

21 March 2023

Department of Natural Resources and Environment Tasmania

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To Whom it May Concern,

The purpose of this submission is to reinforce the importance we place on the principle that the Tasmanian salmonid aquaculture industry be managed and regulated in an environmentally sustainable manner and that information relating to environmental performance should be made available and readily accessible to the Tasmanian public.

Background

The Institute for Marine and Antarctic Studies (IMAS) is a centre of excellence for marine and Antarctic research. Our research cuts across traditional scientific and social scientific boundaries. We are dedicated to enhancing environmental understanding and facilitating thoughtful and sustainable development for the benefit of Australia and the world.

This submission has been made to assist the Tasmanian Government's Department of Natural Resources and Environment (NRE) development of Environmental Standards for Tasmanian Marine Finfish Farming

About the Sustainable Marine Research Collaboration Agreement

The Sustainable Marine Research Collaboration Agreement (SMRCA) supports salmon research funded by the Crown and the University of Tasmania (University).

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 Crown, the University, and to commercial, recreational, and indigenous seafood sectors. IMAS, through the SMRCA, provides science and scientific analysis to the NRE in the management of the salmonid aquaculture industry.

The separation of IMAS from government and industry is important for independence of

our research. Some of IMAS's funding is provided by industry for some production related research, but this is small in magnitude and not part of our core operating resources. Government funds into the SMRCA are secure, long term, and managed by UTAS. Our research outputs are peer reviewed and fearlessly independent.

The submission

The submission supports the principle that the Tasmanian salmonid aquaculture industry should be managed and regulated in an environmentally sustainable manner and that information relating to environmental performance should be made available and readily accessible to the Tasmanian public.

This submission provides comment on several key elements of the Consultation Draft Environmental Standards for Tasmania Marine Finfish Farming 2023 that we believe require greater clarity. Overall, we note the complexity of the Environmental Standards and the associated regulatory framework and the challenge of providing comprehensive feedback when much of the underpinning detail is still to be developed in the associated Technical Standards (and other standards and guidelines). IMAS would welcome the opportunity to provide more detailed comment as the standards are developed.

The key areas for comment are:

Reference Sites

We suggest the current terminology and focus on the establishment of 'reference sites' for detecting and attributing change is likely to lead to confusion. It implies that sites with similar characteristics to a compliance site but unimpacted by finfish activity will be available. However, this will depend on the characteristics of the system (e.g., connectivity), the scale of management and the receiving habitat. For example, there are more likely to be reference sites for monitoring effects at the scale of individual leases, but, if the focus on monitoring for effects at the regional scale (e.g., via the BEMP), then the availability of reference sites/regions may be limited. Similarly, many habitats (e.g., seagrass, reefs) are patchy in distribution and don't necessarily lend themselves to compliance (impact) and reference (control) design. We suggest the focus should be on establishing reference conditions. This may be via comparable sites that are unimpacted by finfish farming activity or from conditions established through the baseline environmental assessment. However, in some circumstances neither may exist (e.g., some existing leases and habitats), and a gradient design and /or other lines of evidence (e.g., model outputs, indicator specificity, timing, proximity, tracers) and benchmarking will be required to attribute change. We acknowledge that this may be accounted for in the draft, but the terminology and conditions are difficult to follow.

It is also evident the establishment of reference sites and values is largely in relation to individual leases and their potential impacts. At the regional scale, there is less detail describing how reference conditions will be established.

Management Zones

The draft Environmental Standards introduce four management zones: farm depositional, dispersal and regional. We acknowledge the importance of the inclusion of the dispersal zone to help distinguish between the effects of particulate versus dissolved wastes and their likely scales of influence. However, as presented and described, this is likely to lead to confusion. As discussed in the section below, the existing environmental standard conditions in Environmental Licenses relate to the depositional zone (and the lease area) and they are often interpreted as a requirement that there are no effects outside the depositional zone (35m from the lease boundary). In Division 4 Seabed, there is no mention of the depositional zone, and the purpose statement might be interpreted as extending the zone of allowable effects of particulate wastes from 35 to 135m from the lease boundary. Clarifying where compliance sites will be located relative to these 2 boundaries will help alleviate this confusion.

Terminology around impacts

Current environmental licenses state that 'there must be no significant visual, physico-chemical or biological impacts at or extending beyond 35m meters from the boundary of the Lease Area'. The existing conditions regarded as significant are all related to the benthic soft sediment environment. In some cases, there are also conditions for water quality with investigative trigger limits specified. It is important to see the inclusion of other important receiving habitats (e.g., inshore reefs) in the draft. However, the terminology around what constitutes a significant impact requires greater clarity. Terminology in the draft and explanatory paper includes 'do not significantly impact', 'being significantly altered' and definition of management zones note that effects are likely to be measurable. The use of the word significant may also lead to confusion because in some places, statistical significance is implied. It is typically acknowledged in the modelling of both particulate waste deposition and dissolved waste dispersion during the EIS process that both forms of waste will be dispersed beyond the proposed boundaries in the draft (35m and 135m from lease boundary respectively), and as such it is to be expected that change will be measurable outside these boundaries should the monitoring have sufficient statistical power. As such, using terms such as 'measurable' or 'significant' is potentially fraught and greater focus and consideration should be given to describing the level of change that is considered acceptable (or unacceptable). At the

moment the public often interpret the existing conditions to mean that there must be no effects outside of 35m, but this clearly isn't the intent given the conditions. We accept this is a challenge to navigate and explain in a Standards document, but more detail in an associated explanatory paper would be warranted.

Public reporting

The draft Environmental Standards do not appear to provide conditions for public reporting. As per the IMAS submission on the draft 10-year plan for salmonid aquaculture in Tasmania, we regard it essential that information related to the environmental performance of the salmonid industry from monitoring programs, including baseline assessments should be transparent, accessible, and regularly communicated to the Tasmanian community.

Habitat and key species

The Broad Scale Environmental Monitoring Program (Division 3) describes the habitats that could be required to be monitored. We suggest that potential requirement for the monitoring of key species (e.g., mobile invertebrates, commercial, threatened and endangered species) and communities be included and made more explicit.

Light and Noise

The draft standards for both light and noise standards are based on humans and nuisance levels, however, we recommend that standards around how these two factors affect marine animals be included.

The National Light Pollution Guidelines for Wildlife (DEE, 2020 in Beecroft et al. 2020) provide recommendations for limiting the impact of light pollution on animals. These guidelines are in the context of monitoring and managing the effects of artificial lights on species that are threatened and migratory, part of a listed ecological community, or protected under state or territory legislation for which artificial light has been demonstrated to affect behaviour, survivorship or reproduction. This includes best practices for light design, and species-specific technical reports of marine turtles, seabirds, and migratory shorebirds.

To address the key challenges in measuring and monitoring the effects of underwater noise, the International Electrotechnical Commission (IEC) Technical Committee 114, which develops international standards for marine energy conversion technologies, developed technical specifications for characterising and mitigating radiated underwater noises from marine renewable energy platforms (IEC TS 62600-40) (International Electrotechnical Commission [IEC], 2019 in Beecroft et al. 2020). The next edition is

expected in 2024, whereby the previous edition will be superseded (Copping et al., 2020 in Beecroft et al. 2020).

In addition to these guidelines, collection of baseline data on the background light and noise is critical prior to establishment of aquaculture sites.

Other specific items for comment:

- PART 2 Division 1 Reference Sites and Reference Values: Purpose – we note that there is no mention of plankton communities and their protection in the regional zone.
- PART 4 Division 2 Mapping and Monitoring Stations - Management Zone Maps: there is a requirement to show depth contours. We recommend this should include habitats given their location is critical to the design of an effective monitoring program. This would also be reflected in the purpose statement.
- PART 4 Division 2 Mapping and Monitoring Stations - 1b provides for the lease holder to make recommendations for the location of monitoring stations. Is this appropriate given elsewhere it is clear that the director will specify the locations of monitoring stations.
- PART 4 Division BEMP: 3 g) should 'further investigative environmental surveys' be rephrased given that it might entail modelling for example.
- PART 4 Division 4 Seabed: Farm Zone 1) 'a licence holder must ensure there is no spontaneous gas bubbling'. To avoid ambiguity, we recommend upon disturbance is included because the conditions required for spontaneous gas bubbling without disturbance are typically quite extreme. Similarly, we suggest what constitutes and excessive feed spillage or extensive bacterial mat are defined.
- PART 5 DIVISION 2 Finfish Pens: the minimum distance of 1m above the sea floor, is the international best practice? This is not likely to be optimal for allowing sufficient flow and promoting benthic health and assimilatory capacity.
- PART 5. We note that conditions on the recording and reporting requirements for finfish escapees are currently not included.
- PART 2 DIVISION 4 Seabed: Regional Zone 1b) remove the focus on deep reefs only, suggest changing this provision to "a change in the composition of reef communities and/or abundance of key taxa".

- PART 2 DIVISION 4 Seabed: Regional Zone 1) “Is measure compared to reference values at reference sites”. As discussed elsewhere, habitat or data may not exist to establish these, with reference values needing to be constructed in other ways. Suggest changing phrase to “established reference conditions” instead.

Kind regards

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Environmental Interactions Program
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