OPEN LETTER TO WES FORD, DIRECTOR, TASMANIAN EPA

SALMON AQUACULTURE IN MACQUARIE HARBOUR: REVIEW OF BIOMASS CONTROLS

Tasmanian Independent Science Council Review & Recommendations: May 2022

We note that the current salmon production biomass limit of 9500 tonnes/yr for combined aquaculture operations in Macquarie Harbour is due to expire at the end of May 2022 and is presumably in the process of being reviewed and revised by the EPA.

Upon our own review of recent studies by IMAS and CSIRO, previous investigations of Macquarie Harbour (e.g. Teasdale et al, 1992; de Blas, 1994; Kirkpatrick et al, 2017), as well as the current environmental licenses for the marine farming leases, we strongly urge the EPA not to increase the current biomass limit, and indeed to reduce it further as a precautionary measure. We recommend this approach for the following reasons:

1. Risks to the endangered Maugean skate due to low oxygen levels may be very high, particularly with respect to survival of eggs and juveniles (Moreno et al, 2020; Bell et al, 2016), and there is no clear long-term monitoring or conservation strategy in place to mitigate this situation. A formal listing statement and recovery plan must be developed to protect this species. It is imperative that this risk be fully addressed and monitored as a condition of current and future levels of marine farming.

2. Serious gaps are manifest in investigations, monitoring and reporting, specifically:
   - As of Jan 2020, dissolved oxygen levels in the water column had not yet fully recovered to pre-expansion levels according to IMAS's final report (Ross et al, 2021). It is not clear why this is the case, or the role that continued fish farming may play; this dilemma is compounded by the lack of more recent public information on oxygen conditions in the Harbour.
   - While we note that some degree of benthic recovery was reported in the final FRDC report by IMAS (Ross et al, 2021), benthic condition has been highly variable, and it is unclear what has happened since Jan 2020, when this monitoring work ceased. Furthermore, no benthic surveys have been carried out during spring conditions (October), when benthic condition has typically been at its worst, since 2017. As such, there has been no documentation of worst-case conditions for nearly five years.
   - Real-time sensors are not required in the monitoring design set out in Environmental Licenses for fish farms in the Harbour, and significant elements of the monitoring and modelling systems originally set up by IMAS and CSIRO have been dismantled. While sensor strings are still being used by the industry for operational purposes, this information is not required to be reported, nor is it publicly available.
   - The current Broadscale Environmental Monitoring Program (BEMP) for Macquarie Harbour is inadequate and requires a major overhaul. Dissolved oxygen is perhaps the single most important issue for the Harbour and requires much more detailed monitoring and management criteria, particularly in intermediate and deep water. Furthermore, the findings of the recent independent BEMP review by the Scottish Association for Marine Science (commissioned by the EPA), should be released for public information, and to better inform the review of the salmon standards that is currently underway.
   - There is no requirement for annual BEMP reports, Annual Environmental Reports or any other public reports to be produced for the Harbour – in contrast to most other marine farming areas in Tasmania. This is essential both to ensure regular compilation and analysis of monitoring data, as well as for public information, transparency and accountability.
   - Potential risks associated with metal-contaminated sediment have not been fully assessed or monitored. Given the heavily contaminated nature of Macquarie Harbour sediments (particularly by copper, Teasdale et al 1992) and the extremely low and variable oxygen levels at depth, this is a major flaw in the monitoring design that needs to be remedied as a matter of priority.

- Implications of climate change have not been addressed, including potential changes in water temperatures, hydrology and power plant operations (particularly with respect to the Gordon hydro scheme).
- Routine monitoring should be contracted to Tasmanian-based operators to avoid disruptions associated with COVID, support local businesses and reduce excessive greenhouse gas emissions associated with frequent flights from overseas.

3. The Environmental Licenses for the ten leases in Macquarie Harbour – issued in 2018 – are no longer fit for purpose as they do not reflect the current scientific understanding of the Harbour. In particular, setting the oxygen criteria at a depth of two metres could result in the death of millions of salmon (and indeed has done so), without exceeding the set limit. These ELs (available on the LIST website) are set to expire in November 2023 and require major modifications to incorporate the points set out above.

4. Similarly, the current Marine Farm Development Plan for Macquarie Harbor (DPIPWE 2005) requires further review and modification to take into account new scientific findings. This could include for example the re-positioning of leases away from areas with poor flushing (including those immediately adjacent to the World Heritage Area of the southern Harbour) and away from the core habitat of the Maugean skate (Liberty Point/Table Head area).

5. The CSIRO model (Wild Allen et al, 2020) should be further refined to enable the setting of more accurate and conservative carrying capacity limits for the Harbour, along with lease-specific biomass, feed or nitrogen limits. Without these, the current 'adaptive management' approach is essentially guesswork and is highly risky in an environment with the extreme variability of Macquarie Harbour.

In summary, the TISC urges the EPA to set more conservative limits on salmon production in Macquarie Harbour until and unless the issues raised above have been addressed. This includes implementation of an improved monitoring design that is written into Environmental Licenses and funded by the industries in question. In particular, clarity is needed regarding potential impacts of low oxygen levels on the endangered Maugean skate, including their reproductive success. ***If existing activities cannot be shown to be harmless, they should be reduced in line with the precautionary principle.***

Yours sincerely

Distinguished Professor Jamie Kirkpatrick AM,

Chair of the Tasmanian Independent Science Council,

on behalf of its members

ABOUT THE TASMANIAN INDEPENDENT SCIENCE COUNCIL

The Tasmanian Independent Science Council is dedicated to science-based policy reform to ensure the long-term health of Tasmania's critical environments. We are composed of scientists and relevant professionals who are a source of independent, non-government advice.

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