PRIVATE AND CONFIDENTIAL

PENDING SEAFOOD INDUSTRY TASMANIA BOARD APPROVAL

2nd February 2024

The Hon. Tanya Plibersek

Minister for the Environment and Water

PO Box 6022
Parliament House
Canberra, ACT 2602

Email: minister.plibersek@dcceew.gov.au

Dear Minister,

We request that this submission be treated as private and confidential – pending final TSIC Board approval by the 9 February 2024.

Decision on validity of Request for reconsideration of Referral decision:
***Marine Farming Expansion, Macquarie Harbour Tasmania* (EPBC 2012/6406)**

As the peak body representing the interests of Tasmanian wild capture fishers, marine farmers and seafood processors, Seafood Industry Tasmania (SIT) is pleased to make a submission to the Department of Climate Change, Energy, the Environment and Water Decision on validity of Request for reconsideration of Referral decision: Marine Farming Expansion, Macquarie Harbour, Tasmania (EPBC 2012/6406).

Please feel free to contact me for more information.

Yours Sincerely,

Julian Harrington

Chief Executive

SEAFOOD INDUSTRY TASMANIA

Seafood Industry Tasmania (SIT)

Submission to
Department of Climate Change, Energy, the Environment and Water
Decision on validity of
Request for Reconsideration of

Referral Decision: Marine Farming Expansion, Macquarie Harbour, Tasmania (EPBC 2012/6406)

2nd February 2024

Email: Minister.Plibersek@dcceew.gov.au

Executive Summary

This submission should be treated as Private and Confidential pending Seafood Industry Tasmania Board approval.

Salmon aquaculture is a particularly important economic and employment stimulator on Tasmania's West Coast. The removal of the sector will have a significant impact on both the West and Northwest Coast communities.

Salmon aquaculture is one of many factors that impact the environmental health of Macquarie Harbour. The scale of aquaculture and current stocking rates means that aquaculture, in isolation, is not the main driver of low DO (dissolved oxygen) in the harbour.

In turn, salmon aquaculture farming operations is not having an unacceptable detrimental impact on Maugean Skate populations in the harbour.

Salmon aquaculture's impact on DO in Macquarie Harbour can be offset by the utilisation of nano-bubble technology, currently being trialled within the harbour.

It is the view of Seafood Industry Tasmania that the current salmon aquaculture operations, driven by a scientific evidence based adaptive management framework, fulfils the requirements of the 2012 EPBC Act approval.

Introduction

In 2012, The Australian Government published a Referral Decision under sections 75 and 77A of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) for Marine Farming Expansion, Macquarie Harbour, Tasmania (EPBC 2012/6406)[1].

Since then, Tasmania's three salmonid aquaculture companies, Huon, Petuna and Tassal, have been operating under the Referral Decision, *not controlled action if undertaken in a particular manner*.

In 2023, the Bob Brown Foundation, the Australia Institute, and the Australian Marine Conservation Society and Humane Society International Australia, wrote to the Hon. Tanya Plebisek, Minister for the Environment and Water requesting a reconsideration of the Referral Decision.[2]

[1] Original Decision – Marine Farming Expansion, Macquarie Harbour TAS | EPBC Act Public Portal
[2] Reconsideration Request | EPBC Act Public Portal

In response, Minister Plibersek initiated a review of the approval, to include a public consultation process. Key aspects of consideration revolve around:

- the availability of substantial new information about the impacts that the action has or will have, or is likely to have on a protected matter; OR
- a substantial change in circumstance that was not foreseen at the time of the first decision and relates to the impacts of the action has or will have, or is likely to have on a protected matter; OR
- the action is not being, or will not be, taken in the manner identified in the 2012 NCA-PM decision notice (attached).

Please accept this submission on behalf of Seafood Industry Tasmania, noting it is private and confidential, pending Seafood Industry Tasmania Board Approval.

Seafood Industry Tasmania

Seafood Industry Tasmania (SIT) is the peak body representing the interests of wild capture fishers, marine farmers, and seafood processors in Tasmania. Tasmania dominates the Australian seafood industry. In 2021, Tasmania produced 91,800 tonnes of seafood, over 30% of the country's seafood harvest, which was valued at $1.18 billion (38% of the Australian seafood industry's entire economic value)[3]. The seafood industry operates around Tasmania's entire coastline and produces both wild-caught and farmed seafood species. The key species for Tasmania are farmed salmonids (65,800 t, $887.6 million), wild-caught southern rock lobster (891 t, $73.6 million), wild-caught abalone (1,029 t, $61.2 million) and farmed shellfish (3,719 t, $43.1 million). Tasmania is also home to many vessels participating in Commonwealth managed fishery, which is regulated by the Australian Fisheries Management Authority. Over 3,500 people are directly employed within the Tasmanian seafood industry, often in regional communities.[4]

Salmon Aquaculture in Tasmania

For over 30 years, salmonid aquaculture has been part of Tasmania's primary production. The salmon industry is Australia's largest fishery, by volume and by economic value. It is now the leading farming activity within the state, ahead of dairy, fruit, vegetables, poppies, pyrethrum, beef, fine wool, and wine.[5]

A significant economic contributor in regional communities

In 2020/21, Tasmanian salmonid aquaculture contributed $639 million dollars (total GVA) to the Tasmanian economy[6]. Tasmania's salmonid farming industry also supports at least 5,100 direct and indirect FTE jobs across the state, often in regional communities. Over 60% of these jobs are indirect so without the presence of salmon aquaculture 3,255 individuals would not be employed.

[3] Fisheries and aquaculture statistics 2021 | DAFF
[4] Seafood industry work profile | SIT
[5] Tasmanian Agri-Food SCORECARD 2020-21 | NRET
[6] 2020-21 Social Economic Analysis Contributions December 2023 snapshot | IMAS

These jobs paid $346.1 million to Tasmania's families, who returned $180 million to Tasmania's economy through household spending.[7] Likewise, businesses within the salmon industry's supply chain added $213 million to the state's economy through re-spending in other sectors.

In addition to creating job opportunities in regional Tasmania, the salmon industry is committed to upskilling its employees through training and skills development, and to creating career paths that attract and retain skilled staff. This positive impact on regional Tasmania is not limited to direct employees; the flow-on impacts into the broader community are significant. There is a thriving manufacturing and service sector providing support to the industry for goods and services, including production and servicing of vessels, cages, and nets, feed, training, transport and logistics, and a range of contract and consultancy services. The wages of those employed by the salmon industry, or from those working within the salmon industry's supply chain, drive local businesses, creating additional local jobs for local businesses.

Salmon aquaculture: the heart of regional communities

Salmon aquaculture is the social fabric that binds many Tasmanian regional communities.

Many salmon industry employees work and live in regional communities. They buy and build houses, they start families, and they raise their children, all in regional communities. Partners of salmon workers often work in or volunteer in their community. The children of salmon workers attend local schools. The salmon industry, their workers, and the businesses and employees of their supply chain, are the heart of regional communities around much of Tasmania's coastline, from Strahan on the rugged west coast, to Triabunna on the island's east coast. These communities are thriving because aquaculture brings huge economic benefits to the region.

About 17% of all employment on the West Coast and Latrobe Local Government Areas is attributable to salmon aquaculture companies. These jobs are high quality, with employees receiving up to 73% more income than the local average.

Within the West Coast LGA, Strahan presents a clear example of the benefits of salmon farming to Tasmanian regional communities. After nearly 40 years of salmon aquaculture in Macquarie Harbour, Strahan is a thriving small community. Most of the village is either directly or indirectly supported by salmon aquaculture. Over 50% of the children attending Strahan primary school have at least one parent working for the salmon aquaculture industry.

Without salmon farming in Macquarie Harbour, Strahan is at significant risk of stagnation and atrophy.

[7] 2020-21 Social Economic Analysis Contributions December 2023 snapshot | IMAS

The Maugean skate in Macquarie Harbour

Maugean skate populations

The Maugean skate is highly adapted to Macquarie Harbour and can tolerate and is regularly exposed to a wide range of DO levels. It is one of few species that can survive chronic hypoxia [<20% DO]) and variable salinities, and it is the only known skate species living exclusively in an euryhaline environment.[8]

DO levels in Macquarie Harbour vary across the year due to changes in temperature, river flow, rainfall and wind levels that affect vertical stratification, oxygen mixing and replenishment.[9] While such seasonality heavily influences conditions experienced by the skate, the daily range of DO concentrations experienced by all individuals, regardless of time of year, is extreme. On average, individuals may experience fluctuations of nearly 50% DO.

Macquarie Harbour: A complex system

Macquarie Harbour is huge; it is six times larger than Sydney Harbour and is second largest natural harbour in the country (behind Port Phillip Bay). The harbour has a naturally low level of DO, caused by a highly stratified water column due to significant freshwater inputs (from the Gordon and King Rivers), a deep central basin (maximum depth ~ 50m), and a shallow sill at its mouth that restricts water exchanges with the ocean (the sill is < 5m). Its depauperate conditions present challenges to all species living in the harbour. It is a complex environment, with multiple factors affecting marine conditions, including DO, within the harbour. Moreno *et al* list hydro, mining, climate change and salmon aquaculture as some of the factors that impact DO levels in Macquarie Harbour.

Moreno and Semmens, in their recently published interim report on the Macquarie Harbour Maugean skate (*Zearaja maugeana*) population status[10], which precipitated the request for a Referral Decision review, stated there was an *ongoing risk* [to skate populations] *of further large-scale declines as a result of sudden, high-impact environmental events*. Two such high impact environmental events occurred in the previous five years, resulting in significant mortalities within a study population of Maugean skates. These environmental events are not linked to the presence of salmon within the harbour.

In acknowledging that salmon aquaculture does impact DO, the size of Macquarie Harbour, the complexity of its environment and the very small footprint of salmon aquaculture (less than 3% of Macquarie Harbour's total surface area.[11]) raises many uncertainties about the magnitude of impact that salmon aquaculture has on DO and harbour health. Furthermore, the maximum magnitude of impact is protected by legislation, supported by best available science, as 30m from the salmon lease.[12]

[8] Moreno et al. (2020) Vulnerability of the endangered Maugean skate population to degraded environmental conditions in Macquarie Harbour | IMAS

[9] Moreno et al. (2020) Vulnerability of the endangered Maugean skate population to degraded environmental conditions in Macquarie Harbour | IMAS

[10] Moreno and Semmens (2023) Interim report - Macquarie Harbour Maugean skate population status and monitoring | IMAS

[11] Aquaculture leases cover 9.24 square km of Macquarie Harbour's total surface area of 315 square km

[12] Review of International Salmon Aquaculture Regulatory Requirements | Tasmanian Government

Ongoing scientific monitoring is refining our understanding of Macquarie Harbour and the impacts attributed to salmon aquaculture.

Managing Macquarie Harbour

SIT fully supports the use of best available science in managing the marine environment. An adaptive management framework ensures that new information influences future management decisions. Aquaculture in Macquarie Harbour is a clear example of how adaptive management works to ensure that salmon aquaculture does not have a detrimental impact on both harbour health and the Maugean skate, whilst also preserving the economic and social benefits of marine farming to Tasmania, particularly the West Coast communities.

The first major study of the Maugean skate was initiated in 2013 by the Institute for Marine and Antarctic Studies (IMAS).[13] This study noted only limited direct interaction between the skate and aquaculture and supported expansion of salmon aquaculture into deeper parts of the harbour as the skate preferred shallower depths, meaning minimal overlap between skate habitat and marine leases. Based on the best science of the day, salmon stocking levels were increased by aquaculture companies. As the issue of low DO in the harbour progressed, salmon stocking levels were reduced, and today they are below the pre-2012 stocking levels.[14]

Moreno and Semmens's 2023 interim report[15] provides another data point for adaptive management efforts. Aquaculture companies are responding to this data point, investing in technology and processes to offset the negative effect salmon aquaculture has on DO levels through nano-bubble technology (see below).

This is adaptive management; as data becomes available, it informs future actions to ensure the future health of Macquarie Harbour and the survival of the skate.

It is worth noting that salmon aquaculture is the only industry sector that contributes to low DO that is investing in a solution to the DO problem.

SIT would also like to invite scientists to consider local fishers as a resource when researching Maugean skate in Macquarie Harbour. Fishers with 50 years of experience in the harbour provide other, albeit anecdotal, data points. In a recent visit to Macquarie Harbour, SIT's Chief Executive spoke to fishers who said the Magean skate moves around the harbour and 'they just need to be found'.

[13] Bell et al. (2016) Movement, habitat utilisation and population status of the endangered Maugean skate and implications for fishing and aquaculture operations in Macquarie Harbour | IMAS

[14] Macquarie Harbour | Salmon Tasmania

[15] Moreno and Semmens (2023) Interim report - Macquarie Harbour Maugean skate population status and monitoring | IMAS

Salmon in Macquarie Harbour

Salmon aquaculture, alongside a number of other factors, does impact DO levels in Macquarie Harbour.

In the 2012 Referral Decision, the Australian Government concluded that salmon stocking numbers at that time did not warrant controlled action. With 2023 stocking numbers at or below 2012 levels, it is hard to conclude that salmon presents a new, emerging, or enhanced risk to levels of DO in Macquarie Harbour. Combined with the future ability of salmon aquaculture to offset its negative impact on DO through nano-bubble technology, it is hard to conclude that salmon aquaculture in isolation will have a significant negative impact on skate populations.

Macquarie Harbour Oxygen Project: a pathway forward

In 2023, Tasmania's three salmon aquaculture companies established a partnership with the Fisheries Research and Development Corporation (FRDC) to use an already established technological solution to stimulate DO levels within the Harbour. As part of the Macquarie Harbour Oxygen Project (MHOP), an oxygenator is located at depth in the middle (deepest) basin of Macquarie Harbour. Very high concentrations of DO will be released as nano and micro bubbles. The size of the bubbles means they stay at depth rather than rise to the surface, slowly diffusing across the harbour, increasing DO levels through the estuary. The effectiveness of MHOP is being independently evaluated by IMAS, but is already a proven technology to reoxygenate water.

The MHOP initiative has three objectives:

1) demonstrate the effectiveness of this technology in Macquarie Harbour
2) offset all oxygen draw down from aquaculture activities in the harbour
3) create a workable solution for managing DO in Macquarie to help mitigate against the long-term impact of climate change.

The MHOP creates a model for future collaborations between government, research and industry to support other at-risk populations around the country.

Conclusion

There is no clear or causal link between salmon aquaculture in Macquarie Harbour and declines in the Maugean skate population. Indeed, the 2023 report upon which the Request was based, fails to identify salmon aquaculture as a key cause, let alone the cause of low DO in the harbour. Regardless, Tasmania's salmon companies are actively working to completely mitigate oxygen consumption by farmed salmon as part of MHOP. This is a positive and effective adaptive management approach to ensure marine aquaculture and the Maugean skate can thrive in Macquarie Harbour.

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