Environmental Defenders Office

Submission in response to the Draft Aquaculture Standards for Tasmania

20 June 2022

About EDO

EDO is a community legal centre specialising in public interest environmental law. We help people who want to protect the environment through law. Our reputation is built on:

Successful environmental outcomes using the law. With over 30 years' experience in environmental law, EDO has a proven track record in achieving positive environmental outcomes for the community.

Broad environmental expertise. EDO is the acknowledged expert when it comes to the law and how it applies to the environment. We help the community to solve environmental issues by providing legal and scientific advice, community legal education and proposals for better laws.

Independent and accessible services. As a non-government and not-for-profit legal centre, our services are provided without fear or favour. Anyone can contact us to get free initial legal advice about an environmental problem, with many of our services targeted at rural and regional communities.

Environmental Defenders Office is a legal centre dedicated to protecting the environment.

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Department of Natural Resources and Environment Tasmania

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Acknowledgement of Country

Environmental Defenders Office (**EDO**) recognises First Nations peoples as the Custodians of the land, seas and rivers of Australia. We pay our respects to Aboriginal and Torres Strait Islander Elders past, present and emerging, and aspire to learn from traditional knowledge and customs so that, together, we can protect our environment and cultural heritage through law.

In providing this submission, we pay our respects to First Nations across Australia and recognise that their Countries were never ceded and express our remorse for the deep suffering that has been endured by the First Nations of this country since colonisation.

Executive Summary

While EDO welcomes the invitation to comment on three proposed aquaculture standards to govern the operation of aquaculture in the state's waters, including an Environmental Standard for Marine Finfish Farming, we note that consultation on a Bill to amend the *Environmental Management and Pollution Control Act 1994* (**EMPC Act**) to give effect to an independent EPA and create a legislative basis for making Environmental Standards recently closed.

EDO's submission on the draft Environmental Management and Pollution Control Amendment Bill 2022 provided detailed feedback on what we consider to be the critical features of a modern and best practice EPA and on how the proposed new Environmental Standards should be framed and operate.[1] While EDO is generally supportive of the proposal to create enforceable Environmental Standards for the finfish farming industry, we consider it preemptory for the Department to be consulting on what it proposes to be in the Environmental Standards before that Bill has been passed by Parliament. To ensure the Draft Environmental Standard is consistent with the legislation passed by Parliament, it would have made more sense for the Bill to be enacted before any consultation on the Environmental Standards commenced. For this reason, EDO asks that the following submission be read in light of our recommendations in response to the draft Bill.

This submission responds to the Draft Environmental Standard for Marine Finfish Farms (**Draft Environmental Standard)** as foreshadowed in the position paper (**Position Paper**) and to the Draft Standardised Marine Farming Management Controls (**Controls**) and related background paper (**Background Paper**) (as they relate to finfish farming). EDO considers that it is not convenient to provide separate submissions for the Draft Environmental Standard and the Controls, as our recommendations are necessarily interrelated given the overlap between these proposed regulatory documents.

[1] A copy of EDO's submission can be accessed on our website here: https://www.edo.org.au/publication/edo-submission-on-the-draft-environmental-management-and-pollution-control-amendment-bill-2022/

EDO's submission also responds to broader concerns around the regulation of Tasmania's finfish farming industry, particularly in light of the Legislative Council Sub-Committee Report on Finfish Farming in Tasmania dated 19 May 2022 (**Finfish Farming Report**).

EDO welcomes the Tasmanian Government's commitment to the adoption of international best-practice environmental management to protect Tasmania's marine environment. To this end, the Government has recently commissioned several reports comparing Tasmania's regulation of the salmon industry to international best practice.[2] While some of these reports have been released to the public ahead of the release of the draft aquaculture standards,[3] it is disappointing that other reports which would have been helpful to inform public comment on how the draft aquaculture standards meet international best practice - such as the Cawthron Institute's review of the EPA's review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture - have not similarly been released.

In EDO's view, despite the Government's stated intention, it is unlikely the Draft Environmental Standard and the Controls will be consistent with best practice environmental management in their presently proposed form. Given the findings and recommendations of the Finfish Farming Report, it is clear that a genuine commitment to world's best practice environmental management requires substantial reform to the current regulation of finfish farms in Tasmania.

While we note that the Government is yet to formally respond to the recommendations of the Finfish Farming Report, EDO is generally disappointed by the lack of ambition for improvement signalled in the preparation of both the Draft Environmental Standard and the Controls. We are further concerned that if the Draft Environmental Standards and Controls proceed without significant change no substantial improvement to current practice could reasonably be expected. Such an outcome is not in the interests of the environment, community or the finfish farming industry.

EDO's submission is arranged under the following headings:

1. General Comments
    1.1. Integrated and ecosystem-based management
    1.2. Performance based management and the appropriateness of an adaptive management approach
    1.3. Enforcement
2. Environmental Standard for Marine Farming in Tasmania
    2.1. Objectives of Environmental Standard
    2.2. Management of the effects of Finfish Farming on the Marine Environment
    2.3. Focus areas proposed to be addressed in the Environmental Standard

[2] These reports include the Cawthron Institute's review of the EPA's review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture and the Scottish Association for Marine Science's review of several of Tasmania's Baseline Environmental Monitoring Programs.
[3] Including the *Review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture* and the *International expert review of the BEMP for the Huon Estuary and D'Entrecasteaux Channel*.

A summary of EDO's recommendations under each heading outlined in this submission can be found below.

1. General comments

Recommendation 1: All recommendations of the Finfish Farming Report be implemented.

1.1. Integrated and ecosystem-based management

Recommendation 2: An overarching management and planning framework be developed and legislated for Tasmania with the aim of integrated and ecosystem-based planning and management across the entire marine and coastal environment. This framework should include a comprehensive marine spatial planning process and inform any proposed changes to the *Living Marine Resources Management Act 1995,* the EMPC Act and the new 10-Year Salmon Plan.

1.2. Performance-based management and the appropriateness of an adaptive management approach

Recommendation 3: Enforceable criteria prescribing when adaptive management can be used should be developed. These criteria should include a clear statement that adaptive management is not to be used in the absence of sufficient baseline monitoring or where the impacts of finfish farming may be serious or irreversible. A precautionary approach to the management of finfish farms is adopted in the absence of these enforceable criteria.

1.3. Enforcement

Recommendation 4: The EPA develop and publish an enforcement policy relating to finfish farms which clearly sets out its expectations and the situations where it may use the enforcement tools it has available. The enforcement guidelines should include scientifically

based performance indicators, identify a scale of enforcement actions, and indicate which actions will be taken in response to the failure to meet those indicators (including graded increases in enforcement activity for repeat offenders).

Recommendation 5: All enforcement actions be reported by the EPA through real-time reporting in a central record published online.

Recommendation 6: The *Marine Farming Planning Act 1995* be amended to enable third parties to seek redress for any breaches of environmental controls or standards through civil enforcement proceedings to the Tasmanian Civil and Administrative Tribunal.

2. Environmental Standard for Marine Finfish Farming in Tasmania

Recommendation 7: The Draft Environmental Standard should be clear and certain and based on the best available science. It should also limit discretions given to the EPA Director and prescribe science-based criteria for the exercise of those powers.

2.1. Objectives of the Environmental Standard

Recommendation 8: The objectives of the Draft Environmental Standard be amended to align with the objectives of the EMPC Act, including the objectives of sustainable development, maintenance of ecological processes and genetic diversity, protecting and enhancing the Tasmanian environment and the adoption of a precautionary approach.

Recommendation 9: The first objective of the Draft Environmental Standard be "Document standardised environmental monitoring protocols to assess environmental compliance of marine finfish farming that are practical, based on the best available science, cost effective and appropriate for Tasmania".

Recommendation 10: The second objective of the Draft Environmental Standard be "Consistent with the best available science and the *State Policy on Water Quality Management 1997* identify and publish appropriate environmental indicators and acceptable trigger levels for the assessment of environmental conditions and detection of environmental effects".

Recommendation 11: The third objective of the Draft Environmental Standard be "Ensure sustainable management of marine finfish farming where environmental degradation and adverse risks to human and ecosystem health are prevented and pollutants and hazardous emissions from finfish farms are regulated, reduced or eliminated to maintain environmental quality."

Recommendation 12: The fourth objective of the Draft Environmental Standard be "transparency of environmental management and industry accountability for environmental health through the timely publication of monitoring reports accessible to the public."

2.2. Management of the effects of finfish farming on the Marine Environment

Recommendation 13: The Draft Environment Standard recognise caps on finfish biomass, stocking density and particulate and nitrogen pollution imposed through reformed Marine Farming Management Controls (refer to recommendations 17 and 39 below).

2.3. Focus areas proposed to be addressed by the Draft Environmental Standard

2.3.1. Establishing Management Zones

Recommendation 14: The Management Zones in the Draft Environment Standard provide that the Regional Area is to be defined by reference to the best available science and that it provides for "The broader environment extending beyond the boundary of the Depositional Effect Zone boundary where there are to be no adverse effects on marine biodiversity or environmental quality referable to finfish farming."

2.3.2. Management Zone Charts and Monitoring Stations

Recommendation 15: Particulate depositional and nutrient/biogeochemical modelling for new or expanding finfish farms should be undertaken at the Marine Farming Planning stage and should be publicly available and clearly state their underlying assumptions and indicate the limitations, including in the environmental data that has been used to inform them.

Recommendation 16: Modelling required for existing finfish farms under the Draft Environmental Standard should be publicly available and should clearly state their underlying assumptions and indicate the limitations, including in the environmental data that has been used to inform them.

2.3.3. Managing Finfish Production

Recommendation 17: Caps on maximum finfish biomass, stocking density, particulate wastes and dissolved nutrients permitted to be released to the marine environment should be imposed in MFDPs through amended Controls, and not in the proposed Environmental Standards (refer to recommendations 13 above and 39 below).

Recommendation 18: The Draft Environmental Standard provide guidance on how the EPA Director can set to set biomass, stocking density and pollution limits *below* caps mandated in the MFDPs to respond to changes in environmental conditions. This guidance should include clear criteria and be informed by the best available science and the precautionary principle.

2.3.4. Survey Scheduling Requirements

Recommendation 19: The Draft Environmental Standard provide survey scheduling requirements in line with international best practice, and the best available science.

2.3.5. Baseline Environmental Assessment

Recommendation 20: Shoreline monitoring and mid-range and distal monitoring locations (chosen on the basis of hydrodynamic and biogeochemical modelling) should be included in baseline environmental assessments required under the Draft Environmental Standard.

2.3.6. Farm Zone Seabed Monitoring

Recommendation 21: The Draft Environmental Standard should require sediment redox potential, sulfide concentration in sediment and concentrations of nitrate, ammonium, phosphate and dissolved oxygen at bottom waters to be included in monitoring at the Farm Zone level.

Recommendation 22: The Draft Environmental Standard should set out seabed scoring criteria in relation to the observation of both Farm Zone and Depositional Effect Zones.

Recommendation 23: The Draft Environmental Standard should include requirements about how many monitoring stations should be located at the Farm Zone level based on the international examples provided in the *Review of Tasmanian and International Regulatory Requirements*, scaled up or down depending upon the biomass within the lease and its area.

2.3.7. Depositional Effect Zone Boundary Monitoring

Recommendation 24: The Draft Environmental Standard should set the Depositional Effect Zone boundary located at a distance from the finfish farm identified by the best available science as providing a good indication of the impacts of the finfish farm.

Recommendation 25: The Draft Environmental Standard should require that ecosystem quality and biodiversity outside the Depositional Effect Zone should show no adverse effects referable to finfish farming (see also recommendation 14).

Recommendation 26: The Draft Environmental Standard should not allow for reduced environmental monitoring as an incentive for compliance unless the EPA can be satisfied that the reduced monitoring regime will still allow cumulative impacts, trends in environmental conditions and the effectiveness of management actions to be properly understood.

Recommendation 27: The Draft Environmental Standard survey requirements for the Depositional Effect Zone should also identify water quality monitoring triggers (based on the Water Quality Objectives for the area) to identify unacceptable impacts of finfish farming outside the Depositional Effect Zone.

Recommendation 28: The Draft Environmental Standard should require more regular video monitoring cycles based on the best available science.

Recommendation 29: The Draft Environmental Standard should outline appropriate management and/or enforcement responses to be taken in the event that Depositional Effect Zone boundary monitoring triggers are breached.

2.3.8. Broadscale Environmental Monitoring Program

Recommendation 30: The Draft Environmental Standard broadscale environmental monitoring program requirements should align with the best available science and include the tracking of balance of organisms indicators and provide for monitoring to identify cumulative contributions to area-based limits (such as MFDP-wide nitrogen caps).

2.3.9. Noise Monitoring and Assessment

Recommendation 31: The Draft Environmental Standard cover noise generated by boats traveling to and from finfish farms and set default noise levels to protect community and ecosystem health which may be varied where ambient monitoring at a particular location shows lower limits are warranted.

Recommendation 32: Finfish farms be required to maintain records of each noise complaint received and be required to produce these records upon request to the EPA.

2.3.10. Artificial Lighting

Recommendation 33: Finfish farms should be required to engage a light pollution expert to establish a Light Attenuation Management Plan for the approval of the Director and management plans must incorporate descriptions of all light sources (including temporary sources such as from vessels), assess risk, outline monitoring and management actions to mitigate the effects of light associated with marine finfish aquaculture to ensure effects on the environment and community are kept to a minimum.

Recommendation 34: Finfish farms should be required to maintain records of each light complaint received and be required to produce these records upon request to the EPA.

2.3.11. Therapeutant and Disease Management

Recommendation 35: The Draft Environmental Standard require records of therapeutant use and disease incidence, and environmental monitoring to be annually reported and these reports should be available to the public.

2.3.12. Escapes and Mortality Events

Recommendation 36: The Draft Environmental Standard require all records of escapes and mortality events to be publicly available and reported in a timely manner.

Recommendation 37: The Draft Environmental Standard should provide for the management of the environmental impacts of fish escapes, and fines should be imposed where escaped fish are not recovered.

2.4. Commitment to independent regulation

Recommendation 38: The EPA commit to the release of all relevant environmental information and data concerning finfish farming, including plans, records and monitoring required under conditions of permits, environmental licences or Environmental Standards.

3. Draft Standardised Marine Farming Management Controls

Recommendation 39: Caps on maximum finfish biomass, stocking density, particulate wastes and dissolved nutrients permitted to be released into the marine environment should be imposed in the Controls for all MFDPs. These caps should be set for each MFDP based on the best available science and modelling which is directed at avoiding, minimising or mitigating adverse environmental impacts (refer to recommendations 13 and 17 above)

Recommendation 40: The recommendations relating to the proposed Controls outlined in **Table 1** be implemented.

1. General comments

Tasmania's finfish farming industry has rapidly expanded since it was first established. Between 1998-99 and 2020-21, production of farmed salmon in Tasmania increased from 11,000 tonnes to 66,000 tonnes, and the industry now has an estimated gross annual value of more than $931

million.[4] Despite the finfish farming industry's economic success, its expansion has not been without controversy. Concerns have been raised about habitat modification (including for listed threatened species), marine floor degradation, reduced water quality, pests and disease, wildlife interactions and algal blooms. Communities and landholders adjacent to marine farming leases report reduced amenity resulting from noise and light from the fish farms, while recreational water users like sailors are concerned about marine farm debris and infrastructure causing navigation hazards and pollution. Onshore, concerns are being raised about the impacts of flow-through finfish hatcheries on adjacent waterways, odours from fish processing plants, and the use of precious freshwater resources for finfish disease prevention.

The Tasmanian Government has stated its intention in developing the aquaculture standards is to ensure the adoption of international best practice environmental management when it comes to marine finfish farming. **In EDO's view, the draft aquaculture standards released for public comment do not achieve best practice.** Indeed, in many ways, they "lock in" the existing lax regulatory practices and standards which have been the subject of intense public scrutiny in recent years, particularly in the Legislative Council Sub-Committee Inquiry into Finfish Farming.

That Inquiry heard from hundreds of people, including from the general community, environmental groups, the finfish farming industry and regulators. Its final report made numerous findings concerning the inadequacies of the regulation of the industry, its lack of transparency and lack of community confidence and support. The Inquiry made a comprehensive set of recommendations to respond to the issues identified. EDO urges the Tasmanian Government to implement the recommendations made in the Finfish Farming Report to ensure:

- there are clear legislative criteria for decision-making is included in the *Marine Farming Planning Act 1995* and the EMPC Act*;*
- the separation of regulatory and development roles for decision-makers concerned with finfish farming;
- there is evidence-based decision-making, including avoiding an over-reliance on adaptive management;
- there is public participation and merits review for decisions concerning finfish farming;
- there is greater access to information (including the publication of scientific studies, baseline and monitoring data) to facilitate independent scrutiny of this data; and
- there is rigorous, consistent and transparent monitoring and enforcement of finfish farming.

Recommendation 1: All recommendations of the Finfish Farming Report be implemented.

[4] Department of Agriculture, Water and the Environment, ABARES, 2021, *Australian fisheries and aquaculture statistics 2020*, https://www.awe.gov.au/abares/research-topics/fisheries/fisheries-and-aquaculture-statistics#download-full-report.

There are three elements concerning the appropriate finfish farming management and regulation that EDO considers are worth exploring at a high level before detailed comments are provided on the proposed aquaculture standards. They are:

1. Integrated and ecosystem-based management;
2. Performance-based management and the appropriateness of an adaptive management approach; and
3. Enforcement.

1.1. Integrated and ecosystem-based management

Tasmania's legislative arrangements provide for separate assessment frameworks for marine farming and other use and development, including land-based aquaculture. Current, sector-based approaches to coastal and marine management have been observed as being deficient because:[5]

1. the management of activities that overlap or interact in the coastal marine environment is undertaken by different agencies using different approaches;
2. management is generally focused on a subset of objectives and does not properly articulate institutional objectives that make up a comprehensive view of management;
3. there is no mechanism to evaluate or advise on trade-offs among objectives or between activities in relation to objectives; and
4. there is no mechanism for evaluating the cumulative effects of all managed activities.

The deficiencies of the sector-based approach to marine management are exemplified by the way the Department of Natural Resources and Environment (**NRE**) is currently managing multiple consultations relating to components of Tasmania's marine legislation (such as reforms to the *Living Marine Resources Management Act 1995* and the EMPC Act and the new 10-Year Salmon Plan) concurrently, without any apparent consideration of all the ways the reforms and policies with which the consultations deal intersect.

In comparison to Tasmania, other jurisdictions with intensive finfish farming, such as Scotland, New Zealand and Norway, have adopted a more integrated approach to marine farming planning and emphasise environmental protection in the coordinated assessment process.

In EDO's view, all of Tasmania's overlapping marine laws and policies should be pulled into a coherent and effective overarching marine and coastal management and planning framework that critically provides for a marine spatial planning process. This framework would aim to achieve integrated and coordinated planning and management across the entire marine environment

[5] Stephenson, R. Hobday, A., Cvitanovic, C., Alexander, K., Begg, G., Bustamante, R., Dunstan, P., Frusher, S., Fudge, M., Fulton, E., Haward, M., Macleod, C., McDonald, J., Nash, K., Ogier, E., Pecl, G., Plagányi, E., van Putten, I., Smith, T. & Ward T. (2019) 'A practical framework for implementing and evaluating integrated management of marine activities' *Ocean & Coastal Management*, Volume 177, pp 127-138 at 135.

rather than the current piecemeal approach that does not allow for proper consideration of all of the benefits and risks of different uses and management approaches. EDO notes that such a framework aligns with the primary Finfish Farming Report recommendations for an overarching Marine Plan for Tasmania and a comprehensive marine spatial planning process to provide the basis for identifying potential finfish farming areas.[6]

Recommendation 2: An overarching management and planning framework be developed and legislated for Tasmania with the aim of integrated and ecosystem-based planning and management across the entire marine and coastal environment. This framework should include a comprehensive marine spatial planning process and inform any proposed changes to the *Living Marine Resources Management Act 1995,* the EMPC Act and the new 10-Year Salmon Plan.

1.2. Performance-based management and the appropriateness of an adaptive management approach

An adaptive management approach has been used for regulating the environmental performance of salmon farming in Tasmania for the past 20 years. EDO considers that an adaptive management approach is only appropriate where:

1. comprehensive baseline environmental data is available;
2. explicit triggers/thresholds for management action are stipulated;
3. comprehensive and regular monitoring is undertaken;
4. enforcement actions are taken when environmental triggers are breached; and
5. monitoring is undertaken to identify if the management response is producing the desired effect.

EDO is concerned that adaptive management has been the approach taken for Tasmanian finfish farms in circumstances where none of these conditions has been fully met. The best example of this approach, and its pitfalls, was when the finfish farming industry rapidly expanded in Macquarie Harbour in 2013, notwithstanding there being insufficient baseline data, inappropriate and inaccurate modelling, and a lack of clarity around the trigger points and management actions to be applied in the event of deteriorating conditions. The over-reliance on adaptive management in the absence of adequate data, models, and regulatory clarity resulted in degradation of water quality and large areas of the harbour floor, including within the Tasmanian Wilderness World Heritage Area, putting the critically endangered Maugean Skate at even greater risk of extinction.[7]

EDO considers that a precautionary approach rather than an adaptive approach is more appropriate in instances where impacts of the activities are potentially serious or irreversible (such as loss of critically endangered species) or where too little is known to reliably anticipate

[6] See recommendations 1,2 and 12 of the Finfish Farming Report.
[7] A detailed outline of these events can be found in a case study in EDO Submission on the Draft Environmental Management and Pollution Control Amendment Bill 2022, which can be accessed here: https://www.edo.org.au/publication/edo-submission-on-the-draft-environmental-management-and-pollution-control-amendment-bill-2022/

risks. Indeed, adopting a precautionary approach in environmental decision-making is one of the primary objectives of the Environmental Management and Pollution Control System specified in the EMPC Act.

We also note that the importance of clarifying what is meant by a precautionary approach and an adaptive management approach was one of the issues taken up in the Finfish Farming Report. That Report recommended that the Tasmanian Government:

1. Clarify the application of a precautionary approach in the *Marine Farming Planning Act 1995,* including in the approval of Marine Farming Development Plans;[8]
2. Clarify the application of an adaptive management approach to regulation of finfish farming in the *Marine Farming Planning Act 1995*;[9]
3. Develop a framework for an adaptive management approach for the fin fish farming industry, which includes validated models, performance monitoring, clear triggers for management, regular review and transparent reporting. Until such a framework is adopted, ensure the precautionary principle is individually applied to finfish farming operations.[10]

Recommendation 3: Enforceable criteria prescribing when adaptive management can be used should be developed. These criteria should include a clear statement that adaptive management is not to be used in the absence of sufficient baseline monitoring or where the impacts of finfish farming may be serious or irreversible. A precautionary approach to the management of finfish farms is adopted in the absence of these enforceable criteria.

1.3. Enforcement

Best practice environmental standards and marine farming management controls are only effective if they are actively and consistently enforced. While there are several enforcement options under the EMPC Act, *Marine Farming Planning Act 1995* and *Living Marine Resources Management Act 1995*, we are concerned that many observed breaches of current salmon farming permits, plans, and licences go unpunished, or the fines imposed are inadequate to deter future environmentally reckless behaviour. The Finfish Farming Report raised serious concerns about the inadequacies of penalties, finding that the penalties for the breach of environmental regulations in Tasmania are set at lower levels than in some other jurisdictions. It recommended there should be a review of the penalties and scope of liability in the regulation of finfish farming to reflect the serious environmental consequences that can arise from breaching regulations and to strengthen their deterrent effect.[11]

Without more consistent and effective enforcement of environmental standards and regulations by regulators, there is little incentive for marine farming operations to achieve, much less exceed, their obligations relating to the environment and the community. To ensure that enforcement

[8] Recommendation 51 of the Finfish Farming Report.
[9] Recommendation 52 of the Finfish Farming Report.
[10] Recommendation 53 of the Finfish Farming Report.
[11] Recommendation 48 of the Finfish Farming Report.

actions are effective, and consistently applied, we recommend that the EPA develop and publish an enforcement policy relating to marine farms which clearly sets out its expectations and the situations where it may use the enforcement tools it has available. The enforcement guidelines should include scientifically based performance indicators, identify a scale of enforcement actions, and indicate which actions will be taken in response to the failure to meet those indicators (including graded increases in enforcement activity for repeat offenders). We note that this recommendation was adopted in the Finfish Farming Report.[12]

Recommendation 4: The EPA develop and publish an enforcement policy relating to finfish farms which clearly sets out its expectations and the situations where it may use the enforcement tools it has available. The enforcement guidelines should include scientifically based performance indicators, identify a scale of enforcement actions, and indicate which actions will be taken in response to the failure to meet those indicators (including graded increases in enforcement activity for repeat offenders).

Furthermore, EDO considers that is not enough for the EPA to be monitoring of impacts of finfish farms to be undertaken without consistent action under its guidelines where monitoring reveals that performance indicators are not met. All enforcement actions should also be reported by the EPA through real-time reporting in a central record published online, for example on the Salmon Portal. This would enable the public to have a clearer picture of when enforcement action is being taken.

Recommendation 5: All enforcement actions be reported by the EPA through real-time reporting in a central record published online.

Civil enforcement in an administrative tribunal is one of the components of public participation, enabling effective redress for environmental harm. There are, however, no third-party rights to enforce breaches of management controls of a Marine Farming Development Plan (**MFDP**). We believe it would be appropriate for the *Marine Farming Planning Act 1995* to be amended to enable third parties to seek redress for any breaches of environmental controls or standards through civil enforcement proceedings to the Tasmanian Civil and Administrative Appeals Tribunal.

Recommendation 6: The *Marine Farming Planning Act 1995* be amended to enable third parties to seek redress for any breaches of environmental controls or standards through civil enforcement proceedings to the Tasmanian Civil and Administrative Tribunal.

2. Environmental Standard for Marine Finfish Farming in Tasmania

In our submission in response to the Draft Environmental Management and Pollution Control Amendment Bill 2022, EDO recommended that any Environmental Standards should be:

- clearly prescribed and certain;
- based on the best available science;

[12] Recommendation 49 of the Finfish Farming Report.

- published in a timely manner; and
- reviewed regularly.

We also advocated changes to the draft Bill to:

- make it clear that Environmental Standards may be made for the purpose of assisting in avoiding, minimising, remedying and offsetting potential environmental harm, and/or giving effect to best practice environmental management;
- reduce the level of discretion given to the Board and/or the Director to vary provisions at will and with no criteria or opportunities for public comment or appeal;
- include a requirement that Environmental Standards be consistent with the best available science, Emissions Reduction Target, and any sector-based emissions reduction and resilience plans made under the *Climate Change (State Action) Act 2008*, as amended from time to time; and
- include requirements for reviews of Environmental Standards to be undertaken on a 5-yearly basis; public submissions to the review of Environmental Standards and the consideration of those submissions by the Minister; and criteria for the Minister's decision on whether the standard should be amended or revoked, including whether it is still consistent with their purpose.

In our view, the Draft Environmental Standard as foreshadowed in the Position Paper is unlikely to be clearly prescribed and certain and does not appear to be based on the best available science. Nor does it provide for environmental harm from finfish farms to be avoided, minimised, remedied or offset. Furthermore, what is proposed appears to give far too much discretion to the EPA Director to determine the parameters of finfish farming in Tasmania, particularly taking account of the fact that:

- there are no science-based criteria for the exercise of discretions (such as to set biomass and pollution limits) proposed to be provided in the Draft Environmental Standard;
- there will be no opportunities for public comment or appeals in relation to the application of the Draft Environmental Standards or decisions made under it; and
- there is no guarantee that the EPA Director will provide any reasons for decisions made under the Draft Environmental Standard.

Recommendation 7: The Draft Environmental Standard should be clear and certain and based on the best available science. It should also limit discretions given to the EPA Director, and prescribe science-based criteria for the exercise of those powers.

2.1. The objectives of the Environmental Standard

The position paper proposes that the Draft Environmental Standard has the following objectives:

- document standardised environmental monitoring protocols to assess environmental compliance of marine finfish farming that are practical, cost effective and appropriate for Tasmania;
- identify appropriate environmental indicators and acceptable trigger levels for the assessment of environmental conditions and detection of environmental effects;
- encourage sustainable management of marine finfish farming whereby adverse environmental and community impacts of finfish farming are minimised or mitigated through timely detection and response to emissions and environmental nuisance; and
- increase transparency of environmental management and industry accountability for environmental health through publicly accessible monitoring reports.

EDO considers that the proposed objectives for the Draft Environmental Standard are lacking in ambition, clarity and alignment with the objectives of relevant legislation.

Given the proposal for the Environmental Standards to be given effect under amendments to the EMPC Act the objectives of the Draft Environmental Standard should be more reflective of the objectives of the Resource Management and Planning System contained in the EMPC Act and include an objective of promoting the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity.

The Draft Environmental Standard should also reflect the Environmental Management and Pollution Control System objectives, including:

- protecting and enhancing the quality of the Tasmanian environment; and
- adopting a precautionary approach when assessing environmental risk to ensure that all aspects of environmental quality, including ecosystem sustainability and integrity and beneficial uses of the environment, are considered in assessing, and making decisions in relation to, the environment.

Recommendation 8: The objectives of the Draft Environmental Standard be amended to align with the objectives of the EMPC Act, including the objectives of sustainable development, maintenance of ecological processes and genetic diversity, protecting and enhancing the Tasmanian environment and the adoption of a precautionary approach.

In relation to the objectives as currently outlined in the Position Paper, EDO considers that the first objective of the Draft Environmental Standard should be amended to incorporate a requirement that the standardised environmental monitoring protocols are scientifically proven. This requirement is aligned with the Cawthron Institute's description that a good environmental monitoring program must: [13]

[13] Knight, B., Forrest, B. & Johnston, C. 2015, *Macquarie Harbour Environmental and Fish Health Monitoring Review*. Prepared for Department of Primary Industries, Parks, Water and Environment Tasmania. Cawthron Report No.2729.

- measure something directly relevant and interpretable, and be consistent with our present understanding of the effects of the activity;
- be scientifically defensible; and
- be easily measured and cost-effective using standard techniques.

Recommendation 9: The first objective of the Draft Environmental Standard be "Document standardised environmental monitoring protocols to assess environmental compliance of marine finfish farming that are practical, based on the best available science, cost effective and appropriate for Tasmania".

The Position Paper states that "It is the Government's intention that the proposed Environmental Standard will transparently set out the monitoring and management parameters to be applied consistently to marine finfish farms across the State." Consistent with that intent, and with the findings and recommendations of the Finfish Farming Report,[14] EDO agrees there must be greater transparency around how the environmental indicators and trigger levels for finfish farms are set by the EPA, and how they align with Water Quality Objectives set under the binding *State Policy on Water Quality Management 1997*. EDO, therefore, recommends that the proposed second objective of the Draft Environmental Standard be amended to require that environmental indicators and triggers levels be set in accordance with the best available science and the *State Policy on Water Quality Management 1997* and be publicly available.

Recommendation 10: The second objective of the Draft Environmental Standard be "Consistent with the best available science and the *State Policy on Water Quality Management 1997* identify and publish appropriate environmental indicators and acceptable trigger levels for the assessment of environmental conditions and detection of environmental effects".

As presently drafted, the third proposed objective for the Draft Environmental Standard does not reflect the objects of the EMPC Act, and in particular, the following objectives of the Environmental Management and Pollution Control System:

> (b) to prevent environmental degradation and adverse risks to human and ecosystem health by promoting pollution prevention, clean production technology, reuse and recycling of materials and waste minimization programmes; and
>
> (c) to regulate, reduce or eliminate the discharge of pollutants and hazardous substances to air, land or water consistent with maintaining environmental quality; ...

EDO, therefore, recommends that the third proposed objective be replaced.

Recommendation 11: The third objective of the Draft Environmental Standard be "ensure sustainable management of marine finfish farming where environmental degradation and adverse

[14] See recommendations 25-27 and 47 and of the Finfish Farming Report.

risks to human and ecosystem health are prevented and pollutants and hazardous emissions from finfish farms are regulated, reduced or eliminated to maintain environmental quality."

Finally, the fourth objective for the Draft Environmental Standard should make it clear that monitoring reports should not only be publicly accessible but that they are disclosed in a *timely* fashion to allow for the community to meaningfully engage with management processes.

Recommendation 12: The fourth objective of the Draft Environmental Standard be "transparency of environmental management and industry accountability for environmental health through the timely publication of monitoring reports accessible to the public."

2.2. Management of the effects of finfish farming on the Marine Environment

The Position Paper states that the Draft Environmental Standard will manage the impacts of finfish farms on the marine environment by including:

> …a framework for setting limits on marine finfish farming activities at local (Farm level) and regional scales (Marine Farming Development Plan areas). These limits need to control the quantities of particulate wastes and dissolved nutrients that are permitted to be released to the marine environment.

EDO supports triggers and limits being set on the quantities of particulate wastes and dissolved nutrients that are permitted to be released to the marine environment from finfish farms. It has been EDO's consistent position that the maximum limits for these pollutants, and their production, be capped in all MFDPs for finfish farms. This is to ensure that enforceable limits are set based on the scientific information provided when the MFDPs are created or amended, and the discretion of the EPA Director to vary biomass and pollution limits is appropriately limited. Our recommendations in this respect are consistent with the finding and recommendations of the Finfish Farming Report.[15]

Recommendation 13: The Draft Environment Standard recognise caps on finfish biomass, stocking density and particulate and nitrogen pollution imposed in MFDPs through reformed Controls (refer to recommendations 17 and 39 below).

2.3. Focus areas proposed to be addressed by the Draft Environmental Standard

2.3.1. Establishing Management Zones

The Position Paper states that the Draft Environmental Standard will establish three zones providing for differing levels of environmental protection: the Farm Zone, Depositional Effect Zone and the Regional Area.

While the Farm Zone covers the area of the pens, the Depositional Effect Zone covers the lease area plus 35 m (as is currently standard practice in environmental licences), Figure 1 and the text of the Position Paper provide no guidance on the size of the Regional Area to be covered by the

[15] See recommendation 19 of the Finfish Farming Report.

Draft Environmental Standard, or what will inform its extent. Furthermore, the Regional Area is described as "beyond the boundary of the [Depositional Effect Zone] boundary where there are to be no significant effects on marine biodiversity."

While it may be convenient to create a tiered system of protection for the environment around finfish farms, that system must still be informed by the best available science and seek to ensure that not just significant, but *all* adverse environmental impacts arising from finfish farming are avoided, mitigated, and or restored – particularly in the Regional Area within which the finfish farm is located. To this end, we recommend that further information be provided in the Draft Environmental Standard about how the Regional Area is defined by reference to the best available science and that it provides for no adverse effects on marine biodiversity or environmental quality arising from finfish farming.

Recommendation 14: The Management Zones in the Draft Environment Standard provide that the Regional Area is to be defined by reference to the best available science and that it provides for "The broader environment extending beyond the boundary of the Depositional Effect Zone boundary where there are to be no adverse effects on marine biodiversity or environmental quality referable to finfish farming."

2.3.2. Management Zone Charts and Monitoring Stations

The Position Paper states that the Draft Environmental Standard "may require 'particulate depositional modelling' and 'nutrient dispersal/biogeochemical modelling' to predict both seabed and water column environmental footprints of the finfish farm."

EDO is supportive of particulate depositional and nutrient/biogeochemical modelling being undertaken for finfish farms, however, for new or expanding finfish farms we expect that this would be done at the preliminary stage as part of the Marine Farming Planning process under the *Marine Farming Planning Act 1995*. Furthermore, these models must clearly state their scientific assumptions and limitations, including in the environmental data used to inform them. The modelling, assumptions and data should be publicly available, to allow for an understanding of how planning and approval decisions have been made.

Recommendation 15: Particulate depositional and nutrient/biogeochemical modelling for new or expanding finfish farms should be undertaken at the Marine Farming Planning stage and should be publicly available and clearly state their underlying assumptions and indicate the limitations, including in the environmental data that has been used to inform them.

Recommendation 16: Modelling required for existing finfish farms under the Draft Environmental Standard should be publicly available and should clearly state their underlying assumptions and indicate the limitations, including in the environmental data that has been used to inform them.

2.3.3. Managing Finfish Production

EDO reiterates that it strongly supports the imposition of maximum caps for biomass, stocking density and particulate wastes and dissolved nutrients that are permitted to be released to the marine environment. However, we maintain that the most appropriate regulatory tool for the imposition of such caps is the MFDPs and not the proposed Environmental Standards.

We are concerned the proposed Draft Environmental Standards and Controls do not mandate biomass and nitrogen caps and, instead contrary to the Finfish Farming Report recommendations 19, they still provide the EPA Director with complete discretion on when and how limits are set. EDO's recommendations on the proposed Controls are described in more detail in part 3 of this submission.

Recommendation 17: Caps on maximum finfish biomass, stocking density, particulate wastes and dissolved nutrients permitted to be released to the marine environment should be imposed in MFDPs through amended Controls, and not in the proposed Environmental Standards (refer to recommendations 13 and 39).

EDO does consider that it is sensible to provide *limited* discretion to the EPA Director to set biomass, stocking density and pollution limits *below* mandated caps in the MFDPs to respond to changes in environmental conditions (either as a result of finfish farms operations or other influences) to protect the environment and community. In which case, the Draft Environmental Standard should provide clear guidance on how this limited discretion to set biomass, stocking density and pollution limits is to be exercised by the Director including through clear criteria informed by the best available scientific and the precautionary principle. These limits should be set to ensure that:

1. finfish farming does not exceed the natural assimilative capacity of the surrounding environment to break down and absorb wastes and nutrients;
2. there is no negative trend in baseline environmental values of the water body surrounding the finfish farms; and
3. Water Quality Objectives for the waterway in which the marine farm operates (set under the *State Policy on Water Quality Management 1997*) are achieved or are bettered.[16]

Recommendation 18: The Draft Environmental Standard provide guidance on how the EPA Director can set to set biomass, stocking density and pollution limits *below* caps mandated in the MFDPs to respond to changes in environmental conditions. This guidance should include clear criteria and be informed by the best available science and the precautionary principle.

2.3.4. Survey Scheduling Requirements

Until the EPA releases the Cawthron Institute review of the EPA's review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture, it is difficult to comment on the

[16] Refer to recommendations 25-27 of the Finfish Farming Report.

proposed scheduling of monitoring proposed in the Draft Environmental Standard and whether or not it meets best practice environmental management.

Recommendation 19: The Draft Environmental Standard provide survey scheduling requirements in line with international best practice, and the best available science.

Currently, requirements for environmental monitoring to occur at or near peak production is at the EPA Director's discretion. Between 2014 and 2019, the regulator has only required approximately half of all environmental monitoring surveys at finfish farms (outside of Macquarie Harbour) to occur at or near peak feed input.[17] EDO, therefore, supports the proposal for compliance at the lease scale to be measured through environmental monitoring undertaken during the period of the farm's peak production, when finfish pens are stocked, and fish are close to their harvest size. This is consistent with international practice and when environmental impacts of finfish farming are likely to be greatest (and therefore easiest to detect).

The Position Paper states that "Results of monitoring at peak production will determine whether the farm is able to be restocked or, in a worst-case scenario, may also determine if the farm, or part thereof, is to be rapidly de-stocked." It is notable that the failure to set scientifically-based biomass, stocking density and nitrogen caps and to act swiftly in response to monitoring reports showing the deterioration of environmental conditions in Macquarie Harbour resulted in benthic "dead zones", low dissolved oxygen levels and placed the endangered Maugean Skate under further threat of extinction (for more on this, see **Case Study 1** below).[18]

To avoid repeats of the environmental harm that presented in Macquarie Harbour after the increase in finfish farming there, EDO considers it critically important that environmental monitoring results lead to appropriate and proportionate enforcement and/or management actions by the regulator. These responses should be dictated by clear and scientifically-based triggers in the Draft Environmental Standards. **See Recommendations 10, 27 and 29.**

As outlined in section 1.2 above, EDO considers that a precautionary approach rather than an adaptive management approach is more appropriate in instances where impacts of the activities are potentially serious or irreversible (such as loss of critically endangered species) or where too little is known to reliably anticipate risks. EDO urges the Tasmanian Government to implement the recommendations of the Finfish Farming Report in this regard and:

- Clarify the application of a precautionary approach in the *Marine Farming Planning Act 1995*, including in the approval of Marine Farming Development Plans;[19]

[17] Environment Protection Authority (2019) *A Review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture, Environment Protection Authority*, Hobart, Tasmania.
[18] Moreno, D., Lyle, J., Semmens, J., Morash, A., Stehfest, K., McAllister, J., Bowen, B. & Barrett, N. (2020) Vulnerability of the endangered Maugean Skate population to degraded environmental conditions in Macquarie Harbour, Fisheries Research and Development Corporation Project No. 2016-068. Institute for Marine and Antarctic Studies, University of Tasmania, Hobart.
[19] Recommendation 51 of the Finfish Farming Report.

- Clarify the application of an adaptive management approach to regulation of finfish farming in the *Marine Farming Planning Act 1995*.[20]
- Develop a framework for an adaptive management approach for the finfish farming industry, which includes validated models, performance monitoring, clear triggers for management, regular review and transparent reporting. Until such a framework is adopted, ensure the precautionary principle is individually applied to finfish farming operations.[21]

2.3.5. Baseline Environmental Assessment

EDO considers it entirely avoidable and regrettable that sufficient baseline environmental data has not, to date, precluded the establishment or expansion of finfish farms in Tasmania (refer to Case Study 1). While the failure to collect adequate baseline environmental data before finfish farming commenced for many finfish farms makes it impossible to now precisely establish background environmental conditions in these locations, EDO agrees that it is important to seek to establish a reference baseline dataset that is, as far as possible, analogous to the location.[22]

EDO, therefore, welcomes the intent that, where existing finfish farms do not have sufficient background or baseline data, the Draft Environmental Standard will require baseline monitoring to be undertaken within, adjacent to and beyond the marine farming lease.

EDO maintains its recommendation that, henceforth, sufficient background data should be collected to establish the scientific basis for the Marine Farming Planning process under the *Marine Farming Planning Act 1995*. If enough data is not provided to identify risks and satisfy the Marine Farming Planning Review Panel that adverse impacts on environmental values can be avoided, minimised or appropriately managed, further information should be requested from the proponent or the MFDP should be refused.

Case Study 1: The Macquarie Harbour expansion and the potential impact on the Maugean skate

At the time of the proposed expansion of finfish farming in Macquarie Harbour environmental organisations raised concerns that not enough was known about the ecology or biology of the Maugean skate, or the likely movement of nutrients within Macquarie Harbour, to ensure the species would not be significantly impacted.

The Marine Farming Branch within DPIPWE (now NRE) recommended that the expansion be approved, despite noting that IMAS advice confirmed that there was "currently no information

[20] Recommendation 52 of the Finfish Farming Report.
[21] Recommendation 53 of the Finfish Farming Report.
[22] Problems with existing control locations have been identified in an evaluation of the Broadscale Environmental Monitoring Program for the Huon and D'Entrecasteaux Channel: see Ross, D. J. and Macleod, C. K. 2013, *Evaluation of Broadscale Environmental Monitoring Program (BEMP) data from 2009-2012*, IMAS Technical Report. This report concluded that the current control location (Recherche Bay) was not a meaningful ecological comparison to sites in the Huon and D'Entrecasteaux system; meaning that the potential for comparison and translation of changes in broader system water conditions to the Huon and Channel ecosystems would be limited.

about the potential effects of salmon farming in Macquarie Harbour on the Maugean skate" and a dedicated survey to identify trigger values would not be completed until September 2012 (after the anticipated commencement of operations in Macquarie Harbour).

The Panel also acknowledged the lack of data regarding nutrient enrichment, the nature or effect of that enrichment and the potential effects of the expansion on the Maugean skate. Despite this, the Panel's recommendation, and the subsequent documentation supporting the referral to the Federal Environment Minister, made several broad statements such as:

- "It is possible that skates will continue to be able to utilise the lease area";
- "It therefore could be concluded that solid wastes are unlikely to have a significant impact on the Skate, based on the currently available information on the biology and ecology of the species."

Those statements were not supported by the limited information available regarding the extent (and depth) of the habitat of the threatened species, its feeding and breeding habits and its susceptibility to nutrient changes, as well as limited data regarding nutrient movement in the Harbour.

Subsequent nutrient and dissolved oxygen levels experienced in Macquarie Harbour, and the impact of those levels on fish health and farm productivity raised concerns that more rigorous baseline data should have been required as part of the assessment process rather than post-approval. At the very least, data provided with a proposal must be sufficient to enable appropriate performance triggers to be set. In relation to the Maugean skate, this was not done.

In addition to the baseline environmental assessments outlined in the Position Paper, EDO believes there is merit in including surveys of shorelines as part of the baseline environmental assessments. This would be useful in establishing:

- the presence/absence of nuisance drift algae and substrate fouling; and
- litter density in terms of both quantity and type.

In addition to the compliance monitoring sites specified in the baseline environmental monitoring (i.e. proximal sites), additional sites at mid-range and distal points should be surveyed in the water body in which the lease is located. These monitoring locations should be chosen on the basis of hydrodynamic and biogeochemical modelling of the water body.

Recommendation 20: Shoreline monitoring and mid-range and distal monitoring locations (chosen on the basis of hydrodynamic and biogeochemical modelling) should be included in baseline environmental assessments required under the Draft Environmental Standard.

2.3.6. Farm Zone Seabed Monitoring

EDO is concerned the section on Farm Zone seabed monitoring in the Position Paper only outlines monitoring involving the assessment of major visual impacts (such as the presence of gas bubbling from the sediment; excessive feed dumping; or loss of native vegetation/habitat). As noted in the *Review of Tasmanian and International Regulatory Requirements*, internationally, the

use of visual indicators has only been considered as an additional piece of evidence to support other quantitative environmental indicators (e.g. physico-chemical and biological parameters) measured against known thresholds.[23]

Moreover, many of the existing indicators referred to in existing guidelines and the Position Paper are indicators that the environment is already in terminal decline. For example, gas bubbling up from the sediment is either hydrogen sulfide and methane or both— the sediment is, therefore, fully anoxic to the surface, i.e. at the bottom of a decline from oxic conditions. EDO considers that it would be preferable to identify this decline before it hits rock bottom.

EDO considers the following environmental indicators should also form part of the seabed monitoring at the Farm Zone:

- Sediment redox potential;
- Sulfide concentration in sediment;[24] and
- Concentrations of the following in both bottom and surface waters: nitrate, ammonium, phosphate and dissolved oxygen.[25]

Recommendation 21: The Draft Environmental Standard should require sediment redox potential, sulfide concentration in sediment and concentrations of nitrate, ammonium, phosphate and dissolved oxygen at bottom waters be included in monitoring at the Farm Zone level.

The Position Paper states it is expected the Draft Environmental Standard will set out seabed scoring criteria concerning the observation of the Farm Zone. EDO believes it would be more appropriate for the scorecard to be based on observations that extend out to the Depositional Effect Zone boundary. This allows the assessment to include the entire environmental footprint of finfish farms and to go beyond an assessment of major visual impacts to include sediment physico-chemical and biological impacts. The score criteria should be aligned with the identified trigger values that ensure finfish production does not exceed the capacity of the receiving environment to naturally break down and absorb both particulate and dissolved wastes and nutrients, and that ensure there are no undesirable trends from baseline environmental values of the surrounding water body.

Recommendation 22: The Draft Environmental Standard should set out seabed scoring criteria in relation to the observation of both Farm Zone and Depositional Effect Zones.

The Position Paper states that the number of seabed monitoring stations in the Farm Zone will be determined "based on the monitoring method chosen and the amount of feed being applied to

[23] Environment Protection Authority (2019) *A Review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture, Environment Protection Authority*, Hobart, Tasmania.
[24] Macleod, C. & Forbes, S. (eds) 2004, *Guide to the assessment of sediment condition at marine finfish farms in Tasmania*, Tasmanian Aquaculture and Fisheries Institute, University of Tasmania.
[25] Ross, D. J. and Macleod, C. K. 2013, *Evaluation of Broadscale Environmental Monitoring Program (BEMP) data from 2009-2012*, IMAS Technical Report.

the lease." The *Review of Tasmanian and International Regulatory Requirements* found that at the Farm Zone level, Tasmania requires fewer monitoring stations and relies on less monitoring data than is required in other jurisdictions.[26] According to this report, "Additional sampling within the Farm Zone would enhance current understanding of lease-based effects, while monitoring beyond the [Allowable Zone of Effect] to target potential cumulative far-field effects would align with international practice."[27] We also note the SAMS Enterprise review of the broad-scale environmental monitoring programs found that some of the present monitoring stations in the Huon Estuary and D'Entrecasteaux Channel are unsuitable and its recommendation that benthic/sediment monitoring stations should be placed in optimal locations for detecting any long-term changes that may be caused by finfish farming.[28]

The Draft Environmental Standard should contain requirements about how many monitoring stations should be located at the Farm Zone level based on the international examples provided in the *Review of Tasmanian and International Regulatory Requirements*, scaled up or down depending upon the biomass within the lease and its area.

Recommendation 23: The Draft Environmental Standard should include requirements about how many monitoring stations should be located at the Farm Zone level based on the international examples provided in the *Review of Tasmanian and International Regulatory Requirements*, scaled up or down depending upon the biomass within the lease and its area.

2.3.7. Depositional Effect Zone Boundary Monitoring

EDO has reservations about the setting of the Depositional Effect Zone boundary monitoring at 35m given the emerging evidence, both within Tasmania and internationally, that the depositional effects of finfish farming can be more widespread. For example, the Cawthron Institute questioned the appropriateness of the 35m compliance boundary in the case of Macquarie Harbour given that the effects of finfish farming were evident beyond this boundary.[29] Looking at examples internationally, the SAMS Enterprise review of broad-scale environmental monitoring programs found evidence of benthic effects of finfish farming up to 1,000 metres from fish farms.[30] In the absence of a scientific reason for the 35m boundary, the EDO would support more rigorous indicators being developed and broadscale monitoring implemented.

[26] Environment Protection Authority (2019) *A Review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture, Environment Protection Authority*, Hobart, Tasmania.
[27] Ibid, at p 8.
[28] Black, K., Tett, P. & Reinardy, H. 2022, *Review of the broad-scale environmental monitoring programs: Huon Estuary and D'Entrecasteaux Channel*. A report by SAMS Enterprise (Oban, Scotland) for EPA Tasmania.
[29] Knight, B., Forrest, B. & Johnston, C. 2015, *Macquarie Harbour Environmental and Fish Health Monitoring Review*. Prepared for Department of Primary Industries, Parks, Water and Environment Tasmania. Cawthron Report No.2729.
[30] Black, K., Tett, P. & Reinardy, H. 2022, *Review of the broad-scale environmental monitoring programs: Huon Estuary and D'Entrecasteaux Channel*. A report by SAMS Enterprise (Oban, Scotland) for EPA Tasmania.

Recommendation 24: The Draft Environmental Standard should set the Depositional Effect Zone boundary located at a distance from the finfish farm identified by the best available science as providing a good indication of the impacts of the finfish farm.

The Position Paper states that it is intended ecosystem function and biodiversity outside the Depositional Effect Zone is not "significantly different from that existing prior to the commencement of finfish activity on the lease, or that exists at the best available reference locations." EDO considers any comparison of impacts of finfish farming should use as its reference the background conditions before the commencement of any finfish activity *in the area* of the lease. The reason for this is that over time, an area where finfish farming is permitted is likely to have multiple leases. Therefore, monitoring locations should be identified to allow for cumulative impacts (temporal and spatial) on the entire water body to be discerned.

Recommendation 25: The Draft Environmental Standard should require that ecosystem quality and biodiversity outside the Depositional Effect Zone should show no adverse effects referable to finfish farming (see also recommendation 14).

EDO is concerned the Position Paper suggests a less detailed monitoring regime may be applied to finfish farms where regulatory expectations are consistently met. This could prevent the EPA from compiling a consistent and comprehensive historical dataset, which may hinder its ability to identify trends in environmental conditions and the effectiveness of management actions. Moreover, should environmental quality decline at remote sites in an area with multiple leases, it is important to have information on all contributing sources of pollution, both to understand cumulative inputs and to effect appropriate remedial management actions. Finally, we are concerned that such an arrangement could be open to abuse by operators knowing they are not to be scrutinised as tightly under "a less detailed monitoring regime".

Recommendation 26: The Draft Environmental Standard should not allow for reduced environmental monitoring as an incentive for compliance unless the EPA can be satisfied that the reduced monitoring regime will still allow cumulative impacts, trends in environmental conditions and the effectiveness of management actions to be properly understood.

The Position Paper outlines how survey requirements for the Depositional Effect Zone will identify when impacts from a finfish farm are considered to be "significant". As we have already outlined in recommendation 25 above, EDO considers that there should be no adverse environmental effects referable to finfish farming outside the Depositional Effect Zone. While EDO generally agrees with the triggers identified in this section of the Position Paper, we also recommend that the Draft Environmental Standard identify appropriate water quality monitoring triggers (based on the Water Quality Objectives for the area) to identify unacceptable impacts of finfish farming outside the Depositional Effect Zone.

Recommendation 27: The Draft Environmental Standard survey requirements for the Depositional Effect Zone should also identify water quality monitoring triggers (based on the

Water Quality Objectives for the area) to identify unacceptable impacts of finfish farming outside the Depositional Effect Zone.

The Draft Environmental Standard needs to define how often video surveys and measurements must be undertaken. At present, some measurements are only undertaken annually and this is insufficient. We note that respected researchers have recommended that video assessment be adopted as the main approach for farm-based monitoring. According to Macleod and Forbes, [31]

> Video footage should be obtained relatively frequently (at least monthly but preferably fortnightly) from cages within the farm, towards the end of the stocking cycle and over the fallow period, and this should be compared with footage from reference positions taken at the same times.

Recommendation 28: The Draft Environmental Standard should require more regular video monitoring cycles based on the best available science.

Beyond specifying the trigger levels, the Draft Environmental Standard should specify what management and/or enforcement actions will be taken if trigger levels are breached. These actions should be based on the best available science, and be consistent with a precautionary approach.

Recommendation 29: The Draft Environmental Standard should outline appropriate management and/or enforcement responses to be taken in the event that Depositional Effect Zone boundary monitoring triggers are breached.

2.3.8. Broadscale Environmental Monitoring Program

The Position Paper suggests the broadscale environmental monitoring program for finfish farming areas could include the following:

- annual sediment biota and chemistry surveys;
- monthly water quality surveys;
- biannual rapid visual assessment surveys (RVA) of inshore reefs;
- 5 yearly Edgar-Barrett biodiversity surveys of inshore reefs;
- annual qualitative deep reef condition assessment surveys;
- 5 yearly quantitative biodiversity assessment surveys of deep reefs;
- annual qualitative seagrass bed condition assessment surveys; and
- 5 yearly seagrass bed extent surveys and quantitative seagrass bed condition assessment surveys.

[31] Macleod, C. & Forbes, S. (eds) 2004, *Guide to the assessment of sediment condition at marine finfish farms in Tasmania*, Tasmanian Aquaculture and Fisheries Institute, University of Tasmania.

As stated above at 2.3.4., it is difficult to comment on the proposed schedule for the Broadscale Environmental Monitoring Program without access to the Cawthron Institute's review of the EPA's review of Tasmanian and International Regulatory Requirements for Salmonid Aquaculture.

The recently released SAMS Enterprise review of broadscale environmental monitoring programs for the Huon Estuary and D'Entrecasteaux Channel advocated for the development and tracking of "balance of organisms" indicators to monitor the condition of marine ecosystems rather than just indicators of pressures on state. It said that an ecosystem approach was aligned with best practice in marine environmental monitoring. It also recommended increased sampling frequency, with at least monthly sampling of phytoplankton, and triggers that indicate a disturbance related to changes in endogenous pressures.[32]

EDO also strongly recommends further assessments of the cumulative effects of finfish farming being undertaken because this area has been lacking under the existing system. For example, under the MFDP for the D'Entrecasteaux Channel, a plan-wide nitrogen cap has been set by the EPA Director to control nutrient impacts. However, there is currently limited monitoring to determine whether the cumulative contribution of each lease area to the nitrogen load exceeds the cap, and no ongoing assessment to determine whether the existing cap is set at a sustainable level (particularly having regard to other land-based nutrient sources contributing to the nitrogen load in the Channel).

Recommendation 30: The Draft Environmental Standard broadscale environmental monitoring program requirements should align with the best available science and include the tracking of balance of organisms indicators and provide for monitoring to identify cumulative contributions to area-based limits (such as MFDP-wide nitrogen caps).

2.3.9. Noise Monitoring and Assessment

Noise emissions from finfish farms and their impacts on community amenity, health and well-being is a key issue raised by community members, as outlined in the Finfish Farming Report. The Position Paper proposes that noise emission limits will be implemented within Environmental Licences, where appropriate but that the Draft Environmental Standard will also prescribe ambient noise limits.

EDO supports the proposal for clear noise emission limits to be provided, whether in Environmental Licences or the Draft Environmental Standard. However, EDO considers that it is essential that any noise limits for finfish farms should include standards for boats traveling to and from leases and for land-based activities, as these are some of the primary sources of noise experienced by the community.

The Finfish Farming Report found that the community impact of noise goes beyond decibel levels and is also related to its tone, frequency, regularity and time of occurrence (which are not

[32] Black, K., Tett, P. & Reinardy, H. 2022, *Review of the broad-scale environmental monitoring programs: Huon Estuary and D'Entrecasteaux Channel*. A report by SAMS Enterprise (Oban, Scotland) for EPA Tasmania.

currently regulated). EDO is therefore supportive of the proposal to include consideration of such factors in noise limits provided under the Environmental Standard.

EDO further considers that default noise limits should be set in the Draft Environmental Standard, but that these could be varied in the event that ambient monitoring at a particular location shows a lower limit is warranted. For example, a night-time standard of 32 dB(A) may be far too high for some quiet locations, in which case, the limit might be set by reference to a certain threshold above the background noise level (e.g. +5dB(A) above background with penalties for certain tonality characteristics).

Finally, noise limits should also be applied to protect against ecosystem impacts (such as disturbance of cetaceans), as this is increasingly being recognised as a major impact of industrial activities in marine areas.

Recommendation 31: The Draft Environmental Standard cover noise generated by boats traveling to and from finfish farms and set default noise levels to protect community and ecosystem health which may be varied where ambient monitoring at a particular location shows lower limits are warranted.

The Position Paper states that it *may* be a requirement that licence holders report all environmental hazards or incidents arising from noise pollution to the Director. EDO considers it should be mandatory for licence holders to report community complaints concerning noise to the Director. Furthermore, licence holders should be required to maintain records of each complaint and produce these records upon request by the EPA.

Recommendation 32: Finfish farms be required to maintain records of each noise complaint received and be required to produce these records upon request to the EPA.

We note the Finfish Farming Report findings that the EPA does little monitoring of noise generated by finfish farming operations its recommendation that additional resources be provided to the EPA to increase its noise monitoring and compliance functions. EDO supports the Finfish Farming Report recommendations relating to noise and urges the Tasmanian Government to implement them.[33]

2.3.10. Artificial Lighting

Serious concerns regarding lights from finfish farming operations and its impact on community well-being, wildlife and property values were outlined in the Finfish Farming Report, however, the Position Paper fails to properly reflect or respond to those concerns, especially given the increasing amount of research showing the deleterious effects of artificial light at night on marine biota.

[33] See Recommendations 68-70 of the Finfish Farming Report.

The Position Paper states that licence holders *may* be required to engage a light pollution expert to establish a Light Attenuation Management Plan for the approval of the Director and that management plans *may* be required to incorporate descriptions of all light sources (including temporary sources such as from vessels), assess risk, outline monitoring and management actions to mitigate the effects of light associated with marine finfish aquaculture to ensure effects on the environment and community are kept to a minimum. EDO considers these requirements should be obligatory for all finfish farms to ensure rules are fairly applied.

Recommendation 33: Finfish farms should be required to engage a light pollution expert to establish a Light Attenuation Management Plan for the approval of the Director and management plans must incorporate descriptions of all light sources (including temporary sources such as from vessels), assess risk, outline monitoring and management actions to mitigate the effects of light associated with marine finfish aquaculture to ensure effects on the environment and community are kept to a minimum.

The Position Paper also states it *may* be a requirement that licence holders report all environmental hazards or incidents arising from light pollution to the EPA Director. As with noise pollution, we believe it should be mandatory for licence holders to collect records of community complaints concerning light pollution and provide these upon request to the EPA. EDO further supports the implementation of the Finfish Farming Report's recommendations concerning light pollution.

Recommendation 34: Finfish farms should be required to maintain records of each light complaint received and be required to produce these records upon request to the EPA.

2.3.11. Therapeutant and Disease Management

EDO welcomes the proposal to monitor the environmental impacts of therapeutants use in finfish farms, and impose requirements for monitoring plans and records to be provided to the EPA Director. EDO notes that therapeutant use, and particularly antibiotic usage, is an area of significant concern for the community, particularly given the increasing incidence of antibiotic resistance.

It has historically been difficult for the community to get accurate information concerning the usage of therapeutants in finfish farms and information concerning their environmental impacts. EDO, therefore, recommends that the Draft Environmental Standard require annual reports to be prepared and monitoring results publicly disclosed.

Recommendation 35: The Draft Environmental Standard require records of therapeutant use and disease incidence, and environmental monitoring to be annually reported and these reports should be available to the public.

2.3.12. Escapes and Mortality Events

Like with therapeutant use, it has historically been difficult for the community to get accurate information concerning mass mortality events and fish escapes from finfish farms. EDO, therefore, makes recommendations for the Draft Environmental Standard to require this information to be publicly disclosed to improve transparency, accountability and therefore public confidence in the regulation of finfish farming.

Recommendation 36: The Draft Environmental Standard require all records of escapes and mortality events to be publicly available and reported in a timely manner.

Recommendation 37: The Draft Environmental Standard should provide for the management of the environmental impacts of fish escapes, and fines should be imposed where escaped fish are not recovered.

2.4. Commitment to independent regulation

EDO welcomes the commitment of the Tasmanian Government to an independent environmental regulator but believes more needs to be done to ensure the EPA's full independence. This was also a finding of the Finfish Farming Report which recommended increasing the independence of the EPA as a statutory authority as well as increasing the resourcing of the EPA to ensure it can fully undertake its regulatory roles and responsibilities in relation to the finfish farming industry.[34]

EDO notes its submission in response to the draft Environmental Management and Pollution Control Amendment Bill 2022 made comprehensive recommendations for reforms required to ensure that Tasmania's EPA is best practice. Given the effectiveness of the Draft Environmental Standard will depend on its consistent application and enforcement by a properly independent EPA, EDO urges the adoption of our recommendations in that submission.[35]

EDO supports the proposal to establish and implement an auditing framework to ensure the finfish aquaculture industry is undertaking environmental monitoring as outlined in the Draft Environmental Standard, as well as the EPA's commitment to continuing to conduct independent validation of industry environmental monitoring data and undertake complex data analysis to identify trends, patterns, and issues not captured within individual marine finfish farm reports. Further to this commitment, EDO considers that it would be helpful for the EPA to commit to:

- continually evaluating its environmental quality objectives and management of Tasmania's coastal waters against the best available science; and
- setting itself targets for how many finfish farms are audited per year and that these results of the audits should be made publicly available.

[34] Recommendations 28-29 of the Finfish Farming Report.
[35] EDO's Submission on the Draft Environmental Management and Pollution Control Amendment Bill 2022 can be accessed here: https://www.edo.org.au/publication/edo-submission-on-the-draft-environmental-management-and-pollution-control-amendment-bill-2022/

The Position Paper includes a commitment to making relevant environmental performance and compliance information collected by the EPA available on the Salmon Portal and the EPA website. The Finfish Farming Report made several recommendations about information that should be made publicly available, including:

- The Annual Environmental Reports of finfish farming operators to the EPA;[36]
- The Environmental Impact Statements within marine farming development plan application, including the independent modelling, data and evidence on which they are based;[37]
- The Water Quality Objectives; the annual report on the monitoring of the Water Quality Objectives; all water quality objectives developed by the EPA Board or the Director, EPA for assessment of individual environmental licences for fin fish farming operations;[38]
- The baseline environmental data underpinning Marine Farming Development Plans and amendments;
- Finfish farming licences, leases and associated management plans;
- Individual lease monitoring data regarding the impact on benthic flora and fauna, water quality, marine life and threatened species; and
- Details of compliance and enforcement activities.[39]

In addition to the above list, we recommend the following environmental information and data be made publicly available promptly (including real-time reporting of monitoring data):

- All baseline data and monitoring and/or environmental impact assessments for proposed leases where salmon have not previously been farmed and for leases where salmon farming is being re-established following a prolonged interval;
- All monitoring of environmental parameters on the perimeter and outside of marine farming leases;
- All monitoring plans are required under environmental licences;
- Annual records of therapeutant use and disease incidence;
- Records of escapes and mortality events;
- All enforcement actions taken by regulators under the *Marine Farming Planning Act 1995*, *Living Marine Resource Management Act 1995,* and EMPC Act, including measures or directions issued to marine farm operators, statutory notices or fines issued and prosecutions commenced;
- The EPA Director's assessments of environmental licence applications; and
- Any additional data analysis that identifies the cumulative impacts of finfish farming not captured within individual marine finfish farm reports.

[36] Recommendation 9 of the Finfish Farming Report.
[37] Recommendation 16 of the Finfish Farming Report.
[38] Recommendations 25-27 of the Finfish Farming Report.
[39] Recommendation 47 of the Finfish Farming Report.

Recommendation 38: The EPA commit to the release of all relevant environmental information and data concerning finfish farming, including plans, records and monitoring required under conditions of permits, environmental licences or Environmental Standards.

We also recognise that in the absence of consistent, proactive release of data, members of the public have been relying on applications under the *Right to Information Act 2009* to access information. It is our experience that such requests are excessively time-consuming (one has taken over 3 years to resolve) and are regularly refused by the EPA and NRE on the basis of commercial confidentiality, unreasonable diversion of resources, or a reluctance to discourage future voluntary disclosures by industry. For these reasons, EDO supports the Finfish Farming Report recommendations to improve the public's access to information and the accessibility of this information, including:

- A review of the basis on which finfish farming industry data or information may be withheld from the public under a claim of commercial confidentiality;[40]
- A review of the online data portal (in partnership with all key stakeholders);[41] and
- An expansion of the online data portal's data scope to ensure it is presented in a format that connects directly to regulatory requirements and is comparable over time and between industry stakeholders, including references to when and by whom it was collected.[42]

3. Draft Standardised Marine Farming Management Controls

EDO supports efforts to standardise and create a contemporary set of Controls to replace the current Controls contained in the existing 14 MFDPs, particularly where these management controls are inconsistent with the sustainable best practice management of marine finfish farming.

However, based on the information and materials released with the Background Paper, it is unclear whether there will be a further opportunity to comment on the controls as part of the MFDP amendment process to reflect the proposed new management controls. EDO considers that the public should be given this additional opportunity to comment on the proposed Controls as they are proposed to amend individual MFDPs., particularly if our recommendations concerning the imposition of maximum biomass, stocking density and pollution caps in MFDPs are adopted (see recommendations 13, 17, and 39). Providing for public comment on individual changes to MFDPs is important as each MFDP has previously been assessed on unique information about a particular location, and uniform controls may do away with protections the Panel and Minister previously considered necessary for a particular area.

3.1. Objectives of the Draft Standardised Marine Farming Management Controls

[40] Recommendation 6 of the Finfish Farming Report.
[41] Recommendation 7 of the Finfish Farming Report.
[42] Recommendation 8 of the Finfish Farming Report.

EDO is broadly supportive of the following objectives for the development of the draft standardised Controls:

- more effective stakeholder engagement about the regulation of marine farming; and
- continuous improvement by ensuring that all plans apply management controls that are consistent with contemporary management practices.

However, the proposed objectives of consistency across all plans and uniformity of the management framework should not be pursued above all else. To ensure both the environment and community are properly protected against the adverse impacts of finfish farms, it is important to recognise that some MFDPs need to be tailored, especially regarding biomass and stocking densities, based on the unique environments and locations (discussed further at part 3.3 below).

EDO considers that the proposed Controls fall short in terms of achieving the objectives of more effective stakeholder engagement and management controls consistent with best practice. Our reasons for this are outlined in further detail below.

3.2. Stakeholder engagement

While one of the stated aims of the creation of the Controls is to provide more effective stakeholder engagement in the regulation of marine farming, there is no evidence that the proposed Controls will deliver this outcome. This is because the existing problems with the finfish farming assessment and approval process remain. For example:

- There is no opportunity to appeal against a decision to approve an MFDP, or an amendment to a plan, other than for existing marine farm operators where it adversely impacts their existing marine farming activities;
- There is no public notification of the allocation, grant, renewal or variation of marine farm leases under the Act and rights of appeal are extremely limited;
- There are no opportunities for public comment or third-party appeals concerning allocations, grants, renewals or variations of leases under the *Marine Farming Planning Act 1995*. The granting of a new lease or variation of an existing lease can only be challenged if the quality of water in another marine farming lease will be unreasonably affected; and
- Marine farming licences and environmental licences are not subject to any transparent or public assessment process. There is no requirement for marine farm licence applications to be publicly advertised, and appeal rights are limited. Unlike all other “Level 2” activities regulated by the EPA under the EMPC Act, there is no guarantee that a finfish farming activity will be subject to a transparent and public assessment process conducted by the EPA Board. The public is not able to make a formal representation concerning an application assessed by the EPA Director, instead of the EPA Board. There are no third-party appeal rights relating to any environmental licence granted to the finfish farm by the EPA Director.

The lack of meaningful public participation in finfish farm decision-making was acknowledged as a key problem in the Finfish Farming Report, with the Committee making several recommendations including:

- That a review of the *Marine Farming Planning Act 1995* be conducted including its provisions for stakeholder and public consultation and that expanded access to merits review and third-party appeal rights be given consistent with other legislated State planning instruments;[43]
- Requiring applications and variations for marine farming environmental licences to be assessed by the EPA Board, consistent with other Level 2 activities under the EMPC Act[44]; and
- Amending the *Marine Farming Planning Act 1995* and *Living Marine Resource Management Act 1995* to enable third parties to take legal action for environmental harm caused by a breach of licence conditions.[45]

We reiterate our recommendation that the Tasmanian Government implement all Finfish Farming Report recommendations including those aimed at improving public participation in decisions regarding the regulation of finfish farming.

3.3. Best practice marine farming management controls

It is important for the Controls to not only be consistent with contemporary management practices but also with best practice environmental management of marine finfish farming to ensure adverse environmental and community impacts of finfish farming are avoided, minimised or mitigated. Having an objective of consistency with best practice environmental management of finfish farming (rather than just contemporary management practices) is better aligned to the objectives of the proposed Environmental Standard and would better reflect the vision in the current *10-Year Salmon Plan* to be "the most environmentally sustainable salmon industry in the world."

In EDO's view, the draft Controls are not consistent with best practice environmental management. In fact, they are either simply a continuation of existing practice and, in some cases, they will result in a *lower* standard of protection for the environment and the community.

The *Questions and Answers Information Sheet on Standardised Marine Farming Management Controls* states:

> The Standardised Controls will not substantially change any obligation or right of marine farming licence holders, and will not impact on any marine farming licences which have been issued.

[43] Recommendations 11 and 24 of the Finfish Farming Report.
[44] Recommendation 38 of the Finfish Farming Report.
[45] Recommendation 50 of the Finfish Farming Report.

Given the recent findings and recommendation of the Finfish Farming Report, it is clear that a genuine commitment to world's best practice requires substantial reform to the current regulation of finfish farms in Tasmania. **EDO is therefore disappointed by the lack of ambition for improvement signalled in the preparation of the Controls and is concerned that these Controls risk being mere window dressing, bringing no substantive improvement to current practice.**

For example, concerning total nitrogen output, the Controls provide:

> 1.2.1. The Director, EPA, may, from time to time, determine the total permissible dissolved nitrogen output (TPDNO), within specified periods, attributable to licensed finfish for a specified area.
>
> 1.2.3. For the purpose of assessing quantities of dissolved nitrogen output attributable to licensed finfish farming, the Director, EPA may use any method that the Director, EPA is satisfied delivers a proper measure of total dissolved nitrogen output from finfish farming.

Concerning biomass, the Controls provide:

> 1.3.5. The Director, EPA may, from time to time, using whatever information the Director, EPA considers appropriate, determine the maximum permissible biomass of finfish that may be stocked within the area covered by this Plan or any other specified area within the Plan area.

As stated in recommendations 13 and 17 above, EDO considers that best practice environmental management of finfish farming requires that maximum biomass, stocking density and pollution caps be imposed through MFDPs. Finfish biomass and stocking density, and the resultant pollution, are the most influential factors in terms of the environmental impacts from finfish farms. These matters should therefore be front and centre of any applications to the Marine Farming Planning Review Panel for a decision on whether to approve or amend MFDPs for an area. Indeed, imposing no maximum limits in MFDPs is inconsistent with the fact that Environmental Impact Statements (**EIS**) for MFDPs are assessed based on certain fish biomass and nutrient output. By way of analogy, this is akin to assessing an EIS for an industrial facility that proposes to emit X level of pollution to the environment, but in the permit, not imposing any maximum limits keeping holding the industrial facility to X level of pollution.

Despite the strong findings and recommendations of the Sub-Committee outlined in the Finfish Farming Report, EDO is disappointed that the Controls do not propose to set biomass, stocking density and pollution limits and, instead, continue to give the EPA Director complete discretion to set limits with no guidance on how that discretion ought to be informed or exercised.

EDO recommends that biomass, stocking density and pollution limits be clearly stated in the Controls for all MFDPs. These limits should be set by reference to the best available science and modelling which is directed at establishing that the pollution from finfish farms:

- Does not exceed the natural assimilative capacity of the surrounding environment to break down and absorb finfish farm wastes and nutrients;
- Does not materially contribute to negative trends in baseline environmental values of the surrounding water body; and
- Is consistent with the achievement of the Water Quality Objectives for the waterway in which the finfish farm operates.

Our recommendation is aligned with that of the Finfish Farming Report, which recommended that MFDPs specify biomass and nitrogen limits, and any proposal to increase the biomass or nitrogen limits be considered an amendment to the MFDP.[46]

Recommendation 39: Caps on maximum finfish biomass, stocking density, particulate wastes and dissolved nutrients permitted to be released into the marine environment should be imposed in the Controls for all MFDPs. These caps should be set for each MFDP based on the best available science and modelling which is directed at avoiding, minimising or mitigating adverse environmental impacts (refer to recommendations 13 and 17 above).

One issue not addressed in the Background Paper, or the Controls is finfish farming wildlife management (including the management of seals). While we understand there is a Seal Management Framework and that a permit is required under the *Nature Conservation (Wildlife) Regulations 2021* to use a seal-deterrent device, it is the methods of farming that dictate whether seal-deterrent devices are necessary and methods of farming are something that environmental standards and the Controls can have a direct impact on.

We note that the management of seals was one of the issues identified in the Finfish Farming Report. We would be supportive of:

- information on seal deterrent usage and special permits being issued to allow for the capture, holding and relocation of seals being published on the data portal; and
- the environmental standards and marine farming management controls including requirements on the use of barrier technology to prevent seals from entering pens.

We are also supportive of the Committee's recommendation to commission a review of the Seal Management Framework, including the efficacy and safety of all 'seal management' devices and processes allowed under that framework.[47]

3.4. Analysis of the Draft Standardised Marine Farming Management Controls

The following Table outlines EDO's specific recommendations for the proposed Controls.

Recommendation 40: The recommendations relating to the proposed Controls outlined in **Table 1** be implemented.

[46] See Recommendation 19 of the Finfish Farming Report.
[47] Recommendation 64 of the Finfish Farming Report.

Table 1 – EDO comments and recommendations on draft Controls relating to finfish farming

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
1.1.0.	**General Controls for all Marine Farming Zones**		
	Controls for Finfish only		
1.1.1.	There must be no significant visual, physio-chemical or biological impacts at or extending 35 metres from the boundary of the lease area, unless otherwise specified by the Director, EPA.	It is unclear why it should ever be permissible for significant visual, physio-chemical or biological impacts either at or extending 35 metres from the boundary of the lease area, or why the EPA Director should have the power to allow this to occur. Many existing MFDPs contain no such proviso, therefore, this proposed Control is a step backwards. For example, the Great Oyster Bay and Mercury Passage MFDP states, "There must be no unacceptable environmental impact 35 m outside the boundary of the marine farming lease area." The Macquarie Harbour MFDPs also states, "There must be no significant visual, physio-chemical or biological impacts at or extending 35 metres from the boundary of the lease area, as specified in the relevant marine farming licence." If it is considered necessary to keep this phrase, an explanation needs to be provided in the Control about the circumstances in which it would be appropriate for the EPA Director to authorise significant impacts.	Amend this control to "There must be no visual, physio-chemical or biological impacts from finfish farming at or extending 35 metres from the boundary of the lease area, unless otherwise specified by the Director, EPA." If the phrase "unless otherwise specified by the Director, EPA" is retained, an explanation needs to be provided in the Control about the circumstances in which it would be appropriate for the EPA Director to authorise significant impacts

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
1.1.2.	Lessees must conduct monitoring of environmental parameters: (a) in the lease area; (b) 35 metres outside the boundary of the lease area; and (c) at any control site(s) in accordance with the requirements specified in the relevant marine farming licence or in the relevant environmental licence.	EDO's concerns with setting the Depositional Effect Zone Boundary monitoring at 35m have been outlined at 2.3.7 above. In particular, we note the Cawthron Institute questioned the appropriateness of the 35m compliance boundary in the case of Macquarie Harbour given that effects of finfish farming were evident beyond this boundary.[48]	The sites at which lessees should conduct monitoring of environmental parameters need to be determined according to the best available science. Refer to recommendation 24 above.
1.2.0.	**Controls for Regulating Nitrogen Outputs from Fish Farming**		
1.2.1.	The Director, EPA, may, from time to time, determine the total permissible dissolved nitrogen output (TPDNO), within specified periods, attributable to licensed finfish for a specified area.	EDO's concerns about not having a maximum limit on the total permissible dissolved nitrogen output have been outlined in detail in parts 2.3.3 and 3.3 of this submission above. We reiterate that it is unacceptable to leave a decision about the total permissible dissolved nitrogen output in the hands of the EPA Director.	A cap on the total permissible dissolved nitrogen output should be clearly stated in the MFDP based on the best available science and modelling. Refer to recommendations 13, 17 and 39 above.
1.2.3.	For the purpose of assessing quantities of dissolved nitrogen output attributable to licensed finfish farming, the Director, EPA may use any method that the Director, EPA is satisfied delivers a proper measure of	Leaving the methodology for assessing quantities of dissolved nitrogen to the EPA Director means there is no transparency, accountability or consistency in how the TPDNO is determined. We believe the method adopted should be based on the best available science.	A cap on the total permissible dissolved nitrogen output should be clearly stated in the MFDP based on the best available science and modelling. Refer to

[48] Knight, B., Forrest, B. & Johnston, C. 2015, *Macquarie Harbour Environmental and Fish Health Monitoring Review*. Prepared for Department of Primary Industries, Parks, Water and Environment Tasmania. Cawthron Report No.2729.

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
	total dissolved nitrogen output from finfish farming.		recommendations 13, 17 and 39 above.
1.3.0.	**Environmental Control Relating to Carrying Capacity**		
	Controls for Finfish Only		
1.3.1.	The maximum permissible stocking density of salmonid fish is [X] kg/m3 of caged volume unless otherwise specified in the marine farming licence.	EDO does not support there being a loophole in the maximum permissible stocking density of finfish which allows for the maximum permissible stocking density stated in the MFDPs to be exceeded because of other specifications contained in marine farming licences. This proposed Control represents a downgrading of the protections under some existing MFDPs. For example, neither the Great Oyster Bay and Mercury Passage MFDP nor the Furneaux Islands MFDP contain a loophole allowing maximum permissible stocking densities to be exceeded if it is permitted in marine farming licences. Instead, both of these Plans plainly state "The maximum stocking density of salmonid fish is 25 kg/m3."	The stocking density set in the MFDP should be the maximum determined to be sustainable based on the best available science and modelling. Any discretion to vary these levels below this cap needs to have clear criteria and be based on science and the precautionary approach. Refer to recommendations 13, 17 and 39 above.
1.3.3.	Lessees must ensure that farmed areas are fallowed as soon as practicable if bubbles of hydrogen sulphide and/or methane gasses form in the sediment and rise to the surface without physical disturbance of the seabed	With appropriate management, outgassing would not occur as it represents the terminal decline in seabed conditions. Given the seriousness of such events, EDO considers it vital that, for the purposes of this Control, "as soon as practicable" does not extend to allowing enough time for the grow out of fish in a lease before the fallowing occurs. That is, commercial	The Control be amended to include a statement that considerations of commercial impacts of proposed fallowing are not considered in the assessment of practicality.

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
		considerations should be irrelevant to the assessment of practicality.	
1.3.4.	Finfish cage nets must be at least one metre clear of the seabed at low tide under normal growing conditions unless otherwise specified in the relevant marine farming licence.	A requirement that finfish cage nets must only be at least one metre clear of the seabed at low tide is not consistent with international best practice. One paper suggested that a distance of <5m between the bottom of the external net (which could be a predator net) and the seabed was insufficient to allow for the dispersal of particulate waste.[49]	This Control be revised taking account of the best available science and international best practice environmental management.
1.3.5.	The Director, EPA may, from time to time, using whatever information the Director, EPA considers appropriate, determine the maximum permissible biomass of finfish that may be stocked within the area covered by this Plan or any other specified area within the Plan area. NOTE: Maximum permissible biomass may relate to an area however described by the Director, EPA, including without limitation, tonnes per hectare or total tonnes for the Plan area.	EDO's concerns about not having a maximum permissible biomass on finfish have been outlined in detail in parts 2.3.3 and 3.3 of this submission above. We reiterate that it is unacceptable to leave a decision about the maximum permissible biomass of finfish in the hands of the EPA Director alone.	MFPDs need to impose a cap on maximum permissible biomass of finfish based on the best available science and modelling. Refer to recommendations 13, 17 and 39 above. The cap should specify whether the maximum is set based on head-on gutted or for the whole fish.
1.4.0.	**Environmental Controls Relating to Monitoring**		
	Controls for Finfish Only		

[49] Hargrave, B.T. 2002, A traffic light decision system for marine finfish aquaculture siting, *Ocean & Coastal Management*, Vol. 45, pp 215–235.

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
	Baseline environmental survey requirements		
1.4.1.	Lessees must provide a baseline environmental survey to the satisfaction of the Director, EPA. Such a baseline environmental survey must be undertaken prior to the commencement of marine farming operations on those areas; (a) where a new lease area is being established; or (b) when required as a condition of varying or expanding a lease area; or (c) where a marine farming licence is varied to allow the farming of another species not addressed by the existing baseline survey for the lease. Note: The Director, EPA will use the information from the baseline environmental survey to assess whether the area to be farmed contains any rare or endangered species or any unusual habitat and to determine conditions and requirements relating to environmental management.	A baseline environmental survey should be a condition of all variations or expansions of lease areas, or where other species are proposed to be farmed. Stricter requirements for baseline environmental surveys in the case of variations and expansions of lease areas are in place in existing MFDPs. For example, the Great Oyster Bay and Mercury Passage Marine Farming Development Plan requires: *(iv) For all new lease areas being established, and for all expansions greater than 10% to existing marine farming lease areas, a baseline survey is required before the marine farming operations commence. Data to be collected may include but is not limited to sediment particle size analysis, organic carbon content of the sediment, redox potentials, water flow rates, current flows and composition of the benthic community. Assessment of baseline environmental data will be used to determine future management and monitoring requirements of the lease area.* *(v) For all new lease areas being established, and for all expansions greater than 10% to existing marine farming lease areas the composition of benthic communities will be assessed to determine whether the area to be farmed contains any rare and endangered species or any unusual habitat.*	A baseline environmental survey should be a condition of all variations or expansions of lease areas, or where other species are proposed to be farmed.

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
	Environmental Monitoring Requirements		
1.4.2	Lessees must comply with any environmental monitoring, data analysis, interpretation, audit and review requirements determined by the Director, EPA or Secretary and notice of which is given in writing, as amended by the Director, EPA or Secretary from time to time, at the lessee's expense, using such parties as are approved or nominated by the Director, EPA or Secretary.	Should this Control refer to the Environmental Standard requirements for monitoring etc?	
1.4.6.	For leases that have an associated marine farming licence authorising the farming of finfish, lessees must provide to the Secretary on an annual basis, unless exempted in writing by the Secretary, a production planning report for three years in advance, by lease.	EDO questions the circumstances in which the Secretary would ever need to exempt a lessee from providing an annual production planning report. If there are reasons for exempting the provision of an annual production planning report, these should be published and limited to circumstances where there is no plan to farm any fish in the three-year advance period.	Exemptions for production planning reporting should be published, and be limited to circumstances where there is no plan to farm fish in the coming three-year advance period.
1.4.8.	Lessees must provide to the Manager, Aquaculture Branch, the records detailed at 1.4.8. at the request of the Secretary.	The reference to Control 1.4.8 is an error and should refer to 1.4.7.	
1.4.10.	Environmental data is to be collected at each finfish lease area and analysed to specific standards and in accordance with the requirements for collection, reporting and analysis as specified in the relevant	Should this Control refer to the Environmental Standard requirements for monitoring etc?	

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
	marine farming licence or environmental licence.		
1.12.0.	**Fish Escapes**		
1.12.1.	Lessees must not intentionally release into State waters fish of the species authorised in the relevant marine farming licence unless authorised to do so by that licence.	This Control should also regulate reckless behaviour that leads to the release of fish from finfish farms.	This Control be amended to "Lessees must not intentionally or recklessly release into State waters fish of the species authorised in the relevant marine farming licence unless authorised to do so by that licence."
1.12.2.	Lessees must report to the Secretary any significant incident of fish escapes within 24 hours of becoming aware of the escape. A significant escape is defined as any loss of licensed species to the marine environment in excess of 500 individuals at any one time.	The phrase "at any one time" is uncertain in the context of this control.	A time period for the escape of fish should be identified (e.g. over 1 day).
1.12.3.	Lessees must recover escaped fish when and in a manner as directed by the Secretary.	EDO questions why it should be at the Secretary's discretion as to when and in what manner escaped fish are recovered.	Lessees should be required to take all practicable measures to recover the fish, and there should be penalties for failing to recover the fish.
1.13.0.	**Other Controls**		
1.13.1.	Lessees must comply with guidelines on noise emissions issued by the EPA for marine farming operations.	EDO seeks clarity on whether the referenced guidelines on noise emissions currently exist and whether this clause should also refer to the proposed ambient noise limits that may be included in the Draft Environmental Standard? EDO seeks clarity on whether the definition of "marine farming operations"	The Control should clarify what noise guidelines it refers to, and ensure that those noise guidelines impose strict limits on the noise of boats and other vessels traveling to and from

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
		includes the travel of barges and other vessels to and from the lease? As noted in 2.9.3 above, the noise of boats and other vessels traveling to and from finfish leases has been a consistent issue raised by communities impacted by finfish farming and we believe they should be included in any guidelines on noise emissions.	finfish leases. Refer to recommendation 31.
1.13.3.	Lessees must remove fouling organisms from marine farming equipment as directed by the Secretary or Director, EPA, in a manner that the Secretary or Director, EPA is satisfied will not cause an unacceptable effect on the ecology of the marine environment or nearby shorelines.	It is unclear what is meant by "unacceptable effect" in the context of this draft Control.	"Unacceptable effect" should be clearly defined and there should be some best practice guidelines developed (and applied) that describe appropriate ways of removing fouling organisms in a way that avoids or, at the very least, minimises its harmful effects on the ecology of the marine environment or nearby shorelines.
1.13.4.	Lessees must remove redundant, dilapidated or loose marine farming structures and equipment from State waters as directed by the Secretary.	This Control does not provide a clear onus on finfish farming operators to remove dangerous or redundant equipment, and rather encourages them to wait until they receive a direction to do so. Given operators have the best understanding of the age and state of their equipment, they should have a positive onus to appropriately manage it.	Amend Control to require "lessees must remove redundant, dilapidated, or loose marine farming structures <u>as soon as is practicable, or</u> as directed by the Secretary."
1.13.8.	Lessees must comply with any operational requirements notified by the Secretary in relation to managing, mitigating or avoiding	Given the Government's firm policy that no seal relocations from finfish farms are permitted, this should be reflected in the drafting of the Control. The Control also include a general statement that lessees	The Control include an express statement here that no seal relocations are permitted and a general statement that lessees will

Control	Aquaculture Standard – Marine Farming Management Controls	EDO comments	EDO Recommendations
	interactions with wildlife as defined by the *Nature Conservation Act 2002*.	will seek to achieve best practice wildlife management, using the hierarchy of avoid, minimise and mitigate.	seek to achieve best practice wildlife management, using the hierarchy of avoid, minimise and mitigate.
1.13.9.	The Secretary may, from time to time, determine requirements for the marking and monitoring of marine farming equipment.	The Government says it has a "zero-tolerance policy" on marine farm waste. Given this, the Control should actively prescribe requirements for the marking and monitoring of marine farming equipment to allow for proper regulation and enforcement of this policy.	Consistent with the Government's "zero-tolerance policy" this Control should include a general requirement for all rope and equipment (over a certain size) to be marked according to the lessee.
1.13.14.	In the event of the cessation of marine farming where the holder of the Environmental Licence is unable or unwilling to remediate or monitor the lease area, the Director, EPA may impose a remediation or monitoring plan.	It is unclear from this Control how the remediation or monitoring plan will be enforced. There should be a statement here that says the Lessee or Environmental Licence holder must comply with the remediation or monitoring plan. Furthermore, there should be requirements for the provision of financial assurance of a sufficient quantum to cover the clean-up and remediation of any abandoned marine farming leases.	The Control should say the Lessee or Environmental Licence holder must comply with the remediation or monitoring plan. There should also be a requirement for the provision of financial assurance of a sufficient quantum to cover the clean-up and remediation of any abandoned marine farming leases.