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26 September 2016

Chairperson
Marine Farming Planning Review Panel
GPO Box 44
Hobart TAS 7001

By email: MFPRPOkehampton@dpipwe.tas.gov.au

Dear Mr Midgley,

Proposed Salmonid Farming Operations at Okehampton Bay

The Environmental Defenders Office (Tasmania) Inc (***EDO Tasmania***) is a non-profit, community-based legal service specialising in environmental and planning law. We have a long-standing interest in best practice assessment and regulation of aquaculture.

On Saturday 27 August 2016, the Department of Primary Industries, Parks, Water and Environment (***DPIPWE***) invited submissions addressing terms of reference relating to proposed salmonid farming operations at Okehampton Bay.

Our submission in response to the terms of reference has been hampered by a lack of access to relevant information, such as the marine farming lease and licence issued to Tassal and detailed and comprehensive baseline data for the Okehampton site. As a result of these limitations, we have briefly addressed the first and second terms of reference, but have focussed our attached submission on the third term of reference.

Getting the regulatory framework right is the most effective way to ensure that the marine farming industry can continue in a sustainable manner and with community (and consumer) confidence that environmental impacts are being appropriately managed.

We would welcome the opportunity to appear at a hearing to respond to any questions or provide clarification in relation to the issues raised in this submission.

Yours sincerely,
Environmental Defenders Office
Per:

Claire Bookless
Lawyer

ATTACHMENT 1: Submission into proposed salmonid farming operations at Okehampton Bay

INTRODUCTION

Before addressing the Terms of Reference, we wish to make the following observations regarding the limitations of the review, given its restricted scope and timing. When Minister Rockliff announced the present assessment by the Review Panel, he said:

> *We recognise that it is 20 years since the Plan for the area was first approved, and there have been significant changes to science and technology over that time, and as such this assessment is important for community confidence.*

It is our submission that community confidence in the proposed fish farming at Okehampton Bay will not be improved by the Panel's assessment given that:

- the terms of reference are limited to questions about science and data that has not been fully released to the public;
- the inquiry is predicated on the (disputed) finding that Okehampton Bay is an appropriate location for salmon farming;
- Tassal already has the necessary authorities to proceed with salmon farming at Okehampton Bay; and
- there is ongoing uncertainty regarding future responsibility for monitoring and enforcement activities in relation to salmon farming.

Access to key information

The Minister has confined the Panel's principal terms of reference to whether there is sufficient scientific data to inform the regulation of the proposed salmon farm at Okehampton Bay. As no amount of regulation or monitoring can ameliorate the impacts of an activity at a location that is not capable of supporting it, in our submission the question that should precede an inquiry into the sufficiency of baseline data to support the regulation of the marine farming activities is whether the proposed site is suitable for those activities in the first place.

The *Great Oyster Bay and Mercury Passage Marine Farming Development Plan October 1998* (the ***Plan***) does authorise finfish farming at the Okehampton Bay lease, however the environmental impact statement that informed that authority is now 18-years old. The *Baseline Environmental Assessment of Marine Farming Lease #236 at Okehampton Bay Finfish Farm* (February 2000) by Aquenal Pty Ltd (the ***Baseline data***) is over 16-years old.[1] While these historical datasets are important, they should not be solely relied upon in determining whether Okehampton Bay is an appropriate location for salmon farming.

We understand that Tassal has undertaken more recent environmental monitoring to determine the present suitability of the Okehampton Bay site for salmon farming.[2] Some of this information was published on the Tassal website on 9 September 2016. However, the scientific methodologies relating to the collection of this more recent environmental monitoring data and specific details about Tassal's proposed fish farm operations (including proposed stocking density, cage depth and design) and have not been made available to the public. It is not clear whether these details have been made available to the Review Panel for scrutiny. However, it is difficult to see how the Review Panel could

[1] We note this data was uploaded to the DPIPWE website subsequent to the initiation of the Review Panel assessment.
[2] "Community update – Okehampton" dated 9 September 2016 accessed at http://www.tassal.com.au/community-news/community-update-okehampton/ on 14 September 2016.

make informed recommendations regarding the proper monitoring or regulation of the proposed fish farm in the absence of this information.

In our submission, the lack of public access to this detailed information concerning the proposed salmon farm at Okehampton Bay seriously curtails the ability of interested members of the community to fully participate in the review process. As the first two terms of reference deal directly with data that has not been completely disclosed to the public, it appears likely that Tassal will be the only stakeholder in a position to make sufficiently detailed submissions to the Review Panel in relation to them.

The 2015 Senate Inquiry into the Regulation of Fin-Fish Aquaculture in Tasmania strongly encouraged greater transparency in relation to information provided by the aquaculture industry to DPIPWE, noting that public access to information will "*ensure that interested stakeholders can come to an informed position on areas of concern...*"[3]. EDO Tasmania is disappointed that greater access to the data and other information relevant to the Okehampton Bay proposal has not been provided through this review process.

Timing of the review

Tassal has confirmed that it has already been issued with approval to sublet Marine Farming Lease 236 (the ***lease***) and the Marine Farming Licence (the ***licence***) for the Okehampton Bay site under the *Marine Farming Planning Act 1995* (the ***MFP Act***) and the *Living Marine Resources Management Act 1995* (the ***LMRM Act***) respectively.[4] Therefore, it is unclear what outcome can be expected from this Review.

Further, the Plan is due to be reviewed next year and the Government has recently announced its intention to reform the MFP Act to transfer regulatory responsibility for salmon farming to the Environment Protection Authority (the ***EPA***).

Given the community concern about this project, EDO Tasmania urges the Minister to suspend the operation of Tassal's lease and licence for Okehampton Bay until the Minister has considered the Review Panel's recommendations and details of the legislative amendments have been released.

We further recommend that the scheduled review of the Plan, and announced review of the MFP Act, be used to more fully implement the objectives of the Act and to improve opportunities for the community to have a say in relation to marine farming activities. In particular, we recommend that amendments provide opportunities for third party submissions and merits appeals, similar to those available in relation to discretionary land uses under the *Land Use Planning and Approvals Act 1993*.

Such amendments would provide for better community input into marine farm planning, improve environmental and planning outcomes, and assist in the restoration of community confidence in this important Tasmanian industry.

Our more detailed responses to the specific Terms of Reference are set out below.

[3] Senate Environment and Communications Committee. 2015. Inquiry into Regulation of Fin-fish Aquaculture in Tasmania: Report. Recommendation 3.91: www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Fin-Fish/Report/c03

[4] "Tassal fish farm proceeding despite review". Matt Denholm, *The Australian*, 8 September 2016 accessed at http://www.theaustralian.com.au/business/companies/tassal-fish-farm-proceeding-despite-review/news-story/4cd8f2639fbf4ed7ca69db5bce821cc3 on 15 September 2016.

DETAILED SUBMISSIONS

Terms of Reference:

TOR 1. *The environmental science supporting the proposed environmental monitoring and management of salmon farming at Okehampton Bay within the Great Oyster Bay and Mercury Passage Marine Farming Development Plan October 1998 (as reviewed in 2007) area; and*

TOR 2. *The adequacy of the environmental baseline data and surveys to allow the Director, Environmental Protection Authority to establish a contemporary environmental management regime for the purposed marine farming activity.*

The Baseline data was not publicly available at the outset of the Review Panel submission period (we understand that it was not released by DPIPWE until 8 September 2016). We further note that the Baseline data now available on the DPIPWE website appears to be missing the Appendix containing the benthic survey data.

On 9 September 2016, Tassal published a summary of recent monitoring data on its website.[5] It is unclear if the complete dataset summarised on the Okehampton Bay site has been provided to the Minister in support of Tassal's sublease and licence applications or if the complete dataset will be provided to the Review Panel.

Our submission is based upon the assumption that DPIPWE has access to both the full record of Baseline data and Tassal's complete dataset.

Information concerning water temperature

In relation to the adequacy of the Baseline data, we note the authors' comment at page 11 that "current measurements were taken over a relatively short period of time, and may not reflect year round current flow." A similar observation should have been made for the temperature measurements which appear to have been taken at the same time as the current measurements. The maximum temperature of the water in that period (between February 2000 and April 2000) was 18.3°C at various depths.

On its website, Tassal has published graphs of surface temperature monitoring conducted at the lease site since August 2014. No details have been published in relation to ocean temperatures at the site measured at depths other than surface level. As far as it is possible to ascertain from the published graphs, the maximum monthly surface water temperature reached at the site during this period was in the order of 19°C in January 2016. The previous year, the average maximum monthly surface temperature reached appeared to be 18°C.

The preferred temperature range for Atlantic Salmon farming in Australia is between 16°C and 18°C at a depth of 5m.[6] It is clear from both the Baseline data and more recent environmental monitoring that the Okehampton Bay site regularly experiences water temperatures at or above the upper limit of the ideal temperature range for the growing of salmon.

While we accept that it is a matter for Tassal to undertake due diligence to determine the commercial viability of its proposed operations, we submit that it is the responsibility of Government to ensure that the community and the environment is protected from unsustainable development.

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[5] Found at "Community update – Okehampton" dated 9 September 2016 accessed at http://www.tassal.com.au/community-news/community-update-okehampton/ on 14 September 2016.

[6] Stephen Battaglene, Pheroze Jungalwalla, Barbara Nowak, Zoe Doubleday (2011). "Atlantic Salmon, individual species assessment", In: Pecl GT, Doubleday Z, Ward T, Clarke S, Day J, Dixon C, Frusher S, Gibbs P, Hobday A, Hutchinson N, Jennings S, Jones K, Li X, Spooner D, and Stoklosa R. *Risk Assessment of Impacts of Climate Change for Key Marine Species in South Eastern Australia*. Fisheries Research and Development Corporation, Project 2009/070.

It is acknowledged by experts that the waters of south-eastern Australia, and particularly eastern Tasmania, will be experiencing warmer temperatures induced by climate change.[7] The farming of salmon in warming water temperatures is expected to necessitate the increased use of fresh water for bathing as a treatment for amoebic gill disease and therapeutants and antibiotics to combats the increased incidence of disease.[8] These may have direct and indirect impacts on the Okehampton Bay environment (through the release of these chemicals into the environment), the Prosser River catchment (where the freshwater for the proposed salmon farms is to be sourced) and the broader Tasmanian community (through competition for scarce freshwater resources). Some of these impacts may be capable of mitigation through conditions imposed on the marine farming licence, others may not. A detailed environmental impact assessment is required to identify potential impacts and assess the likely success of mitigation and management strategies.

If, subsequent to the commencement of salmon farming, climate change results in the significant deterioration of water quality, or increases in pests or disease in Okehampton Bay, Tassal may apply for an emergency order from DPIPWE or emergency plan to override the conditions of the existing marine farming development plan.[9] While the Review Panel will review a proposed emergency plan, there is no opportunity for public comment. The best opportunity to secure sustainable, long term marine farming opportunities is to ensure that detailed, realistic water temperature projections are undertaken at the outset, and exposed to public scrutiny.

Modelling of impacts of marine farming wastes

We assume that Tassal has undertaken predictive modelling relating to the deposition and dilution of marine farming wastes at the site in order to support its statement on its website that "*[t]he depth, current speeds and tidal movement indicates that this site will be very assimilative and easily compliant to existing benthic regulations*."[10]

Without access to information about the proposed stocking density, feeding regimes, and cage sizes and depths, it is not possible for other stakeholders to make detailed submissions about whether Tassal's assertion is supported by the science.

Marine farm noise

Industrial marine noise can significantly impact on a variety of marine fauna (particularly marine mammals that rely on echolocation for migration and feeding) and flora. Aquaculture projects may both contribute to, and be affected by, marine noise.

EDO Tasmania submits that any baseline survey should also record the baseline acoustics of the proposed lease site to allow for the imposition of appropriate limits and monitoring of the noise impacts of the operations. Acoustic modelling of the impacts of the proposed marine farming operations would assist in the imposition of reasonable limits on the aquaculture activity.

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[7] Hobday, A. J., Hartog, J, Middleton, J. F., Teixeira, C. E. Luick, J. Matear, R., Condie, S. (2011). Understanding the biophysical implications of climate change in the southeast: Modelling of physical drivers and future changes. FRDC report 2009/056; and Fisheries Research and Development Corporation. El Nemo South East Australia Fact Sheet: Climate Change. Impact on SE Australian Atlantic Salmon Aquaculture. (2012). Accessed at: http://www.frdc.com.au/knowledge/Factsheets/FisheriesVic.Salmon4.pdf on 15 September 2016.

[8] Battaglene *et al*. (2011) (above at footnote 5).

[9] Section 46 MFP Act

[10] "Community update – Okehampton" dated 9 September 2016 accessed at http://www.tassal.com.au/community-news/community-update-okehampton/ on 14 September 2016.

TOR 3. *Adequacy of the Great Oyster Bay and Mercury Passage Marine Farming Development plan October 1998 to allow for the implementation of a contemporary environmental management regime for proposed salmonid farming at Okehampton Bay*

The Plan sets out the 'General Controls for all Marine Farming Zones' from page 119. We have extracted the relevant environmental controls for finfish farms and provided submissions in relation to those provisions below.

Environmental impacts outside lease area

1. General Controls for all Marine Farming Zones

Finfish

There must be no unacceptable environmental impact 35 m outside the boundary of the marine farming lease area. Relevant environmental parameters must be monitored in the lease area, 35 m from the boundary of the marine farm lease area and at any control site(s) in accordance with the requirements specified in the relevant marine farming licence.

The Plan does not provide any guidance as to what is an "unacceptable environmental impact" for fish farms 35 metres outside of the boundary of marine farming lease area. Instead, the "relevant environmental parameters" are set in the relevant marine farming licence. As Tassal's licence has not be made available to the public as part of this Review, we cannot comment on whether the proposed conditions represent best practice or provide a "contemporary environmental management regime."

EDO Tasmania understands that much of the environmental monitoring data provided by marine farm operators is required to be provided to DPIPWE in an electronic form. However, in our experience this environmental monitoring data is not readily made available to interested members of the public in response to Right to Information (***RTI***) applications. In order to improve public confidence and transparency, EDO Tasmania submits that results from environmental monitoring for individual lease sites and reference points should be publically available through the EPA or DPIPWE websites. The transparent release of this information will encourage compliance and may encourage the industry to move further towards best practice environmental management (***BPEM***).

Carrying capacity

1.1 Environmental Controls Relating to Carrying Capacity

Finfish

(i) The maximum stocking density of salmonid fish is 25 kg/m3.

(ii) Lessees must ensure that farmed areas are fallowed as soon as practicable after bubbles of hydrogen sulphide and methane gases form in the sediment and rise to the surface.

(iii) Salmonid finfish nets must be at least 1m clear of the seabed at low tide under normal growing conditions.

In situations where hydrogen sulphide or methane bubbles have been identified as rising from sediment, the Plan makes no prescriptions regarding:

- how long areas must be fallowed following the event;
- notification requirements to the regulator about the event;
- what assessments are required to determine the causes of the event; or
- remediation and mitigation measures that might be undertaken by the fish farm operator (and how these are determined).

EDO Tasmania recommends that the Plan require that these prescriptions be clearly articulated in the licence for the Okehampton Bay site.

In relation to the requirement that finfish nets not be within 1m of seabed, EDO Tasmania notes that this no longer reflects BPEM. A range of studies indicate the depth below the net should be at least twice the depth of the net-pen to allow good water exchange and dispersal of solid wastes. At a minimum, nets should not be within 5m of the sea bed at low tide.[11] We recommend that the Plan, lease and licence reflect this best practice.

Monitoring

1.2 Environmental Controls Relating to Monitoring

Finfish

(i) Lessees for finfish farms must comply with the Environmental Monitoring Program for finfish as specified in the relevant marine farming licence. Lessees must provide the following information on an annual basis to the Marine Resources Division (DPIWE):

a) Total quantity of fish feed used on each lease area per year.

b) A list specifying the quantities of therapeutic treatments, pesticides, anaesthetics, antibiotics, hormones, pigments, antifoulants, disinfectants, cleansers and any other potentially harmful materials which may have been released in each lease area to the marine environment.

c) Location and size of stocked cages on each lease area and areas being fallowed.

(ii) Environmental data are to be collected and analysed to specified standards at each finfish lease area by persons approved and authorised by the Marine Resources Division (DPIWE). The monitoring requirements for collection, reporting and analysis are detailed in the relevant marine farming licence.

(iii) The lessees of all lease areas are required to ensure that an annual underwater survey to assess the extent of marine farming-derived organic sedimentation and the degree of impact on the benthic community is conducted as specified in the relevant marine farming licence.

(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.

Again, without the public release of Tassal's licence, it is not possible to provide detailed submissions regarding the adequacy of the proposed environmental monitoring requirements. However we make the following observations:

- It is not clear whether Tassal has relied solely on the benthic survey undertaken in the Baseline data report in satisfaction of (iv) above. Given the site has been actively

[11] Carina Sim-Smith and Andrew Forsythe. (2013). Comparison of the international regulations and best management practices for marine finfish farming MPI Technical Paper No: 2013/47. National Institute of Water & Atmospheric Research Ltd. at page 12.

farmed for mussels in the intervening period, it is necessary for more contemporary data to be gathered to identify any changes in the values of the benthic environment.

- In addition to the survey of benthic communities for rare or endangered species as required in (v) above, before the establishment of finfish at the Okehampton lease there should be a similar survey of surrounding waters to identify any rare or threatened species that may be impacted by the finfish farming operations. The Baseline data and information available on the Tassal website does not provide any information regarding this issue. If this information represents all the information provided in support of the sublease and licence applications, we submit that an incomplete assessment of the potential environmental impacts of the farming operations has been undertaken.
- References to the *Marine Resources Division (DPIWE)* within the Plan are outdated and no longer reflect the current regulatory environment. While we expect that such references throughout the Plan will be updated in the schedule comprehensive review of the Plan, this reference emphasises the uncertainty about whether the environmental standards for finfish farming are to be enforced by the Marine Resources Division of DPIPWE or by the EPA.

  We submit that it would be appropriate that the EPA be responsible for both setting and enforcing the standards considered necessary to minimise environmental impacts.

Other matters

1.4 Controls on Waste

Wastes from harvesting or processing of produce from marine lease areas and from the removal of fouling organisms from marine farming structures and equipment, such as nets, must be disposed of in a manner that does not affect the ecology of the marine environment or nearby shorelines

It is not clear what "does not affect the ecology of the marine environment or nearby shorelines" in this condition means or how it may be measured. Significantly, this condition does not appear to prevent waste from impacting on other marine users (such as impacts on fishing vessels, or impacts on property owners onshore). To better address these issues, we recommend that the Plan be amended so that it requires that no wastes from harvesting or processing be released outside the lease area. Cleaning of nets should occur onshore,[12] and consideration should be given to biological controls for net bio-foulants to reduce the frequency of net cleaning.

1.8 Other Controls

ii) Lessees must ensure that marine farming operations meet the Department of Primary Industries, Water and Environment guidelines on noise levels, as required under the Environmental Management and Pollution Control Act 1994

As addressed in our submissions in response to TOR 1 and 2, there are increasing scientific studies demonstrating the impacts of industrial marine noise on marine mammals and other fauna. There are presently no conditions in the Plan that specifically set noise limits or require mitigation of noise impacts on marine species. We recommend that the Plan require licence conditions to be imposed setting acceptable noise limits, and these limits reference emissions above background marine noise levels at the lease site.

[12] As recommended in Sim-Smith and Forsythe. (2013) (above at footnote 10) at pages 2 and 26.

Other matters not addressed in the Plan

The following issues are not currently addressed in the Plan, and should be reviewed to ensure that the impacts of marine farming activities are adequately regulated and sustainably managed:

- The Plan (at page 3) refers to variability in the productivity of phytoplankton associated with wind stress and La Nina weather patterns, and warmer subtropical currents reaching further south into Southern Tasmanian coastal waters. However, it is not clear what (if any) adaptive management measures are in place to ensure that Tassal appropriately responds to changes in weather conditions and possible harmful algal blooms.

  There are no alternative finfish locations under the Plan that would provide opportunities for the relocation of fish from the Okehampton Bay lease in the event that negative conditions are encountered over an extended period or more frequently. While emergency powers are available that allow for relocation or redistribution of pens (refer to page 4 of our submission), these powers should be exercised sparingly. Where no appropriate alternative sites have been identified, licence conditions should require de-stocking in the event of changed conditions, rather than allow inappropriate expansions or relocations to deal with events that should have been identified and allowed for in the initial assessment.

- Aquaculture generally and salmon farming in particular is recognised as a significant contributor to greenhouse gas (***GHG***) emissions per unit of production. Aside from the requirement that leases be fallowed following the identification of methane bubbles rising from the seabed, there are no controls in the Plan on GHG emissions from operations at Okehampton Bay or any requirement to report on emissions. We submit that it is appropriate that GHG emissions arising both directly and indirectly from the salmon farming activity be monitored by Tassal with a view to minimisation.

- There are no controls on feeding efficiency containing in the Plan. Again, we recognise Tassal's commercial interest in maximising feed efficiency, however the indirect impact of feed waste on wild fish and other marine populations is significant. The Plan should provide for feed efficiency, maximising the sustainability of feedstock and reporting on volumes of feed per kilogram of fish produced.

As a general comment regarding the regulatory framework, EDO Tasmania submits that operators should be required to notify the regulator of any breach of a lease of licence conditions (similar to the incident reporting requirements under s.32 of the *Environmental Management and Pollution Control Act 1994*) and to include details of non-compliance in annual reports. Incident reports should be publicly available, including details of the regulatory response.

We also submit that, to facilitate regulatory responses to new scientific information and technology, lease and licences should be subject to review every 5 years. This would allow regular assessments of impacts, more responsive approaches to condition setting (particularly regarding stocking density) and timely identification of the need to minimise fish volumes or to cease operations altogether where impacts on the surrounding environment are significantly higher than anticipated.