken by the Institute for Marine and Antarctic Studies (IMAS) using lessons learnt from the Pilot Marine Spatial Assessment-Tool that was developed by IMAS in south east Tasmania. This could enable a science-based re-evaluation of the current map of "grow" and "no grow" zones in the Salmon Plan. The work excludes the east coast of Tasmania, inclusive of Cape Portland to Tasman Island, as the current Government has indicated it will not allow additional finfish farms in this area.

DPIPWE notes the recently released National Agricultural Labour Advisory Committee's report – National Agricultural Workforce Strategy: Learning to excel, together with a Roadmap to attract, retain, upskill and modernise the agricultural workforce, including the seafood sector.

The Roadmap notes that addressing agricultural workforce matters is a shared priority for all governments, including through National Cabinet, and will continue to be a key strategic focus for all Australian agriculture ministers. Tasmania will continue to work with the Australian Government and with education and training providers as it responds to the recommendations of the National Agricultural Workforce Strategy. The opportunity is to ensure that marine aquaculture and seafood workforce development is recognised further along with land-based agriculture.

Opportunities to streamline and increase effectiveness of current regulatory frameworks

As a principle, to facilitate marine farming more readily in Commonwealth waters (a key objective of the National Aquaculture Strategy), alignment (and amendment) of state and federal legislation may be required. Ensuring alignment would provide legislative consistency, constitutional certainty, and enable governance, management and operational arrangements to be developed for states to be able to effectively manage fisheries in Commonwealth waters. This is something that Tasmania is keen to continue to explore further directly with the Australian Government.

Appendix 1 provides an overview of the Tasmanian regulatory framework for aquaculture. The previous section on fin fish farming also outlined recent changes made to improve the effectiveness of salmon industry regulation, with a focus on environmental management.

A critical area of government regulation for aquaculture is biosecurity. Effective biosecurity systems and related research and development are contributing to disease and pest risk mitigation and support domestic and international market access for live aquatic species and their products. Tasmania has recently undertaken significant reforms to biosecurity regulation and operation through the new *Biosecurity Act 2019* and is undertaking a range of biosecurity actions of significance to the local aquaculture industry.

Biosecurity in aquaculture

In general, Australia's favourable biosecurity status and system helps our aquatic products achieve access to premium markets overseas. However, our trading partners are increasingly demanding more rigorous proof of freedom from disease. Continued surveillance for aquatic animal diseases and pests

of significance is therefore essential for export-oriented industries, or industries developing export markets, which require proof of freedom from diseases to support export certification.

The Fisheries Research and Development Corporation (FRDC) is effective at commissioning complementary aquaculture industry research. Notably the Tasmanian Centre for Aquatic Animal Health and Vaccines (CAAHV) undertakes research at the Tasmanian Government-owned Animal Health Laboratory (AHL) in support of maintaining biosecurity within Tasmania and for the purpose of assisting the salmonid industry to expand.

The salmonid animal health research program has been developed in consultation with the Tasmanian Salmonid Growers' Association. The CAAHV recently secured a $6.9 million, five-year investment from the FRDC, which is being matched by in-kind Tasmanian Government contributions, for an aquatic animal health R&D program to be delivered in partnership with industry stakeholders.

The research focus is on the development of new or improved diagnostic tests and the development and testing of vaccines for use with farmed salmonids. Five salmonid vaccines have been deployed over the last 20 years that have been keystone developments enabling industry growth. The Centre is also responsible for maintaining diagnostic virology and vaccine testing services for the Tasmanian salmonid aquaculture industry.

Further information on the Tasmanian Centre for Aquatic Animal Health and Vaccines (CAAHV) is available from https://dpipwe.tas.gov.au/biosecurity-tasmania/animal-biosecurity/animal-health-laboratories/centre-for-aquatic-animal-health-and-vaccines

The new Tasmanian Biosecurity Act 2019

As framework legislation, the new *Tasmanian Biosecurity Act 2019* sets out the overarching legal concepts, principles, functions, and legal machinery to support biosecurity management in Tasmania. The objectives of the Act are:

- to ensure that responsibility for biosecurity is shared between government, industry and the community;
- to protect Tasmania from threats posed by pests and diseases to land and water-based industries and environments, public health and public amenities, community activities and infrastructure;
- to provide a robust and fair regulatory framework for biosecurity in Tasmania that is based on sound risk assessment and evidence;
- to give effect to State, national and international biosecurity agreements and strategies, such as the Tasmanian Biosecurity Strategy;
- to facilitate the trade of Tasmanian produce by ensuring it meets national and international biosecurity requirements; and
- to promote compliance with a 'general biosecurity duty' through emergency preparedness, effective enforcement measures, and communication and collaboration between government, industry and the community.

The Act introduces in Tasmania a new legal obligation known as the General Biosecurity Duty – or GBD. The GBD emphasises the importance of shared responsibilities and the need for Government, industry and the community to work together to maintain a strong biosecurity system.

Further information is available via: https://dpipwe.tas.gov.au/biosecurity-tasmania/about-biosecurity-

The Tasmanian salmonid industry also subscribes to the Tasmanian Salmonid Health Surveillance Program (TSHSP), a joint venture between the DPIPWE and the Tasmanian salmonid industry for over 23 years, which is recognised by Tasmanian and Commonwealth governments as important for endemic salmonid pathogen surveillance and proof of freedom from exotic pathogens. It provides a subsidised rate for industry-led (passive) disease surveillance investigations. The broader purposes of the TSHSP are to support the sustainability of the Tasmanian salmonid industry, the industry's biosecurity advantage and their access to domestic and international markets. These purposes are consistent with the objectives outlined in the Tasmanian Biosecurity Strategy.

The TSHSP has several objectives but principally it is to investigate significant or unusual morbidity or mortality events in farmed salmonid species to identify the cause, either infectious or non-infectious. These activities satisfy the reporting obligation under the *Animal Health Act 1995* (and when fully enacted, the *Biosecurity Act 2019*) if a notifiable List A disease of an aquatic species (exotic to Tasmania or Australia), or new and significant emerging disease is diagnosed by laboratory testing. This collection of disease incidence data allows Biosecurity Tasmania to support evidence-based policy, state-wide biosecurity management and regional biosecurity agreements between salmonid aquaculture companies in Tasmania. The work supports domestic and international market access for the salmonid industry. It is a useful model for other aquatic industries.

The abalone farming industry continues to be land-based in semi-open water systems and open water systems. This brings commensurate biosecurity risks with current farming technology still developing. Access to suitable land sites can also be a limitation.

The abalone industry has the Abalone Health Accreditation Program (AHAP) with participation by most Tasmanian abalone farms. In 2015, the Animal Health Committee (AHC) a sub-committee of the National Biosecurity Committee consisting of the Chief Veterinary Officers and observers from each jurisdiction, endorsed the AHAP as a nationally agreed document to facilitate trade in abalone livestock. The program requires that farms develop an auditable biosecurity plan in addition to, in most states, employing targeted and sentinel surveillance. This is an effective low-cost strategy that provides a potential model for other aquaculture industries.

In addition, the Department of Agriculture, Water and the Environment in collaboration with the Australian Centre for Disease Preparedness (ACDP) and southern states' aquatic animal health authorities of Western Australia, South Australia, Victoria, Tasmania and New South Wales, initiated a structured active surveillance program in farmed and wild abalone in Australia. The overall objective of the surveillance program was to determine Australia's baseline status for diseases of national and trade significance. The project involved a coordinated and shared approach to surveillance by industry and governments.

The voluntary survey aimed to provide evidence to support Australia's freedom from exotic diseases and evidence for market access for known endemic diseases with restricted distribution. This information could be used to improve and maintain market access and to substantiate the biosecurity measures at Australia's borders. Additionally, knowledge of disease status could support targeted biosecurity practices to minimise disease risks from endemic or emerging diseases in developing or expanding aquaculture enterprises.

The opportunity exists for jurisdictions to continue to conduct planned structured exercises such as this to help support market access.

The Tasmanian oyster industry has since 2016 implemented a control program for Pacific Oyster Mortality Syndrome (POMS) due to the presence of the OsHV-1 micro variant virus. Oyster farmers are required to report any unexplained and significant mortality (as are all livestock producers) of oysters (greater than 5 percent).

The oyster industry has successfully invested in the selection and breeding of POMS resistant lines but some challenges to complete resilience remain. Approved hatchery biosecurity programs combined with movement testing for POMS has allowed the industry to continue to stock POMS free areas and contribute data for market access assurance.

A priority for Government authorities is to support the oyster industry to continue to improve disease surveillance programs and review POMS testing requirements over time in response to local data and international POMS testing results.

A Control Area has been declared for the whole of Tasmania under the *Animal Health Act 1995* restricting the movement of oysters and animal materials and conveyances used in the production of oysters. Movement of oysters for human consumption and for laboratory testing are not restricted. A general permit has been issued allowing oysters and associated equipment to be moved within individual production areas to allow for movement of boats to and from leases. All other movements require a permit. The new Tasmanian *Biosecurity Act 2019* provides the opportunity for equivalent but simplified requirements.

As previously outlined, the progressive implementation of the new Tasmanian *Biosecurity Act 2019* will see the implementation of a Tasmanian Salmonid Biosecurity Program as a flagship biosecurity program with the intent that this be in place by late 2021, subject to consultation processes. The Department is considering if similar biosecurity arrangements could be developed for the oyster industry with simplified permit arrangements to reflect the POMS zones in operation. This program will set out precise requirements for biosecurity for all parts of the salmonid production cycle. This enables biosecurity clauses currently in operation under other marine and environmental regulation to be consolidated and streamlined. The *Inland Fisheries Act 1995* will continue to apply to the fresh water (hatchery) salmonid operations.

The structures of Government, and inter-governmental relations, assist in providing a responsive regulatory framework for supporting the aquaculture sector.

DPIPWE has been engaging in the development of the proposed Aquatic Emergency Animal Diseases Response Agreement. This agreement would facilitate cost sharing between governments and industry of any approved disease eradication efforts against exotic pathogens. It also provides for training and awareness activities. It would provide an improved basis for countering the emergence and establishment of aquatic biosecurity disease threats and improved preparedness in these sectors.

AQUAPLAN is Australia's National Strategic Plan for Aquatic Animal Health. The plan outlines objectives and priorities to enhance Australia's management of aquatic animal health. AQUAPLAN is a collaborative initiative that is developed and implemented by the Australian and state and territory

governments and aquatic animal industries.

The Department of Agriculture, Water and the Environment coordinates the development and implementation of AQUAPLAN. National implementation of AQUAPLAN activities and projects is overseen by the Animal Health Committee and its Sub-Committee on Aquatic Animal Health (SCAAH) in close collaboration with industry. Australia has had two previous five-year AQUAPLANs. AQUAPLAN 2020–2025 is Australia's current national strategic plan for aquatic animal health that is currently being developed with 7 objectives and 28 project areas.

Many useful initiatives are created under AQUAPLAN and it is a very useful model of government and industry collaboration with a high level of participation by Tasmanian industry.

Ability for businesses to access and commercialise new innovations to expand aquaculture

The Sustainable Marine Research Collaboration Agreement

In 2011 the State Government of Tasmania and The University of Tasmania, through IMAS formed the Sustainable Marine Research Collaboration Agreement (SMRCA). The SMRCA supports the effective and sustainable management of Tasmania's living marine resources so that the maximum benefit accrues to Tasmania.

This is achieved by providing fisheries, marine aquaculture, and supporting relevant estuarine and coastal marine environmental research and development services to the State, the University, and to commercial, recreational, and indigenous seafood sectors.

The SMRCA aims to assist goals of the University and the State of encouraging new industry, effectively promoting Tasmania's advantages, and ensuring Tasmania's natural resources are managed in a sustainable way now and for future generations.

The SMRCA fishery and marine aquaculture research program is one of Australia's largest and most successful marine research collaborations with total activities averaging more than $10 million per annum and includes:

- an operational budget of the order of $5M funded by the Tasmanian State Government and the University;
- the leverage of operational resources and infrastructure into an additional >$5M of externally funded research projects;
- a significant number of research higher degree projects; and
- significant research output that contributes to the attainment by the University of Tasmania of world class research in fisheries science.

Priority areas for aquaculture that are assisted by SMRCA research include:

- Contributing to sustainable fisheries and aquaculture development and management in Tasmania, Australia and internationally (through diverse partnerships);
- Management and stewardship of Tasmanian marine aquaculture including oysters, salmon,

abalone, mussels and seaweeds;

- Research and development into species of commercial potential in Tasmania and globally (Atlantic salmon, tropical rock lobsters, seaweeds, etc.)
- Understanding environmental ecosystem changes in the coastal environment;
- Further development of the Tasmanian salmonid marine farming industry;
- Evaluation of biosecurity risks for all seafood sectors;
- Understanding marine mammal and endangered species interactions with aquaculture;
- Understanding the social and economic impacts of aquaculture at local, regional and national scales; and
- To improve understanding of temperate marine, Southern Ocean, and Antarctic environments, their resources, and their roles in the global climate system through research.

Further information on the SMRCA fishery and marine aquaculture research program is available here: https://www.imas.utas.edu.au/research/fisheries-and-aquaculture

The Blue Economy CRC

The Tasmanian Government, through DPIPWE, has committed long term funding and significant in-kind support to the Blue Economy CRC (BE-CRC) that is paving the way for new offshore aquaculture, ready for commercialisation and the development of supporting environmental guidelines, policies and frameworks to provide confidence that offshore developments operate to the highest environmental standards.

The BE-CRC has bought together 40 research partners of national and international expertise in aquaculture, marine renewable energy and marine engineering as part of a single, collaborative project. The Tasmanian Government is currently the only government partner in the CRC.

The CRC has five specialised research programs:

- Offshore Engineering and Technology - to generate the infrastructure that supports the development of offshore systems;
- Seafood and Marine Products - to develop offshore aquaculture systems that provide viable and sustainable growth opportunities for this sector;
- Offshore Renewable Energy Systems - to advance the technological and commercial readiness of emerging offshore renewable energy system technologies;
- Environment and Ecosystems - to understand the environmental footprint of the infrastructure, culture systems, and energy generating devices;
- Sustainable Offshore Developments - to profile and advocate for the regulatory frameworks that will provide confidence for aquaculture and renewable energy industry to invest and for the public to be confident that offshore developments operate to the highest environmental standards for sustainability and ecosystem integrity.

DPIPWE are directly involved in various BE-CRC projects and are actively providing support and strategic advice to the BE-CRC board through membership of both the BE-CRC Participant Advisory Committee and BE-CRC Scientific Advisory Committee.

Further information on the Blue Economy CRC is available here: https://blueeconomycrc.com.au/

Glossary

EMPCA	Environmental Management and Pollution Control Act 1994
LMRMA	Living Marine Resources Management Act 1995
MFPA	Marine Farming Planning Act 1995
TSPA	Threatened Species Protection Act 1995

Appendix 1 - The Tasmanian Regulatory Framework for Aquaculture

Ecologically Sustainable Development and Adaptive Management

The National Strategy for Ecologically Sustainable Development is the policy within which Australian state and federal governments have agreed that aquaculture development is to be implemented. This strategy was endorsed by the Council of Australian Governments in 1992 and has three core objectives:

- to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- to provide for equity within and between generations; and
- to protect biological diversity and maintain ecological processes and life support systems.

The strategy is implemented under the guidance of several ecological and development principles. It emphasises that a balanced approach is required for ecologically sustainable development and these guiding principles and core objectives need to be considered as a package. No objective or principle should predominate over the others.

Management judgments must be based on the available scientific evidence of risk, and the levels of short and long-term impacts that are acceptable in the socio-economic as well as ecological context.

In Tasmania, an adaptive management approach that is consistent with Tasmania's Resource Management and Planning System, and ecologically sustainable development principles, is applied to marine farming. This approach enables effective and timely responses to the evolving issues that arise from a dynamic industry operating in a highly challenging environment.

Planning processes under the Marine Farming Planning Act 1995

The MFPA sets up the process for planning for marine farming development. The purpose of the MFPA is to achieve well-planned sustainable development of marine farming activities to:

- integrate marine farming activities with other uses; and
- minimise adverse impacts; and
- set aside areas for activities other than for marine farming activities; and
- take account of land uses; and
- take account of the community's right to have an interest in those activities.

The MFPA shares its objectives with other State resource management legislation including the LMRMA, where marine farming activity is regulated and managed through marine farming licences, and the EMPCA, which sets up environmental licences for the regulation of finfish farming and empowers the EPA to regulate the environmental impact associated with finfish farming.

The MFPA, LMRMA and EMPCA are components of Tasmania's Resource Management Planning System (RMPS), which was established in 1994 to achieve sustainable outcomes for the use and development of the State's natural and physical resources.

The planning process set out in the MFPA is extensive and comprehensive. The same process applies for all sea-based marine farming planning developments, whether for finfish, shellfish or other species, such as seaweeds.

The planning authority is the Secretary of the Department of Primary Industry, Parks, Water and Environment (DPIPWE). The MFPA establishes a review panel (the Panel), which considers and reviews planning proposals and makes recommendations to the Minister. The Director, EPA has statutory involvement throughout the planning process. The Minister determines planning outcomes.

The focus of the planning process is on the planning, rather than operational elements of a proposal. Marine farming areas are identified through marine farming development plans (plans). A development plan identifies zones for marine farming, how much area may be leased within each zone and contains management controls to mitigate, minimise and manage any negative effect on the environment.

There are currently 14 marine farming development plans. The complete list of marine farming development plans can be viewed at https://dpipwe.tas.gov.au/sea-fishing-aquaculture/marine-farming-aquaculture/marine-farming-development-plans .

The plans work in conjunction with conditions on marine farming leases, as well as marine farming licences (issued under the LMRMA) and environmental licences (issued under the EMPCA).

The MFPA sets out two distinct planning processes: creation of a new plan; and amendment of an existing plan.

Role of the Panel

The Panel is a statutory body established under Section 8 of the MFPA. The primary function of the Panel is to consider marine farming planning matters and make recommendations to the Minister. The Panel comprises up to nine individuals appointed by the Governor.

The general functions and powers of the Panel are provided in the MFPA under Section 9, being:

- to consider draft plans, draft amendments to marine farming development plans and draft modifications to marine farming development plans following reviews;
- to consider environmental impact statements;
- to consider comments made on draft plans, draft modifications and draft amendments;
- to make recommendations to the Minister in respect of draft plans, draft modifications and draft amendments;
- to perform any other function imposed on it under the Act or any other Act; and
- to undertake any other function or activity the Minister determines.

The Minister, by notice in writing, may give directions to the Panel. The Panel must perform its functions and exercise its powers in accordance with any directions given by the Minister.

In undertaking its functions, the Panel may conduct hearings to assist it in the performance of its functions and do anything necessary or convenient to perform its functions.

To assist the Panel in performing its functions the Department's expertise and capabilities are available to it upon request. Additionally, the MFPA provides for the Panel to seek expert advice from any person or body on:

- the adequacy or otherwise of proposed environmental controls;
- technical aspects in relation to marine farming;
- biological and physical requirements of fish species; and

- any other matter to assist it in performing its functions.

Creation of marine farming development plans

The MFPA sets out a specific process by which a development plan is made. The process requires the Minister to consent to the preparation of a draft plan, which, once drafted, is submitted to the Panel by the planning authority. The Panel considers the draft plan and, if satisfied that it meets the requirements of the MFPA (including any requirements of the Director, EPA), recommends the draft plan be released for public exhibition.

If the Minister approves the public exhibition of the draft plan, it is exhibited, together with the required environmental impact statement (EIS) for two months, during which time people may make submissions.

The public submissions are considered by the planning authority, which submits a report to the Panel recommending whether the draft plan should be modified as a result of any submission. The Panel considers the submissions, the planning authority's report, environmental management matters (finfish related) that the Director, EPA requires the Panel to consider and, if the Panel considers it necessary, or if someone has requested, conducts hearings.

The Panel then forms a view on whether the draft plan is acceptable, should be modified, or should be rejected. If it is acceptable, the Panel recommends to the Minister that the draft plan be approved and the Minister, after considering that recommendation, may approve the draft plan.

Fifteen marine farming development plans have been approved through this process. Thirteen of these plans were created through a government-led process in the years following the commencement of the MFPA. These plans related to pre-existing marine farming regions.

The Plans considered the location of existing farms (that had been established prior to the commencement of the MFPA in 1995) and, where appropriate, zoned these locations or identified alternative locations for those farms to move to. They also identified new zones where possible, to provide for industry expansion and development.

A further two plans have been created following a proponent-led process, one in 1998 (Storm Bay off Trumpeter Bay, North Bruny Island) and the other in 2019 (Storm Bay North). The two new plans prepared by proponents have related to discrete areas distinct from any existing plan areas. The MFPA provides for either government-led or proponent-led scenarios.

Amendment of existing marine farming development plans

The MFPA also provides for the amendment of existing plans. The process for an amendment may begin with a proponent submitting a formal request for amendment. The planning authority is then required, within 35 days, to recommend to the Panel whether the draft amendment should be made. If the Panel approves the making of the draft amendment, the Panel seeks the consent of the Minister to direct the planning authority to prepare the draft amendment.

If the Panel refuses to approve the making of the draft amendment, this decision by the Panel may be appealed to the Resource Management and Planning Appeals Tribunal.

Alternatively, the MFPA provides that the Panel may at any time determine that an amendment to a plan is desirable, either of its own motion, or in response to a request from the Minister, the planning authority or the Director, EPA. Except where the request is from the Minister or the Director, EPA, the Panel may only direct the planning authority to prepare the draft amendment with the Minister's consent.

Since 2009, most amendments have been proponent-led.

Once directed by the Panel, the planning authority prepares the draft amendment and submits it to the Panel for consideration. If the Panel is satisfied that the draft amendment is suitable for exhibition, the Panel certifies it as such and recommends it to the Minister.

If the Panel considers that the draft amendment is not suitable, it may modify the draft amendment directly, or refer it back to the planning authority for modification. This can be an iterative process and can take considerable time.

The Minister may then approve the release of the draft amendment for public exhibition. The draft amendment and accompanying environmental impact statement (EIS) are released for a period of between three weeks and two months.

If it relates to finfish, The Director, EPA may issue the Panel with requirements that must be addressed in the draft amendment, EIS, or be considered by the Panel throughout the process.

Environmental impact statement and pre-planning assessment

As well as the preparation and consideration of a draft plan or draft amendment, the planning process involves the preparation of an EIS pursuant to section 23 of the MFPA, to

- disclose any available information relating to the environmental impact of the draft plan, except if there is a reason for confidentiality;
- if it relates to finfish farming, address any matter relating to environmental management that is required by the Director, EPA, in a notice under section 17A(1), to be addressed in the environmental impact statement or in any environmental impact statement;
- contain information appropriate to the significance of the draft plan, a modification to a draft plan, a draft amendment to a plan and a modification to a draft amendment to a plan to the environment and the likely public interest.

Under either a new plan or an amendment process, an early step is for the Minister to provide consent for the draft plan or draft amendment to be prepared. Such approval indicates that the Minister is satisfied with the general intent and concept of the proposal.

In the case of an amendment, this also comes after the planning authority has recommended to the Panel that the amendment be made and the Panel has considered and approved the making of the amendment. If it relates to finfish the Director, EPA is notified of an application and any approval by the Panel or the Minister.

To inform this assessment, DPIPWE has implemented a pre-planning process that a proponent must work through. It involves preparing a proposal overview, which is used by DPIPWE, with input from the Panel and the EPA, to prepare proposal specific guidelines for the EIS that will be required if the proposal proceeds.

The pre-planning process further requires that a draft EIS is prepared to an acceptable standard by the proponent before making application to either prepare a new plan, or an amendment.

This pre-planning process ensures that fundamental considerations are thoroughly worked through before a proposal is taken forward, so that only well considered proposals proceed to the formal planning stage.

For a proposal to be suitable to proceed, it must meet the requirements set out in sections 21 and 22 of the MFPA. This includes a requirement that:

- it furthers the objectives of resource management within the area; and
- it has regard to use and development of the region as an entity in environmental, economic, recreational and social terms; and
- if it relates to finfish farming, it contains any matter relating to environmental management that is required by the Director, EPA to be contained in the plan or amendment.

The formal planning stage then provides for robust, independent review by the Panel, formal notification to the Director, EPA and consideration of any requirements they may have and statutory public consultation (which is in addition to the extensive public engagement that necessarily occurs as part of the pre-planning process).

Through this process the draft plan, or draft amendment may be modified if necessary (and, if the modifications are substantial, may be subject to further public consultation).

Suitability for public exhibition

The MFPA sets out that a draft plan or draft amendment is suitable for public exhibition when:

- it complies with sections 21 and 22, which set out the things a draft plan or draft amendment must do, may do and must not do;
- it contains any matters relating to environmental management of finfish farming that the Director, EPA, requires;
- it is accompanied by an environmental impact statement; and
- as the circumstances require, it contains appropriate details about marine farming zones, maximum leasable areas, draft management controls etc.

The Panel, therefore, considers a draft plan or draft amendment in relation to each of these aspects to inform its assessment of whether to recommend it for public exhibition.

Public consultation and final recommendation

Public engagement occurs in two phases in the planning of marine farming developments. The first phase occurs during the formulation of the proposal and the preparation of the EIS. This is led by the proponent preparing the draft plan or draft amendment, who is required to engage with the community in relation to the proposal, to gauge views, any concerns and work with government and stakeholders to avoid or mitigate potential impacts. The outcomes of this engagement are detailed in the EIS.

The second phase is the statutory process. This involves public exhibition, representations and (potentially) hearings. A draft plan is released for two months and a draft amendment is released for at least three weeks and at most two months. People may make written submissions (representations) during this period.

At the end of this period, each representation is carefully analysed and the issues raised are considered by the planning authority. The focus of this process is on what concerns are raised in the submissions, and how the management framework allows those issues to be managed through mitigation or avoidance, or, if necessary, how it may be modified through the planning process to provide the required regulatory capability.

The planning authority prepares a report for the Panel containing a copy of each submission, the planning authority's assessment of the issues raised, and whether the draft plan or draft amendment should be modified,

or whether the issues have an effect on the draft plan or draft amendment as a whole.

The Panel considers this report and, if it considers it necessary, or if any representor has so requested, it conducts public hearings in relation to the draft plan or draft amendment. The Director, EPA also receives a copy of the report and in response may formally require the Panel to consider specific matters.

After considering the representations, the planning authority's report and the information received through the hearing process and any matters as required by the Director, EPA, the Panel then proceeds to determine whether to recommend to the Minister that the draft plan/draft amendment be approved.

This may include either modifying the draft plan/draft amendment or requiring the planning authority to modify the draft plan/draft amendment before being satisfied to recommend it for approval. If the Panel is not satisfied, the MFPA allows for the draft plan/draft amendment to be modified until an acceptable solution is reached.

Role of the Minister

The Minister is involved throughout the planning process. The Minister's consent is required before drafting of a plan or amendment to a plan commences. In this way, proposals that are unlikely to ultimately be acceptable to the Minister of the day do not proceed through the process.

The Minister is again involved in approving the release of a draft plan or draft amendment for public exhibition. Once again, only proposals that the Minister is willing to consider make it to the stage of statutory consultation.

The power to make the final determination in relation to a draft plan or draft amendment then also rests with the Minister. For a new plan, the Minister may approve the draft plan, or refer the draft plan back to the Panel, indicating any concerns the Minister has. The draft plan is then re-considered through the planning process.

For an amendment, the Minister may seek any further information the Minister requires from the Panel, the Board of Advice and Reference, or the Director, EPA, prior to making a decision to accept the amendment without change, reject the amendment, or approve the amendment subject to alterations.

Where the Minister's determination is other than that recommended by the Panel, the Minister must notify parliament of the decision. Where the decision is to approve with alterations, and the alterations are minor, trivial or clerical, this requirement does not apply.

Amendment is not of a substantial nature or is to correct an error

In some situations, a draft amendment to a plan may not require an EIS or public consultation.

The Act provides that if the Panel is satisfied that a draft amendment is to correct an error, is not of a substantial nature, or is to remove an anomaly to clarify or simplify a plan, it may recommend to the Minister that the EIS and public consultation provisions do not apply. If the Minister agrees that those elements are not required, the Minister may then proceed to approve the amendment directly.

Allocation of leases

The MFPA provides for the establishment of a Board of Advice and Reference (BAR). Section 50 of the MFPA defines the functions of the BAR.

The functions of the BAR are –

- to advise the Minister on any matter the Minister may refer to it; and
- to perform any other function the Minister directs.

The BAR played a key statutory function post 1996 following the proclamation of the MFPA in providing the Minister with advice on the allocation of new water for marine farming leases identified in marine farming development plans, in accordance with the statutory provisions contained therein.

However, following the initial allocation processes, the workload of the BAR had been minimal since the mid-2000's. Amendments to the MFPA in 2011 provided additional options for lease allocation following proponent led planning processes that do not involve the BAR.

In 2015, as the BAR had not met in several years, the then Minister, abolished the BAR in accordance with the provisions of the Act. While the BAR is no longer required for the lease allocation following a proponent led process, there are still some circumstances where it may be required.

If the BAR is needed in future, the Act provides for it to be re-established.

The allocation of leases follows a process set out in the Act. There are two distinct approaches, depending on whether the marine farming zone has been created through a proponent led process or a government led process.

Where a zone is established through a government led process, the MFPA requires that the Minister seeks the advice of the BAR as to who should participate in an allocation process. The Minister can also seek advice from any other relevant person considered appropriate.

The Minister then considers the advice and determines who should participate in the process.

The Minister may also seek advice of the BAR about the method and criteria to be used to allocate a lease. However, since the bar was abolished, there have been no government led processes.

The allocation process could involve some form of tender and may, for example, be open, in the case of a new zone that has been created 'on spec'. Alternatively, where a zone has been created to facilitate a strategic need, it may be appropriate that only existing participants or specific existing lease holders participate in the process.

This type of approach was adopted in the early days of the implementation of plans, where zones were created with a stated intention that an existing legacy lease holder may be facilitated to move into a zone created by a plan.

For a proponent led process, the Minister may seek the advice of the BAR and can also seek advice from any other relevant person considered appropriate. Alternatively, where a zone is established as a result of a 'privately prepared plan' or 'privately prepared amendment' (i.e. a proponent led process), the Minister may invite the proponent to apply directly for a lease, without reference to the BAR. This has been the process used for recently approved plans or plan amendments and recognises the time and investment which has been made by the proponent seeking approval for the new area. Following application by the proponent, the Minister may then grant the lease.

The Act empowers the Minister to grant 'certificates of preference' to people who have prepared a draft plan, or who have made a significant research contribution, which has a direct relevance to the activities of the marine farming zone. Someone who has a certificate of preference may participate in one allocation process. The BAR may provide advice to the Minister on whether a person with a certificate of preference should participate in any particular allocation process.

These arrangements exist within the Act to assist orderly, fair and transparent allocation of leases. It enables a

person who undertakes a planning process or who 'proves up' the suitability of an area to have a reasonable expectation that, if the planning process is approved, they will have first option on a lease. Equally, it provides that the Government may plan for areas of marine farming development and make those available to the market, allocating the lease to the person who is likely to provide the greatest overall benefit from use of the area.

Marine farming leases

The MFPA provides for marine farming leases to be issued for a maximum thirty years. The lease confers on the lessee exclusive possession of the area specified in the lease and any specified area of seabed in the lease. The marine farming lease document contains a standard set of conditions as drafted by Crown law, the plan of the marine farming lease, and a deed of agreement between the Crown and the leaseholder.

Marine farming leases have a range of conditions in regard to the operation of the lease including, keeping the lease area neat and tidy, retrieval of equipment that has broken away from the lease in a reasonable timeframe, and marking of the lease to the satisfaction of the Minister and Marine and Safety Tasmania (MAST).

The marine farming lease is the instrument that facilitates the collection of annual lease fees for the area of water allocated by the Crown. The fees are determined under the Marine Farming Planning Regulations 2016 and are based on fee units that are re-determined on an annual basis as follows:

- Finfish rental fees for 2020/21 consist of a base fee of $2739.00 GST inclusive and $310.42 GST inclusive per hectare of the marine farming lease.
- Shellfish rental fees for 2020/21 consist of a base fee of $164.34 GST inclusive and $74.70 GST inclusive per hectare of the marine farming lease.

Freshwater Fish Farms (Hatcheries)

All freshwater fish farms (hatcheries) are licensed by the Director of Inland Fisheries under Division 3 of the *Inland Fisheries Act 1995.* Under the *Inland Fisheries Act 1995*, a fish farm means any area on land or in inland waters used to farm, culture, hatch, rear, ranch, enhance or breed freshwater fish for commercial or research purposes.

The Director of Inland Fisheries has power to grant fish farm licences to grow declared fish in inland waters. If Atlantic salmon is involved, then the agreement of the Minister administering the LMRMA is required.

Freshwater fish farm licences contain conditions to regulate matters including the species of fish permitted to be grown; the location and size of the farm; the source of supply of fish stock; notification requirements; disease management; and measures to prevent the escape of fish from the farm.

A freshwater fish farm licence is in force typically for a period of three years, and not exceeding 20 years, as specified in the licence unless action is taken under the *Inland Fisheries Act 1995* to cancel the licence. Presently freshwater fish farm licences are only issued for a three-year period. The *Inland Fisheries Act 1995* also contains provisions for variation, transfer, renewal and surrender of fish farm licences.

In 1996 species of fish that are not indigenous to inland waters in Tasmania were declared to be fish to which Division 3 of Part 3 of the *Inland Fisheries Act 1995* applies (fish farm licences). This includes salmonids (See *Inland Fisheries (Declared Fish Order 1996)*.

The regulation of the freshwater fish farms by the IFS includes measures that protect industry infrastructure,

promote and enhance biosecurity, introduce contemporary management systems, including compliance and audit.

This is delivered by a Fish Farm Management Plan for each farm. This approach benefits the community and industry through:

- improved biosecurity between fish farms for diseases;
- improved biosecurity between fish farms and wild fisheries;
- supporting sustainable growth of salmonid industry;
- protection for industry from illegal activity;
- complementing the regulation of the industry through the EMPCA and new *Biosecurity Act 2019*;
- increased capacity to prevent unwanted fish incursions;
- protection of biodiversity and environmental assets;
- supporting community expectations for regulation of industry.

In addition, all freshwater finfish farms, with a biomass greater than two tonnes require an Environmental Licence under EMPCA. Progressive improvements have been made to the environmental management of fish farms currently producing salmonids in Tasmania's inland waters.

Environmental management of marine farming operations

The MFPA provides for the preparation of marine farming development plans which include specific management controls to manage and mitigate potential negative effects of marine farming operations.

Management controls relating to environmental monitoring and management of marine farming operations include:

- levels of unacceptable effect;
- nitrogen outputs;
- carrying capacity;
- monitoring requirements;
- chemical usage and reporting;
- waste;
- disease;
- visual effects;
- access and marking;
- odour;
- noise;
- marine farming equipment; and

- predator control.

In establishing a marine farming development plan or progressing an amendment to a zone or zones within an existing marine farming development plan area, targeted zone assessments must be undertaken. This environmental survey assesses substrate type, habitat distribution, bathymetry and benthic flora and fauna.

The LMRMA requires marine farming leaseholders to hold a marine farming licence to farm fish (under the LMRMA fish include a range of species). The EMPCA requires marine farming leaseholders to hold an environmental licence to undertake the farming of finfish.

Marine farming licences contain specific provisions in relation to the management of marine farming operations. In many cases licence conditions contain specific conditions that expand on the provisions of management controls, defining environmental standards and outlining reporting and monitoring requirements. Environmental requirements for marine finfish farms are being transitioned from marine farm licences to environmental licences administered by the EPA.

Should there be a need to modify licence conditions following consideration of monitoring, research or compliance outcomes, the prescribed licence conditions can be varied at any time in accordance with provisions of the LMRMA and/or EMPCA.

Following the licensing of a marine farming lease area, ongoing operations are subject to a structured environmental monitoring and compliance assessment process, which involves ongoing review of monitoring and compliance reporting information against management controls, prescribed indicators and trigger levels.

This framework ensures that the impacts on the marine environment are limited to a level that can be assimilated without unacceptable environmental harm.

Threatened and protected marine species interactions

Many threatened or endangered species are listed and protected under various pieces of Tasmanian legislation.

The primary act is the *Threatened Species Protection Act 1995* (TSPA). The TSPA lists a number of marine species that may interact with marine farming and sets out a range of measures to protect listed threatened species and makes it an offence to take a listed species without a permit.

In addition, *the Wildlife (General) Regulations 2010* (regulations made under the *Nature Conservation Act 2002*), list Specially Protected or Protected Wildlife. A large number of marine mammals and coastal or oceanic bird species are listed as either Specially Protected or Protected Wildlife.

The *Fisheries (General and Fees) Regulations 2006* also provides for the protection of a number of fish species. Species protected under these regulations include five shark species (of particular note being the Great White Shark) and all handfish of the family Brachionichthyidae (in effect all handfish species that occur in Tasmania).

The *Nature Conservation Act 2002* and the TSPA are also components of the Resource Management and Planning System.

Freshwater species are also listed and protected under both the TSPA and the *Inland Fisheries Act 1995*. There are two species that are potentially impacted by freshwater hatcheries, the Australian grayling and the giant freshwater crayfish. The possession or take of these species is prohibited.

Threatened species are explicitly addressed in the EIS, which is a statutory requirement under the MFPA to accompany draft marine farming development plans and draft amendments/modifications to such plans and in Development Proposal and Environmental Management Plan (DPEMP) under EMPCA for developments in the

terrestrial or fresh water environment.

When developing zone assessment surveys, baseline surveys or environmental impact statement documentation, there is liaison between the respective Divisions within DPIPWE and the Director of the EPA.

This liaison ensures that survey requirements for threatened species are appropriate and that specific advice is obtained on suitable mitigation measures to ensure that threatened and protected species impacts are reduced as far as possible.

The Seal Management Framework 2018 describes the mechanisms, procedures, requirements and options for managing fur seal interactions with marine farming operations so as to minimise risks to farm workers and seal welfare. Further information on the Framework is available via https://dpipwe.tas.gov.au/wildlife-management/management-of-wildlife/seal-management .

Compliance management

All marine farming leases (and the surrounding shorelines) are regularly inspected by authorised officers from the Marine Farming Branch (MFB) of DPIPWE and Marine and Safety Tasmania (MAST). The compliance program reviews operations against conditions contained in marine farming leases and licences along with management controls contained with the MFDP's.

Freshwater operations are regularly inspected by authorised officers from the IFS and the EPA. This compliance program reviews operations against conditions contained in the Fish Farm Management Plan, freshwater fish farm licence and any applicable environmental licence.

Where issues are identified investigations are conducted and appropriate compliance action taken.

Environmental management of marine finfish farms in Tasmania

The provision of an environmental licence by the EPA for a marine finfish farm is contingent on assessment and approval of a baseline environmental survey report. A baseline environmental survey must be undertaken prior to the commencement of marine finfish farming operations.

Furthermore, EL conditions require the companies to undertake regular monitoring of the benthic and water quality impacts associated with farming finfish at all marine farming sites in the State. These monitoring programs are subject to a consistent management framework applying to operational finfish marine farming lease areas.

Benthic condition management framework

Stressors to benthic health associated with deposition of particulate organic waste are managed using an adaptive monitoring and data reporting framework. This framework provides for the assessment and management of potential effects of particulate organic waste material on benthic health in and around marine finfish farming lease areas. Waste material associated with marine finfish farming activities can be in the form of fish faeces, uneaten fish feed and in situ biofouling cleaning emissions.

Management objectives and indicators specific to benthic condition are defined in management controls and environmental licence conditions and prescribe ongoing monitoring and reporting requirements.

Fish pen specific feed input and net cleaning information is reported to the regulator pursuant to marine farming licence and environmental licence conditions and used by the EPA to determine monitoring survey specifications

and focus monitoring effort in appropriate locations within and outside operational lease sites.

Monitoring surveys may be subject to audit by the EPA. Geo-referencing and reporting protocols are in effect to ensure data is collected from prescribed locations.

Monitoring reports and underwater video footage must be reported by the lease holder, pursuant to environmental licence conditions issued by the EPA and these are assessed against specified criteria, aligned with relevant management objectives. The outcomes of these assessments are then communicated to relevant stakeholders.

In the event that significant benthic impact is evident and attributable to finfish marine farming operations, the regulators direct the lease holder to undertake a range of management responses consistent with management controls to mitigate these effects.

In cases where monitoring identifies effects that are unknown or difficult to clearly attribute, the management framework provides the capacity to identify and progress research priorities. This may involve collaboration between the regulator, industry and researchers.

The outcomes of monitoring, compliance reporting and research can then be used to inform the refinement of the program.

Water quality management framework

Stressors that may affect water quality include nutrient loading and dissolved oxygen depletion associated with fish metabolic processes, respiration and biogeochemical processes within organically enriched sediments.

Management objectives and indicators specific to water quality are defined in relevant management controls and environmental licence conditions and prescribe ongoing monitoring and reporting requirements.

As with benthic monitoring surveys, water quality monitoring surveys may be subject to audit by the EPA. Geo-referencing and reporting protocols are in effect to ensure data is collected from prescribed locations. Original laboratory reports must be supplied to the regulator and must satisfy specified quality assurance/quality control requirements.

In conjunction with the monitoring, relevant information on feed inputs (used to derive nitrogen emission figures) and biomass must be reported pursuant to licence conditions and this information is assessed by DPIPWE and the EPA against specified criteria, aligned with relevant management objectives.

Should monitoring identify effects that are unexpected or difficult to clearly attribute to marine farming activities, the management framework provides for a range of management responses.

These could range from a reduction in allowable biomass as implemented in Macquarie Harbour to more focused monitoring and research. This may involve collaboration between the regulator, industry and researchers.

The Tasmanian Planning Scheme and the Land Use Planning and Approvals Act 1993

The Tasmanian Planning Scheme (TPS) sets out the requirements for use or development of land in accordance with the *Land Use Planning Approvals Act 1993* (LUPAA) and includes specific planning provisions for land used for aquaculture operations including marine farming facilities that rely upon a coastal location to fulfill its purpose.

LUPAA gives authority to Local Government to impose environmental conditions through permits that are attached to land titles. The permit conditions may be enforced by Council or the EPA depending on the nature

and scale of the activity.

Activities that are defined as level 2 activities in Schedule 2 of the EMPCA are required by LUPAA to be referred to the Board of the EPA for environmental impact assessment and will be regulated by the independent Director of the EPA when the activity is in operation.

Commonwealth legislation

Any person undertaking marine or freshwater farming activities is subject to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act requires that a person must not take an action that has, will have, or is likely to have a significant impact on any matter of national environmental significance (as defined by the EPBC Act) without the approval of the Minister administering that Act.

A person intending to undertake fish farming activities who considers that these activities are likely to have a significant impact on a matter of national environmental significance must refer the action to the Minister administering the EPBC Act for consideration.

Proponents of marine farming developments are notified by DPIPWE of the prescriptions of the EPBC Act when development proposals are presented to the Department and when marine farming leases are granted.

In some cases, DPIPWE has assisted and/or facilitated referrals by marine farming proponents to the Commonwealth. An example of this was the expansion of marine farming in Macquarie Harbour in 2012.