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18 October 2024

Committee Secretary  
Senate Standing Committees on Environment and Communications  
By email: [ec.sen@aph.gov.au](mailto:ec.sen@aph.gov.au)

Dear Committee,

**Re: *Environment Protection and Biodiversity Conservation Amendment (Reconsideration of Decisions) Bill 2024***

Thank you for the opportunity to comment on the *Environment Protection and Biodiversity Conservation Amendment (Reconsideration of Decisions) Bill 2024 (EPBC Amendment Bill)*. Humane Society International (**HSI**) is one of the world's leading animal protection organisations and HSI Australia established our office in 1994. We work to create a humane and sustainable world for animals advocating across wildlife conservation and animal welfare policy areas.

HSI Australia is a leading expert in the operation of the EPBC Act. We have worked very closely with this piece of legislation since its enactment and have been deeply involved in the reform processes undertaken by both Coalition and Labor governments. We are the organisation that is responsible for a majority of the scientific nominations submitted by the public for the listing of threatened species and ecological communities protected under the EPBC Act, and we have been involved in the recovery processes for many of these species. This has included being a co-nominator for the Maugean skate to be listed as Critically Endangered.

We encourage the Committee to reject this EPBC Amendment Bill outright. We consider this EPBC Amendment Bill to be targeted at a problem that does not exist, and that it would unnecessarily and irresponsibly remove community rights in environmental decision making.

Reconsideration decisions under the EPBC Act facilitate appropriate checks on the operation of actions impacting on Matters of National Environmental Significance (**MNES**) where there are substantial unforeseen changes or new information. Importantly, they provide an opportunity for community members, as well as state and territory governments, to raise concerns about impacts on MNES for as long as those actions are having an impact. The provisions no longer apply once an approval has been granted or after an action is taken. The alternative envisaged by this EPBC Amendment Bill is one where a decision made at a particular point in time provides project proponents in-perpetuity immunity from future increases in harm to MNES if changes do not occur within three years of the first decision, or if concerns are not raised by the state or



territory government in which the action is being taken. This EPBC Amendment Bill would be a significant and indefensible weakening of national environmental protections.

The current EPBC Act provisions relating to reconsiderations already include reasonable safeguards to prevent misuse of the provisions. Under the EPBC Act, the Minister is currently not permitted to reconsider a decision unless there is substantial new information about the impacts that the action will have on a MNES (s. 78(1)(a)), or if there is a substantial change in circumstances that was not foreseen at the time of the first decision that will impact on an MNES (s. 78(1)(aa)), or the management actions that were required at the time of the first decision are no longer in place (s. 78(1)(b-ca)), AND it is not after an approval or after the action is taken. In consequence, there must be a substantial difference between the situation in which the first decision was made and the time of the reconsideration request before the Minister can even consider whether a reconsideration decision should be made. If the Minister decides to undertake a reconsideration, the Minister is not obliged to revoke the first decision, the Minister must be satisfied that a revocation is warranted.

There is no evidence that the existing reconsideration provisions have in any way inappropriately limited development over the 25 year life of the EPBC Act. The example of a reconsideration request that the Explanatory Memorandum claims the Bill is a response to, is an entirely appropriate use of the existing provisions given that the species involved is facing an imminent risk of extinction. As one of the Environmental Defenders Office's (**EDO's**) clients in the request for reconsideration of whether the marine farming expansion in Macquarie Harbour should be a controlled action, HSI Australia reiterates the appropriateness, and indeed the necessity, of the Minister undertaking a reconsideration of the action.

The marine farming expansion in Macquarie Harbour triggers all three requirements for a reconsideration decision to be made, namely substantial new information on the impact of marine farming on the Maugean skate is available; the expansion has created a substantial change in circumstances that were not foreseen at the time of the first decision; and the action is not being taken in line with management actions that were in place at the time of the first decision. In summary, there has been a 47% decline in Maugean skate numbers in Macquarie Harbour between 2014 to 2021. There has been a significant decline in deep water (>10 m) dissolved oxygen conditions in Macquarie Harbour since the expansion of finfish farming; the decline in dissolved oxygen conditions in Macquarie Harbour has been attributed to anthropogenic activities, including finfish farming activities; and there is evidence that dissolved oxygen levels in Macquarie Harbour would improve were it not for finfish farm waste loads and finfish farm oxygen respiration. Further, there have been substantial departures in both regulatory and industry practices from the relevant management actions that were considered in the first decision. More detailed information on the circumstances of this matter is provided in the attached submission made in response to the notice for public comment on three requests for a reconsideration made under s. 78 of the EPBC Act for the expansion of the Marine Farming Expansion, Macquarie Harbour, made on behalf of HSI Australia and the Australian Marine Conservation Society (**AMCS**).

More broadly, this EPBC Amendment Bill goes directly against the recommendations from the Professor Graeme Samuel 10 year review of the EPBC Act<sup>1</sup> to improve community participation in decision-making and transparency of information. Instead, this EPBC Amendment Bill would remove a mechanism by which the community can work to ensure the EPBC Act objects of providing for the protection of the environment, biodiversity and heritage are being achieved. The effect of this EPBC Amendment Bill would be to impair the rights of the community to engage in environmental governance under the EPBC Act. Any ongoing review rights would be limited to the state or territory in which the action is occurring – inherently creating a conflict of interest where those state or territory governments may benefit from the action.

For the reasons outlined above, we recommend the Committee reject this EPBC Amendment Bill. For further information on this submission please contact the author

Yours sincerely,

Nicola Beynon  
Head of Campaigns

Attachment: EDO submission on behalf of HSI Australia and AMCS: Submission on Reconsideration of Referral Decision: Marine Farming Expansion, Macquarie Harbour, Tasmania (EPBC 2012/6406)

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<sup>1</sup> Samuel, G 2020, *Independent Review of the EPBC Act – Final Report*, Department of Agriculture, Water and the Environment, Canberra, October. CC BY 4.0

Attachment



# Environmental Defenders Office

2 February 2024

Hon Tanya Plibersek MP  
Minister for the Environment and Water  
House of Representatives  
Parliament House  
Canberra ACT 2600

**Submitted to Online Portal at <https://epbcpublicportal.awe.gov.au/open-for-comments/project-decision/?id=ad56214a-5d8e-ee11-be36-000d3a794100>**

Dear Minister Plibersek,

## **Submission on Reconsideration of Referral Decision: Marine Farming Expansion, Macquarie Harbour, Tasmania (EPBC 2012/6406)**

We refer to your 4 December 2023 invitation to comment on the reconsideration of the controlled action, particular manner decision relating to the Marine Farming Expansion in Macquarie Harbour, Tasmania (EPBC referral no. 2012/6406) (**Original Decision**).

Environmental Defenders Office (**EDO**) acts for the Australian Marine Conservation Society (**AMCS**) and Humane Society International Australia (**HSI**). We are instructed to provide the following submission on behalf of our clients in response to your invitation.

AMCS is not-for-profit organisation whose objects include supporting the sustainable management of wild harvest and aquaculture fisheries within an ecosystem based management framework and to prevent the loss of Australian marine species, habitats and communities. AMCS has defended and protected Australia's oceans, seas and coasts for over fifty years. Originally set up to protect the Great Barrier Reef from proposals to mine coral from the Reef, their work now extends into every state and territory bordering the coastline, as well as out into the blue backyard of Commonwealth waters. AMCS scientist Dr Leonardo Guida is the environmental-NGO sector representative on the Maugean Skate (*Zearaja maugean*) Recovery Team.

HSI is a not-for-profit organisation concerned with the protection and conservation of wildlife and biodiversity and seeks to create an ecologically sustainable and humane world for all animals and their environments. HSI have more than 25 years of experience promoting the enhancement and protection of wildlife and their habitats in Australia. HSI has more than 10 million supporters globally including 70,000 in Australia.

Our clients have common interests in ensuring urgent action is taken to prevent the extinction of the Maugean Skate and protect its only known habitat, Macquarie Harbour from degradation.

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For all the reasons outlined in the following submission, our clients request:

1. the Original Decision be revoked; and
2. a fresh decision be made such that the action of “the expansion of marine farming operations in Macquarie Harbour, on the west coast of Tasmania [as described in EPBC Act referral 2012/6406]” (the **Action**), is deemed a controlled action which requires an urgent and comprehensive assessment under Part 8 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**).

### **Outline of submission**

The Original Decision recorded that the controlling provisions, under Part 3 of the EPBC Act, were:

- Section 18 and 18A of the EPBC Act, due to the Action’s potential impact on the Maugean Skate which is an EPBC Act-listed endangered species; and
- Sections 12 and 15A of the EPBC Act, due to the Action’s potential impacts on the World Heritage values of the Tasmanian Wilderness World Heritage Area (**TWWHA**), which includes parts of Macquarie Harbour; and
- Sections 15B and 15C of the EPBC Act, due to the Action’s potential impacts on the National Heritage values of the TWWHA which includes parts of Macquarie Harbour.

Section 78 of the EPBC Act provides that the Minister may revoke a controlled action decision where there is:

- substantial new information about the impacts the action has or will have, or is likely to have on matters protected by a provision in Part 3 of the EPBC Act (section 78(1)(a)), and/or
- a substantial change of circumstances that was not foreseen at the time of the original decision, and which relates to the impacts the action has or will have, or is likely to have on matters protected by a provision in Part 3 of the EPBC Act (section 78(1)(aa)); and/or
- the original decision was that the action was not a controlled action because the Minister believed the action would be taken in the manner identified in the particular manner notice attached to the original decision, and the Minister is satisfied that the action is not being, or will not be, taken in the manner identified (section 78(1)(b)).

In this submission, our clients address:

1. The reconsideration of the controlled action decision based on section 78(1)(a) – Substantial new information;
2. The reconsideration of the controlled action decision based on section 78(1)(aa) - Substantial change in circumstances not foreseen;
3. The reconsideration of the controlled action decision based on section 78(1)(b) – Action not taken in the manner identified; and
4. The Decision on the Reconsideration of the Original Decision

In support of this submission, our clients refer to and rely upon our letter of 23 August 2023 on their behalf (**August 2023 letter**) (see **Annexure 1**) in which our clients requested, inter alia, that you reconsider and revoke the Original Decision based on substantial new information about the impacts the Action has or will have, or is likely to have on matters protected by a provision in EPBC Act (section 78(1)(a)), and/or a substantial change of circumstances that were not foreseen at the time of the first decision, and which relates to the impacts the Action has or will have, or is likely to have on a matter protected by a provision in Part 3 of the EPBC Act (section 78(1)(aa)).

Our clients also refer to and rely upon our letter of 20 November 2023 on their behalf (**November 2023 letter**) (see **Annexure 2**) which provided further scientific information in support of our clients' request for your reconsideration of the Original Decision under section 78(1)(aa) of the EPBC Act.

For the sake of completeness, and to provide context to further matters our clients wish to raise in this submission, we briefly summarise the key points in our previous letters in this submission. Our clients also take this opportunity to provide further information in support of the revocation of the Original Decision.

### 1. Section 78(1)(a) – Substantial new information

In summary of our clients' submissions in the August 2023 letter, the following substantial new information is available on the impact of the Action on the Maugean Skate and the TWWHA.

- (a) A 47% decline in the population of the Maugean Skate in the Macquarie Harbour between 2014 and 2021 was identified in the 2023 report by the Institute of Marine and Antarctic Studies (**IMAS**), *Interim report – Macquarie Harbour Maugean Skate population status and monitoring (2023 IMAS Report)*.<sup>1</sup> Further, the 2023 IMAS Report noted a relative scarcity in the juvenile and sub-adult population, indicating that there has been limited recruitment to the population in recent years.<sup>2</sup> The 2023 IMAS Report concluded that the extinction risk of the Maugean Skate is “intrinsicly linked to the health of their restricted habitat” and noted a decline in dissolved oxygen levels caused by “anthropogenic inputs,” including the large-scale development of salmonid aquaculture, and that “[dissolved oxygen] levels and mixing dynamics are of extreme concern for the persistence of the species”.<sup>3</sup>

This information was not available at the time of the Original Decision and provides clear evidence of the substantial impacts of finfish farming on the endangered Maugean Skate.

- (b) This attribution of the likely contribution of the Action to the low dissolved oxygen levels in the benthic environment in Macquarie Harbour aligns with a 2020 report by Wild-Allen *et al* (**Wild-Allen report**) which found that a scenario simulation omitting finfish farm oxygen drawdown and dissolved and particulate waste showed “a 50 per cent reduction in hypoxic water and a 40 per cent reduction in hypoxic sediment area.”<sup>4</sup> Significantly, when this scenario simulation was

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<sup>1</sup> David Moreno and Jayson Semmens (2023) *Interim report - Macquarie Harbour Maugean Skate population status and monitoring*. IMAS (**2023 IMAS Report**). [https://imas.utas.edu.au/\\_data/assets/pdf\\_file/0007/1655611/Maugean-skate-2021-interim-report-FINAL.pdf](https://imas.utas.edu.au/_data/assets/pdf_file/0007/1655611/Maugean-skate-2021-interim-report-FINAL.pdf)/ nocache

<sup>2</sup>Ibid, p.8.

<sup>3</sup> Ibid, p.9.

<sup>4</sup> Karen Wild-Allen, John Andrewartha, Mark Baird, Lev Bodrossy, Elizabeth Brewer, Ruth Eriksen, Jenny Skerratt, Andrew Revill, Kendall Sherrin, Dan Wild. (2020), *Macquarie Harbour Oxygen Process model (FRDC 2016-067)* : CSIRO Final Report. CSIRO Oceans & Atmosphere [https://www.frdc.com.au/sites/default/files/products/FRDC\\_MH\\_Final\\_Rep\\_June\\_2020.pdf](https://www.frdc.com.au/sites/default/files/products/FRDC_MH_Final_Rep_June_2020.pdf) (**Wild-Allen report**), p. 62.

extended for a further two years, “hypoxia was further reduced; healthy water volume increased from 46% in 2017-18 to 56% and healthy sediment area increased from 32% in 2017-18 to 36% of the total harbour area.”<sup>5</sup>

This information was not available at the time of the Original Decision and therefore not provided to the Minister at the time. It constitutes clear and categorical scientific evidence of the impact of finfish farming on the decline of dissolved oxygen levels in Macquarie Harbour.

- (c) A 2022 report by David Moreno *et al*<sup>6</sup> (**2022 IMAS report**) found that Bathurst Harbour was unlikely to hold a viable population of the Maugean Skate and therefore, Macquarie Harbour is the only known habitat and vital for the conservation of the species.

The 2022 IMAS report constitutes substantial new information as it demonstrates the Maugean Skate is not present in any other locations outside of Macquarie Harbour meaning any adverse impacts on the Maugean Skate population in Macquarie Harbour caused by the Action are of much greater significance.

- (d) Finally, in addition to the impact of finfish farming in Macquarie Harbour on dissolved oxygen levels across the whole of the Harbour (including the TWWHA), compliance monitoring undertaken by the Tasmanian Environment Protection Authority (**EPA**) has also documented cases of benthic bacterial matting spreading from Tassal’s lease MF266 into the TWWHA on the eastern side of the Harbour.<sup>11</sup> This information was not available at the time of the Original Decision and provides clear evidence of the substantial impacts of the Action on the abundance of opportunistic species within areas of Macquarie Harbour within the TWWHA.

Our clients also raise the following, additional, substantial new information which they submit provides strong grounds for the reconsideration and revocation of the Original Decision.

- (e) In September 2023, the Department of Climate Change Energy Environment and Water released the *Conservation Advice for Zearaja maugeana (Maugean skate)* (**Conservation Advice**).<sup>7</sup> The Conservation Advice found:

Substantial recent evidence indicates a high risk of extinction for the [Maugean Skate] in the near future. The primary threat to the species is degraded water quality, in particular substantially reduced levels of dissolved oxygen throughout Macquarie Harbour. There is a significant correlation between the reduction in dissolved oxygen levels and increases in salmonid aquaculture due to the bacterial degradation of organic material introduced into the water column from fish-feed and fish-waste.<sup>8</sup>

The Conservation Advice summarises a mounting body of scientific research which has highlighted the urgency of the need to act to address the threats to the Maugean Skate arising from environmental degradation and pollutants in Macquarie Harbour. This research includes the 2023 IMAS, the Wild-Allen and the 2022 IMAS reports. The Conservation Advice further found:

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<sup>5</sup> Ibid, p. 62.

<sup>6</sup> David Moreno, Jawahar Patil, Bruce Deagle & Jayson Semmens (2022) *Application of environmental DNA to survey Bathurst Harbour (Tasmania) for the Endangered Maugean Skate (Zearaja maugeana)*. IMAS. [https://www.imas.utas.edu.au/data/assets/pdf\\_file/0009/1615788/Project-1.33-Final-Report.pdf](https://www.imas.utas.edu.au/data/assets/pdf_file/0009/1615788/Project-1.33-Final-Report.pdf) (**Moreno et al (2022)**)

<sup>7</sup> Department of Climate Change Energy Environment and Water (2023) *Conservation Advice for Zearaja maugeana (Maugean skate)* effective from 6 September 2023, accessible at: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/83504-conservation-advice-06092023.pdf>

<sup>8</sup> Ibid, at p.2.



A population viability analysis (PVA) for the Maugean skate was undertaken in July 2023 (Grant et al. 2023). Currently available demographic and life history information was used to construct models that predicted the risk of extinction within three generation lengths (27 years) covering the period 2014–2041. This PVA estimated a best-case scenario of a population decline of 89% by 2041 and worst-case scenario of > 99% decline, including extinction probabilities of greater than 25% by 2041. When applied to IUCN Red List of Threatened Species (IUCN Red List) criteria, these population reduction estimates would result in a listing of Critically Endangered under IUCN Red List Criterion A4bd. Grant et al. (2023) state that “the risk of extinction in the wild for the Maugean skate appears to be a dire situation requiring urgent management intervention” (page i).

The Conservation Advice sets out four objectives to prevent the extinction of the Maugean Skate:

- By 2024, the dissolved oxygen concentration within Macquarie Harbour waters is substantially improved and sustained (to at least to pre-2009 levels).
- By 2024, an ex-situ captive breeding and insurance subpopulation has been established.
- By 2029, successful Maugean Skate recruitment has been recorded within Macquarie Harbour.
- By 2041, the number of mature Maugean Skate individuals in the Macquarie Harbour subpopulation has been maintained or increased compared to 2020.

The Urgent Priority Actions set out in the Conservation Advice include, before summer 2023/24, to “eliminate or significantly reduce the impacts of salmonid aquaculture on dissolved oxygen concentrations. The fastest and simplest way to achieve this is by significantly reducing fish biomass and feeding rates.”<sup>9</sup>

No action has been taken by Tasmanian regulators to reduce either biomass or feeding rates for finfish farms in Macquarie Harbour since the Conservation Advice was released.

Our clients submit that the Conservation Advice, and the information cited therein, is substantial new information about the impacts of the Action on the Maugean Skate, and provides grounds for the Minister to reconsider and revoke the Original Decision.

## **2. Section 78(1)(aa) - Substantial change in circumstances not foreseen**

The August 2023 and November 2023 letters provide information in support of our clients’ submissions, under section 78(1)(aa) of the EPBC Act, that there has been a substantial change of circumstances that were not foreseen at the time of the Original Decision, and which relates to the impacts the Action has or will have, or is likely to have on a matter protected by a provision in Part 3 of the EPBC Act.

In summary, those letters outlined the following substantial changes in circumstances that were not foreseen at the time of the Original Decision and which establish changes in the impacts of the Action:

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<sup>9</sup> Ibid p.29.



- (a) There has been a 47% decline from 2014 to 2021 in Maugean Skate numbers in Macquarie Harbour.<sup>10</sup>
- (b) There had been a significant decline in deep water (>10 m) dissolved oxygen conditions in Macquarie Harbour over the previous decade since the expansion of finfish farming.<sup>11</sup>
- (c) There is “mounting evidence” that “low dissolved oxygen conditions are impacting the Maugean Skate population, including inducing mortality events”.<sup>12</sup>
- (d) The decline in dissolved oxygen conditions in Macquarie Harbour is attributed to anthropogenic activities, including finfish farming activities,<sup>13</sup> and there is evidence that dissolved oxygen levels in Macquarie Harbour would improve were it not for finfish farm waste loads and finfish farm oxygen respiration.<sup>14</sup>
- (e) The oceans around Tasmania are a global hotspot, with anomalously high warming. Waters just offshore of Macquarie Harbour have had the fastest rate of warming over the past decade (of 0.5°C). The National Oceanic and Atmospheric Administration’s monthly diagnostic report indicates that there is a strong possibility that this summer’s El Nino could become a historically strong event (>2.0°C).<sup>15</sup> The outlook for water temperatures in Macquarie Harbour is, therefore, dire this summer. Drawdown of dissolved oxygen in subsurface waters of the Harbour during summer will be greatly exacerbated—by both the warmer waters decreasing the solubility of oxygen and the warmth also enhancing the rate of microbial decomposition processes exhausting dissolved oxygen – putting the Maugean Skate at greater risk of mortality.<sup>16</sup>

Our clients raise the following, additional substantial changes in circumstances not foreseen at the time of the Original Decision, which they consider provide strong grounds for the revocation of the Original Decision.

(f) Ocean warming

The IMAS Assessment of the Macquarie Harbour Broadscale Environment Monitoring Program (**BEMP**) found that the mean bottom water temperatures in Macquarie Harbour have risen approximately 2°C between 1993 and 2020.<sup>17</sup> Monthly and weekly sea surface temperature and

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<sup>10</sup> 2023 IMAS report, p.8.

<sup>11</sup> Ibid, p.2.

<sup>12</sup> Ibid, p.2.

<sup>13</sup> Ibid, p.2.

<sup>14</sup> Wild-Allen report, p. 62.

<sup>15</sup> ABC, 16 November 2023, <https://www.abc.net.au/news/2023-11-16/holder-nsw-el-nino-set-to-peak-as-one-of-the-strongest/103104264>. Accessed 17 November 2023.

<sup>16</sup> Increasing temperatures result in higher oxygen consumption rates in elasmobranchs including Maugean skates, meaning skates that are already stressed by low dissolved oxygen or hypoxic conditions (either caused or exacerbated by finfish farming), will be at heightened mortality risk: see Moreno, D., Lyle, J.M., Semmens, J.M., 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, at [48]. Accessed at [https://www.imas.utas.edu.au/data/assets/pdf\\_file/0007/1394224/2016-068-DLD.pdf](https://www.imas.utas.edu.au/data/assets/pdf_file/0007/1394224/2016-068-DLD.pdf) (**Moreno et al (2020)**)

<sup>17</sup> Ross J, Moreno D, Bell J, Mardones J & Beard J (2022) *Assessment of the Macquarie Harbour Broadscale Environment Monitoring Program (BEMP) data from 2011 – 2020*. Institute for Marine and Antarctic Studies, University of Tasmania, Hobart, Tasmania, at p 46. Available at: <https://epa.tas.gov.au/documents/IMAS%20Assessment%20of%20Macquarie%20Harbour%20BEMP%20data%20from%202011%20to%202020%2c%20March%202022.pdf> (**Ross et al (2022)**).

Indian Ocean Dipole trends around Macquarie Harbour have trended above average over the 2023/2024 summer.<sup>18</sup>

Temperature increases are associated with reduced solubility of oxygen in these bottom waters.<sup>19</sup> This long-term increase in bottom water temperature compounds the impacts both of the Action and the marine heatwave discussed at (e) on dissolved oxygen levels in bottom waters, and therefore on the Maugean Skate habitat.

This significant warming of bottom water temperature amounts to a substantial change in circumstances that was not foreseen at the time of the Original Decision.

(g) Captive breeding

The Conservation Advice for the Maugean Skate identified a captive breeding program as an urgent priority before the 2023-24 summer to establish a long-term insurance population for the species.<sup>20</sup> However, as outlined in part 1(e) of the submission above, this program was one of a number of urgent priority actions to be implemented before the summer of 2023 to stem the massive decline in the Maugean Skate population and prevent the species' extinction (the highest priority was given to increasing the levels of dissolved oxygen in Macquarie Harbour via the reduction in salmonid aquaculture organic loads and/or utilisation of mechanical/engineering environmental remediation technologies).<sup>21</sup>

Last year, \$2.1 million was allocated by Commonwealth Government, followed by \$2.1 million from the Tasmanian Government to establish a captive breeding program for the Maugean Skate.

Unfortunately, by early January 2024, two of the four adult Skates taken into the captive breeding program had died within only weeks of their capture in mid-December.<sup>22</sup> While investigations are underway to determine the causes of death for these Skates, the mortalities suggest that the captive breeding program faces significant challenges, including obtaining healthy individuals and eggs from an environment that is significantly degraded. Thus, the captive breeding program cannot presently be relied upon as a sole recovery action, without addressing the impact of the finfish farming undertaken through this Action.

In circumstances where the likely success of captive breeding programs for the Skate is unknown, the conservation of wild populations is significantly more important. Both the critical and "urgent" requirement for the captive breeding program for the Maugean Skate and the challenges it faces are substantial changes in circumstances not foreseen at the time of the Original Decision.

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<sup>18</sup> Bureau of Meteorology, <http://www.bom.gov.au/climate/ocean/sst/#/anom/indian/monthly/20231201> & <http://www.bom.gov.au/climate/enso/index.shtml#tabs=Indian-Ocean&indian=Forecast> accessed 31 January 2024.

<sup>19</sup> Ross et al (2022) p. 46-47, 65.

<sup>20</sup> Conservation Advice, p. 30.

<sup>21</sup> Ibid at p 2.

<sup>22</sup> ABC, 16 January 2024, <https://www.abc.net.au/news/2024-01-16/maugean-skate-insurance-population-issues/103321266> accessed on 25 January 2024.

### 3. Section 78(1)(b) – Action not taken in the manner identified

In the August 2023 letter, we outlined departures in both regulatory and industry practices from the particular manners in the Original Decision. In particular, the August 2023 letter observed that the Particular Matter Notice attached to the Original Decision:

- (a) Required the Action to be carried out in accordance with, inter alia, the Macquarie Harbour Marine Farming Development Plan October 2005 (**MFDP**) and future amendments, and for a water quality monitoring program to be undertaken in accordance with marine farming licence conditions. However, marine farming licences issued under the *Living Marine Resource Management Act 1995* (Tas) no longer provide requirements for any water quality monitoring programs;
- (b) Referred to “Targeted Management Responses”, including directions from the Secretary of the department administering the *Marine Farming Planning Act 1995* (Tas), and the *Living Marine Resources Management Act 1995* (Tas) (the Department of Natural Resources and Environment Tasmania) in response to “substantial benthic visual, physio-chemical or biological impacts”. However, since the Original Decision there have been significant changes to the statutory regulators for marine farming in Tasmania, such that the Secretary no longer has a role in determining biomass or nitrogen limits or distribution in Macquarie Harbour; and
- (c) Referred to the presence of numerous opportunistic polychaetes (worms) as an indicator of substantial benthic visual impact to establish whether “Targeted Management Responses” should be taken, however, the presence or absence of these worms is no longer used by regulators to determine management decisions.<sup>23</sup>

Our clients previously requested that you direct the Department to investigate the above issues to determine whether the Action has been or is being taken in the manner identified in the Original Decision. It is unclear whether such investigations by the Department have been made or are ongoing.

In addition to seeking those investigations, our clients now submit that the above issues indicate that the Action is not being carried out in accordance with the Particular Manner Notice attached to the Original Decision and that they constitute grounds for the Original Decision to be revoked under section 78(1)(b) of the EPBCA Act.

Below, we detail some further ways that our clients consider the Action is not being carried out as was originally intended under the Particular Manner Notice.

#### (d) Ammonia, Nitrate and Dissolved Oxygen Management

The Particular Manner Requirements attached to the Original Decision made it clear that the interim “Limit Levels” for a range of parameters (ammonia, nitrate and dissolved oxygen), will be reviewed in mid-2013 and subsequently prescribed in marine farming licence conditions,<sup>24</sup> however, it appears that this has not occurred.

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<sup>23</sup> See Environment Protection Authority (2017) *Macquarie Harbour Tasmanian Wilderness World Heritage Area Environmental Status Report*, May 2017, EPA, Tasmania at p 14.

<https://epa.tas.gov.au/Documents/Macquarie%20Harbour%20TWWHA%20Environmental%20Status%20Report.%20EPA.%20May%202017.pdf>; and Letter from Tasmanian EPA to Southern Ocean Trout dated 20 February 2023, accessed at: <https://epa.tas.gov.au/Documents/EPA%20RTI%20011%20-%20Part%20A5%20-%20Southern%20Ocean%20Trout.pdf>

<sup>24</sup> Refer to the manners outlined at (2)(f) and in the definition of “Limit Levels” in the Particular Manner Notice.

The Federal Court decision in *Huon Aquaculture Group Limited v Minister for the Environment* [2018] FCA 1011 detailed (at [52]) how the then-Department of Primary Industries Parks Water and the Environment (DPIPWE, now the Department of Nature Resources and Environment Tasmania) assured the Environment Assessments Branch of the then-Commonwealth Department of Environment during its assessment of the referral of the Action that the proposed interim limit levels for ammonia, nitrate and dissolved oxygen would be reviewed and updated, and enforced through new marine farming licence conditions. DPIPWE assured the Commonwealth that these reviewed limit levels would be set in the marine farming licence conditions following “a recalibrated biogeochemical and hydrological model that will be informed, amongst other things, by at least 12 months of water quality data collected from the harbour, and further predictive modelling.” However, evidence led by the finfish farming companies in that Federal Court case suggests that such a review did not occur, or if it did, it was never finalised and no new Limit Levels for ammonia, nitrate and dissolved oxygen were ever imposed by the Tasmanian Government on the Macquarie Harbour marine farming licences.<sup>25</sup>

Despite the wealth of scientific evidence demonstrating that there is a need for dissolved oxygen limits in the bottom and mid-waters,<sup>26</sup> there remain no “Limit levels” for dissolved oxygen under the marine farming licences issued for Macquarie Harbour. Indeed, there are now no longer any “Limit Levels” for any of the parameters set out in the Particular Manner Notice prescribed in marine farming licence conditions *at all*.<sup>27</sup>

The lack of any limit levels for ammonia, nitrate and dissolved oxygen in marine farming licences was not envisaged in the Particular Manner Notice and provides strong grounds for you to find, under section 78(1(b) of the EPBC Act, that the Action is not being taken as in the manner identified in the notice.

This situation leads to the next issue: despite the significant changes in the way the Macquarie Harbour finfish farms are regulated in Tasmania, the State-based regulation of finfish farming in Macquarie Harbour continues to be inadequate to “ensure there are no significant impacts on the Tasmanian Wilderness World Heritage Area and the Maugean Skate as a result of water quality changes” or “changes to the benthic environment” per the Particular Manner notice.

(e) The Tasmanian regulatory regime is insufficient to ensure there are no significant impacts on the Tasmanian Wilderness World Heritage Area and the Maugean Skate

The Particular Manner Notice attached to the Original Decision relies on the finfish farms’ compliance with, inter alia, the Macquarie Harbour Marine Farming Development Plan October 2005 (**MFDP**) and future amendments to ensure the Action causes no significant impacts on the Maugean Skate and the Tasmanian Wilderness World Heritage Area.

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<sup>25</sup> See *Huon Aquaculture Group Limited v Minister for the Environment* [2018] FCA 1011 at [78]-[79], [81] – [87], [104].

<sup>26</sup> See Conservation Advice at p.30; Ross et al (2022) p.100-101; Black, K., Tett, P. & H. Reinardy (2022). *Review of the broad-scale environmental monitoring programs: Macquarie Harbour*. A report by SAMS Enterprise for EPA Tasmania, p.49 accessed at

<https://epa.tas.gov.au/Documents/SAMS%20International%20Macquarie%20Harbour%20BEMP%20Review.pdf> (**SAMS report**); Moreno et al (2020) p.47-49.

<sup>27</sup> Refer to the marine farming licences issued to finfish farms in Macquarie Harbour, which can be accessed on the LIST Map (<https://maps.thelist.tas.gov.au/listmap/app/list/map?bookmarkId=433932>) under the heading “Marine Farming Licences”.

The MFDP was last updated in 2016 to allow for the Director of the EPA to set the total permissible dissolved nitrogen output and apportion this total across the plan area. Since this time, there have been substantial changes to the way finfish farming is regulated under Tasmanian law, changes that are not contemplated by or allowed for under the Particular Manner Notice. There has also been substantial new scientific information collected demonstrating the clear and adverse impact finfish farming is having on both the harbour and the Skate (some of which is set out in parts 1 and 2 of this submission above). Concerningly, the Tasmanian regulatory changes for finfish farming have not adequately responded to the latest information on the threats to the Maugean Skate and the TWWHA.

Since 2018, Macquarie Harbour finfish farms have been formally subject to regulation by the EPA through environmental licences issued under the *Environmental Management and Pollution Control Act 1994* (Tas) (**EMPC Act**). Despite the Director EPA having substantial new information detailing the decline of dissolved oxygen in bottom waters and mid-waters since the expansion of finfish farming in Macquarie Harbour, and numerous scientific reports recommending the imposition of clear trigger levels for dissolved oxygen in bottom and mid-waters,<sup>28</sup> the environmental licences that were reissued for finfish farms in Macquarie Harbour in December 2023 have simply replicated the interim Limit Levels for dissolved oxygen in the Particular Manner Notice,<sup>29</sup> and have not imposed any more stringent trigger levels to ensure the ongoing health of either Macquarie Harbour or for the Maugean Skate.

Since December 2023, the environmental licences for Macquarie Harbour finfish farms contain conditions requiring the development of Dissolved Oxygen Consumption Reports, Dissolved Oxygen Mitigation Plans, and Water Quality Monitoring Programs.<sup>30</sup> However, these reports, plans and programs are yet to be finalised and again, do not provide for the setting of clear Limit Levels to be achieved for dissolved oxygen in bottom- and mid-waters under the finfish farms, or throughout the harbour more generally.

The new framework of regulating the environmental impacts of finfish farming through environmental licences issued by the EPA Director under the EMPC Act was not envisaged in the Particular Manner Notice. Furthermore, the failure of this new regulatory regime to impose appropriate Limit Levels for dissolved oxygen for bottom and mid-waters to protect the Maugean Skate, and Macquarie Harbour more generally from significant impacts from finfish farming was also not contemplated at the time the Original Decision was made. Our clients submit that both matters provide strong grounds for you to find, under section 78(1)(b) of the EPBC Act, that the Action is not being taken in the manner identified in the notice attached to the Original Decision.

(f) Proposed Macquarie Harbour Oxygenation Project

As already mentioned, the environmental licences for finfish farms in Macquarie Harbour issued by the EPA contain conditions requiring them to submit a Dissolved Oxygen Mitigation Plan to the EPA by 24 April 2024. These plans must “contain a detailed description of the measures that will be implemented to offset or reduce the calculated dissolved oxygen demand”. The environmental

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<sup>28</sup> See Conservation Advice at p.30; Ross et al (2022) p.100-101; Black, K., Tett, P. & H. Reinardy (2022). SAMS report, p.49; Moreno et al (2020) p.47-49.

<sup>29</sup> Refer to condition G3 of the environmental licences issued to finfish farms in Macquarie Harbour, which can be accessed on the LIST Map (<https://maps.thelist.tas.gov.au/listmap/app/list/map?bookmarkId=433932>) under the heading “EPA Regulated Premises”.

<sup>30</sup> See for example, conditions D01, D02 and D03, in Petuna Aquaculture Pty Ltd’s [Environmental Licence 9891/3](#).

licences note that these conditions, “may be satisfied via a collaborative industry approach which meets the requirements of [these conditions] simultaneously for multiple finfish farming leases”.<sup>31</sup>

Mr Martin, CEO of Salmon Tasmania, recently said that “the [Macquarie Harbour Oxygenation Program] aims to improve the oxygenation as part of a two-year trial with the intention to offset the whole of the industry’s oxygen usage in the harbour”.<sup>32</sup> Based on this statement, our clients understand that it is intended that the Macquarie Harbour Oxygenation Program (**MHOP**) will be one of the measures described under the finfish companies’ Dissolved Oxygen Mitigation Plans under their environmental licence conditions.

While our clients are supportive of all efforts to remediate the finfish farming impacts on Maugean Skate habitat and Macquarie Harbour more generally, they have serious questions and concerns about both the efficacy and risks associated with the proposed MHOP. These questions and concerns are set out in more detail in **Annexure 3** to this submission.

However, for the purposes of this submission, it is sufficient to note that the MHOP was neither contemplated in the referral for the Action, nor the Particular Manner Notice attached to the Original Decision. Our clients submit that the proposal by the finfish companies and the Tasmanian regulator, the EPA, to use the MHOP to address the significant adverse impacts finfish farming is having on the Maugean Skate and its habitat in Macquarie Harbour provides a strong ground for you to find, under section 78(1)(b) of the EPBC Act, that the Action will not be taken in the manner identified in the notice.

#### **4. Decision upon Reconsideration of the Original Decision**

In this submission, we have outlined the extensive grounds our clients consider justify the reconsideration of the Original Decision under section 78 of the EPBC Act.

Upon the reconsideration of the Original Decision, our clients urge you to:

- (a) revoke the Original Decision;
- (b) under section 75 of the EPBC Act, decide that the Action is a controlled action due to its significant impacts on matters protected under Part 3 of the EPBC Act; and
- (c) decide that the Action should be urgently and comprehensively assessed under Part 8 of the EPBC Act.

Our clients consider that if all of the scientific information now available had been known at the time of the Original Decision in 2012, the Minister would have found the Action was a controlled action under section 75 of the EPBC Act due to its significant impacts on the matters protected under Part 3 of the EPBC Act, namely an endangered species, the Maugean Skate, the World Heritage values and National Heritage values of the TWWHA.

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<sup>31</sup> See for example, condition D02 in Petuna Aquaculture Pty Ltd’s [Environmental Licence 9891/3](#).

<sup>32</sup> The Mercury, 24 January 2024. *Macquarie Harbour Skate Oxygen Project Moves Closer As Wombat Shuffles Into Position*. <https://www.themercury.com.au/news/macquarie-harbour-skate-oxygen-project-moves-closer-as-wombat-shuffles-into-position/news-story/b87e00267846742f933e28d69cecb1b2> accessed 24 January 2024.



Specifically, the current scientific evidence is that the Action has had a significant impact on the endangered Maugean Skate, including by:<sup>33</sup>

- leading to a long-term significant decrease in the size of the Maugean Skate population (with the estimated “best-case scenario” of a population decline of 89% by 2041 and worst-case scenario of > 99% decline, including extinction probabilities of greater than 25% by 2041)<sup>34</sup>;
- reducing the area of occupancy of the species;
- adversely affecting habitat critical to the survival of the species;
- disrupting the breeding cycle of a population of the Maugean Skate;
- modifying, destroying, removing, isolating or decreasing the availability or quality of habitat to the extent that the species is likely to decline; and
- interfering with the recovery of the species.

The evidence is that the Action is also significantly impacting the World Heritage and National Heritage values of the TWWHA in the following ways:

- contributing to the decline in dissolved oxygen in Macquarie Harbour, substantially damaging the habitat important for the conservation of biological diversity (including but not limited to the endangered Maugean Skate) within the TWWHA;
- causing a significant, long-term reduction in the rare, endemic and unique population of the Maugean Skate within the TWWHA; and
- substantially increasing concentrations of suspended sediment, nutrients, and other pollutants in Macquarie Harbour within the TWWHA, with substantial, long-term and/or permanent impacts on both the harbour and its relevant values.

The precautionary principle must be applied to the reconsidered decision under section 75. Our clients submit that lack of full scientific certainty about the relative contribution of finfish farming to impacts on the Maugean Skate and the TWWHA should not be used as a reason for postponing measures regulating the Action to prevent degradation of the Maugean Skate habitat and Macquarie Harbour more generally.

Our clients further submit that it would be inappropriate for the Action to be determined to be not a controlled action provided it is undertaken in accordance with particular manners (**NCA-PM**). As has been demonstrated over the past decade, an NCA-PM decision is insufficient to regulate the serious adverse impacts of the Action on matters protected under Part 3 of the EPBC Act. The finfish companies undertaking the Action and the Tasmanian regulators have proven time and again that they are either unwilling or unable to prevent the significant impacts of the Action on the endangered Maugean Skate and the World Heritage-listed Macquarie Harbour.

The current, and projected decline of the Maugean Skate necessitates urgent coordinated action to protect Macquarie Harbour as its habitat. Consequently, our clients consider the only feasible option in all the circumstances is for the Action to be urgently and thoroughly assessed under Part 8 of the EPBC Act.

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<sup>33</sup> Department of Climate Change, Energy, the Environment and Water, *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*, accessed at: [https://www.dcceew.gov.au/sites/default/files/documents/nsg-guidelines\\_1.pdf](https://www.dcceew.gov.au/sites/default/files/documents/nsg-guidelines_1.pdf)

<sup>34</sup> Conservation Advice, at p 4.



## **Conclusion**

This submission has outlined how the Particular Manner Notice attached to the Original Decision relied on Macquarie Harbour finfish farms' adherence to (now outdated) Tasmanian regulatory processes which have failed to prevent significant adverse impacts arising from the Action on the Maugean Skate and the TWWHA.

The submission has provided scientific evidence that so-called 'adaptive management' responses taken by Tasmanian regulators and finfish farms to date have been ineffective in improving the benthic and deep-water environment in Macquarie Harbour or in ensuring the ongoing survival of the remaining Maugean Skate population. Consequently, there is a clear and present danger that the Maugean Skate will become extinct in the wild within 10 years.

Our clients consider the scientific evidence as to the deteriorating benthic environment in Macquarie Harbour and the risk to the survival of the Maugean Skate to be indisputable and that there is a need for you to take urgent steps to avoid, remedy and mitigate the harm being caused to Macquarie Harbour and the Maugean Skate by the action.

In these circumstances, our clients urge you to revoke the Original Decision and substitute it with a new decision that the Action is a controlled action on the basis that:

- (a) Substantial new information exists that the action has had and is having a significant impact on the Maugean Skate and the TWWHA (section 79(1)(a));
- (b) There are substantial changes in circumstances that were not foreseen at the time of the Original decision and which warrant further protections for the Maugean Skate and the TWWHA (section 78(1)(aa)); and
- (c) The Action has significantly departed from the manners outlined in the notice attached to the Original Decision (section 78(1)(b)).

In making a fresh decision under section 75 of the EPBC Act, our clients urge you to apply the precautionary principle and resist placing any further reliance on the Tasmanian regulatory regime to protect the Maugean Skate and its habitat going forward.

Should you have any questions concerning matters raised in this submission, please contact our office

Yours sincerely,

**Environmental Defenders Office**

**Claire Bookless**

Managing Lawyer – lutruwita/Tasmania

Our reference numbers: S5617 and S5619

Enc:

Annexure 1 – August 2023 Letter

Annexure 2 – November 2023 Letter

Annexure 3 – Macquarie Harbour Oxygenation Project - Questions and concerns

## Annexure 1 – August 2023 letter



# Environmental Defenders Office

23 August 2023

Hon Tanya Plibersek MP  
Minister for the Environment and Water  
House of Representatives  
Parliament House  
Canberra ACT 2600

**By email:** [Minister.Plibersek@dcceew.gov.au](mailto:Minister.Plibersek@dcceew.gov.au)

Dear Minister Plibersek,

**Requests for reconsideration of decision on referral numbered EPBC 2012/6406 and investigation into compliance with the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)***

Environmental Defenders Office writes on behalf of the Australian Marine Conservation Society and Humane Society International Australia to seek your urgent action to respond to the impacts of finfish farming on the endangered Maugean Skate (*Zearaja maugean*) and the Tasmanian Wilderness World Heritage Area.

Our clients request you take the following actions to respond to the immediate threats posed by finfish farming on these matters of national environmental significance:

1. Reconsider and revoke the Controlled Action Decision relating to the Marine Farming Expansion in Macquarie Harbour (EPBC referral no. 2012/6406) on the basis of substantial new information about the impacts the action has or will have, or is likely to have on a matter protected by a provision in Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (**EPBC Act**) (section 78(1)(a)), and/or a substantial change of circumstances that were not foreseen at the time of the first decision, and which relates to the impacts the action has or will have, or is likely to have on a matter protected by a provision in Part 3 of the EPBC Act (section 78(1)(aa)).
2. Direct the Department to investigate compliance with the Particular Manner Notice requirements attached to the Controlled Action Decision for EPBC referral no. 2012/6406.
3. Direct the Department to investigate whether the finfish farming currently being undertaken in Macquarie Harbour is the same as the Action that was the subject of EPBC referral no. 2012/6406.

Further detail concerning each of these requests is outlined below.

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## Annexure 1 – August 2023 letter

### 1. Reconsideration of controlled action decision

As you are aware, on 3 October 2012 the former Federal Environment Minister, the Hon Tony Burke MP, decided that the “Marine Farming Expansion in Macquarie Harbour” (the **Action**) outlined in EPBC referral no. 2012/6406 (**Referral**) was not a controlled action under sections 75 and 77A of the EPBC Act. In this letter, this is referred to as the **Controlled Action Decision**. As the then-Minister considered the action could be carried out in a particular manner, no assessment or approval was required under the EPBC Act.

Under section 78A of the EPBC Act, our clients request that you reconsider the Controlled Action Decision. We note the mandatory requirements in section 78B of the EPBC Act that now apply regarding the need to inform interested persons of the request and invite comments within 10 business days. Given the significance of this reconsideration request, pursuant to section 78B(6), we urge you to publish this request and an invitation to comment on the internet as a matter of urgency.

We understand that the Australia Institute have already written to you on 8 June 2023 requesting the reconsideration of the Controlled Action Decision. Our clients strongly support that request and, to the extent that the two requests overlap, do not seek to repeat or detract from its content.

#### 1.1 Limitation under section 78(3) of the EPBC Act does not apply in this case

Section 78(3) of the EPBC Act prohibits the reconsideration of controlled action decisions where an action has been “taken”.

As a preliminary issue, we note the Department of Climate Change, Energy, the Environment and Water (**Department**) has previously expressed a view that the Action the subject of the Referral has been “taken”.<sup>1</sup> On this view, it would not be open for you to reconsider the controlled action decision due to the operation of the prohibition in section 78(3) of the EPBC Act.

We note that the Department’s position on whether the Marine Farming Expansion in Macquarie Harbour has been “taken” does not accord with the Federal Court’s decision in *Huon Aquaculture Group Ltd v Minister for the Environment*.<sup>2</sup> In that case, Huon Aquaculture had argued that the controlled action decision concerning the Marine Farming Expansion in Macquarie Harbour could not be reconsidered due to the operation of section 78(3) of the EPBC Act.

However, his Honour Justice Kerr relevantly found at [221]-[223]:

...Such a construction is implausible: it would neuter the substantive provision. Moreover as a matter of pure text such a construction is inconsistent with the language in which the prohibition is expressed. Section 78(3) prohibits the Minister revoking a decision “**after** ... the action is taken”. Thus for so long as an action is ongoing, the prohibition has no application.

In this matter, the short description of the “action” (the subject of the Minister’s decision) encompassed not only the construction of sea pens but also the ongoing operation of

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<sup>1</sup> Question SQ23-000926 asked by Senator Whish-Wilson in Budget Estimates Outcome 2 on 23 May 2023 and the responses of Mr Edwards of the Department of Climate Change, Energy, the Environment and Water.

<sup>2</sup> [2018] FCA 1011; BC201805846. See at [221]-[222].

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marine farming. The action was still ongoing in mid 2014. It has remained ongoing to the present.

I am satisfied that as at the end of September 2014 it was open to Huon [Aquaculture] to have requested that the Minister reconsider the decision. ...

Plainly, given this finding of the Federal Court, you have the power to reconsider the controlled action decision.

We provide further detail concerning the bases for the reconsideration of the controlled action decision below.

### **1.2 Bases for the Reconsideration of the Controlled Action Decision**

The Controlled Action Decision recorded that the controlling provisions (under Part 3 of the EPBC Act) were:

- (a) Section 18 and 18A of the EPBC Act, due to the action's potential impact on the Maugean Skate which is an EPBC Act-listed endangered species; and
- (b) Sections 12 and 15A of the EPBC Act, due to the action's potential impacts on the world heritage values of the Tasmanian Wilderness World Heritage Area (**TWWHA**), which includes parts of Macquarie Harbour; and
- (c) Sections 15B and 15C of the EPBC Act, due to the action's potential impacts on the National Heritage values of the TWWHA which includes parts of Macquarie Harbour.

Section 78 of the EPBC Act provides that the Minister may revoke a decision where there is:

- (a) substantial new information about the impacts the action has or will have, or is likely to have on matters protected by a provision in Part 3 of the EPBC Act (section 78(1)(a)), and/or
- (b) a substantial change of circumstances that was not foreseen at the time of the first decision, and which relates to the impacts the action has or will have, or is likely to have on matters protected by a provision in Part 3 of the EPBC Act (section 78(1)(a))

Our clients request your reconsideration of the controlled action decision based on **both** the above provisions.

#### 1.2.1 Section 78(1)(a) - Substantial new information

There is substantial new information about the impacts that the action has or will have, or is likely to have on matters protected by a provision in Part 3.

This substantial new information includes the 2 May 2023 report by the Institute of Marine and Antarctic Studies, *Interim report – Macquarie Harbour Maugean Skate population status and monitoring (the 2023 IMAS report)*.<sup>3</sup> The 2023 IMAS report was based on 2021 sampling undertaken at three sites, including one within the TWWHA. The 2023 IMAS report followed the funding of additional surveys by the Tasmanian sustainable marine research collaboration agreement (SMRCA) for a further three years from February 2021 to December 2023. However,

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<sup>3</sup> David Moreno and Jayson Semmens (2023) *Interim report - Macquarie Harbour Maugean Skate population status and monitoring*. IMAS. [https://imas.utas.edu.au/data/assets/pdf\\_file/0007/1655611/Maugean-Skate-2021-interim-report-FINAL.pdf](https://imas.utas.edu.au/data/assets/pdf_file/0007/1655611/Maugean-Skate-2021-interim-report-FINAL.pdf)



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such was the extinction risk to the Maugean Skate that IMAS issued an interim report of results before the project's completion. Of itself, this is substantial new information.

The 2023 IMAS report findings are of grave concern and call for urgent action. The report found there has been a 47% decline from 2014 to 2021 in Maugean Skate numbers in Macquarie Harbour.

It is important to emphasise that, at the time of the Controlled Action Decision, it was thought a viable Maugean Skate population also lived at Bathurst Harbour. However, a separate IMAS report by David Moreno *et al*<sup>4</sup> (**2022 IMAS report**) found extremely low levels of Maugean Skate DNA traces in Bathurst Harbour indicating that a viable population in that location is unlikely, and uncertainty as to there ever being an established population there. The 2022 IMAS report, therefore, constitutes substantial new information as it demonstrates the importance of protecting the Macquarie Harbour Maugean Skate population.

The 2023 IMAS report is substantial new information as it expresses clear scientific information not known at the time of decision EPBC 2012/6406 that Macquarie Harbour Maugean Skate has declined markedly in a short period, in an area that is now the only site where the species remains. The 2023 IMAS report noted a 'scarcity of new recruits,' adding 'the reduction in the relative abundance of juvenile and sub-adult individuals'<sup>5</sup> to the broader concern about the almost 50% decline in the Macquarie Harbour Maugean Skate population.

Against this backdrop, the 2023 IMAS report raises alarm bells at the extent to which 'high impact environmental events' threaten the 'viability' of the Maugean Skate as a species. The report's conclusion that the extinction risk of the Maugean Skate is 'intrinsically linked to the health of their restricted habitat'<sup>6</sup> is also substantial new information.

In this regard, the 2023 IMAS report notes a decline in dissolved oxygen levels caused by 'anthropogenic inputs,' including the large-scale development of salmonid aquaculture, and that '[dissolved oxygen] levels and mixing dynamics are of extreme concern for the persistence of the species'.<sup>7</sup>

This attribution of the likely contribution to the low dissolved oxygen levels in Macquarie Harbour aligns with a 2020 report by Wild-Allen *et al*<sup>8</sup> (**Wild-Allen report**) which considered, amongst other things, the extent to which finfish farms contribute to lower dissolved oxygen levels in Macquarie Harbour.

The Wild-Allen report detailed several model scenario simulations to provide insight into future harbour conditions. One of these scenarios explored the impact of a reduction in anthropogenic nutrient load on water quality by the degree to which dissolved oxygen would improve were it not for finfish farm waste loads and fish farm oxygen respiration. The Wild-Allen report found that a scenario simulation omitting finfish farm oxygen drawdown and dissolved and particulate waste showed 'a 50 per cent reduction in hypoxic water and a 40 per cent reduction in hypoxic sediment

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<sup>4</sup> David Moreno, Jawahar Patil, Bruce Deagle & Jayson Semmens (2022) *Application of environmental DNA to survey Bathurst Harbour (Tasmania) for the Endangered Maugean Skate (Zoaraja maugeana)*. IMAS. [https://www.imas.utas.edu.au/\\_data/assets/pdf\\_file/0009/1615788/Project-1.33-Final-Report.pdf](https://www.imas.utas.edu.au/_data/assets/pdf_file/0009/1615788/Project-1.33-Final-Report.pdf)

<sup>5</sup> David Moreno and Jayson Semmens (2023), p.8.

<sup>6</sup> David Moreno and Jayson Semmens (2023), p.9.

<sup>7</sup> David Moreno and Jayson Semmens (2023), p.9.

<sup>8</sup> Karen Wild-Allen, John Andrewartha, Mark Baird, Lev Bodrossy, Elizabeth Brewer, Ruth Eriksen, Jenny Skerratt, Andrew Revill, Kendall Sherrin, Dan Wild. (2020), *Macquarie Harbour Oxygen Process model (FRDC 2016-067)*: CSIRO Final Report. CSIRO Oceans & Atmosphere [https://www.frdc.com.au/sites/default/files/products/FRDC\\_MH\\_Final\\_Rep\\_June\\_2020.pdf](https://www.frdc.com.au/sites/default/files/products/FRDC_MH_Final_Rep_June_2020.pdf)

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area.<sup>9</sup> Significantly, when this scenario simulation was extended for a further two years, 'hypoxia was further reduced; healthy water volume increased from 46% in 2017-18 to 56% and healthy sediment area increased from 32% in 2017-18 to 36% of the total harbour area.'<sup>10</sup>

The Wild-Allen report is substantial new information. It constitutes clear and categorical scientific evidence as to the impact of finfish farming on the decline of dissolved oxygen levels in Macquarie Harbour. It was not in the possession of the Minister for consideration when making the original referral decision.

In addition to the impact of marine farming in Macquarie Harbour on dissolved oxygen levels across the whole of the Harbour (including the TWWHA), compliance monitoring undertaken by the Tasmanian Environment Protection Authority has also documented cases of benthic bacterial matting spreading from Tassal's lease MF266 into the TWWHA on the eastern side of the Harbour.<sup>11</sup> This information was not available at the time of the original Controlled Action Decision and provides clear evidence of the substantial impacts of finfish farming on the abundance of opportunistic species within areas of Macquarie Harbour within the TWWHA.

The Wild-Allen report, along with the 2023 IMAS report, the 2022 IMAS report and the EPA compliance monitoring data, show that the adverse impacts of the action on both the habitat of the Maugean Skate and the World Heritage and National Heritage values of Macquarie Harbour are substantially more significant than originally determined by the then-Minister.

Our clients therefore submit that it is appropriate to revoke the original Controlled Action Decision based on this substantial new information.

### 1.2.2 Section 78(1)(aa) - Substantial unforeseen change in circumstances

In addition to the substantial new information warranting the revocation of the Controlled Action Decision, there has also been a substantial change in circumstances that were not foreseen at the time of the original decision.

The scientific evidence referred to in section 1.2.1 above also details external influences that affect the impacts the action is having and will continue to have.

The 2023 IMAS report was prepared in the decade after the Controlled Action Decision. It notes a significant decline in deep water (>10 m) dissolved oxygen conditions in Macquarie Harbour (Ross et al., 2020) during that time.<sup>12</sup> This is a substantial change in circumstance that was not foreseen at the time of the original Controlled Action Decision.

In addition, the 2023 IMAS report notes 'mounting evidence that these low dissolved oxygen conditions are impacting the Maugean Skate population, including inducing mortality events (Moreno et al., 2020).' Of grave concern, the 2023 IMAS report found a 47% decline from 2014 to 2021 in Maugean Skate numbers in Macquarie Harbour noting the 2016 Bell et al estimate of

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<sup>9</sup> Wild-Allen (2020), p. 62.

<sup>10</sup> Wild-Allen (2020), p. 62.

<sup>11</sup> Environment Protection Authority (2017) *Macquarie Harbour Tasmanian Wilderness World Heritage Area Environmental Status Report*, May 2017, EPA, Tasmania at p 13, accessed at <https://epa.tas.gov.au/Documents/Macquarie%20Harbour%20TWWHA%20Environmental%20Status%20Report,%20EPA,%20May%202017.pdf>.

<sup>12</sup> David Moreno and Jayson Semmens (2023), p.2.



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3,200 individuals.<sup>13</sup> Again, this is a substantial change in circumstances that was not foreseen at the time of the original decision.

The 2023 IMAS report attributes the decline in dissolved oxygen conditions to anthropogenic activities, including fish farming activities. This correlates with the Wild-Allen report, which demonstrated the degree to which dissolved oxygen would improve were it not for fish farm waste loads and fish farm oxygen respiration. The Wild-Allen report showed the extent to which dissolved oxygen has been impaired by fish farming, specifically the expansion of fish farming under the Controlled Action Decision. The causal link between fish farming and dissolved oxygen decline is a further substantial change in circumstances that was not foreseen at the time of the original decision.

Significantly, the 2023 IMAS report is an interim report, covering results from only the first year of a three-year study. The authors decided to present an interim report 'because the magnitude of the observed decline in relative abundance is likely to have significant implications for the status of the [Maugean Skate] population.'<sup>14</sup> Scientific evidence clearly shows a substantial change in circumstances and impact since the time of the original decision.

The changes in circumstances outlined above were unforeseen at the time of the original decision. It was not envisioned by the Minister when making the Controlled Action Decision that dissolved oxygen levels would significantly decline notwithstanding the Particular Manner Notice requirements. It was also not foreseen by the Minister that the significant decline in dissolved oxygen levels would induce mortality events in the Maugean Skate population, or that the already threatened Maugean Skate population would further decline by almost half from 2014 to 2021. Our clients consider that the evidence establishes that changes in the potential impacts of the Action with a high degree of certainty.

Our clients therefore submit that it is appropriate to revoke the original Controlled Action Decision based on this substantial unforeseen change in circumstances.

### **1.3 Outcome upon the Reconsideration of the Controlled Action Decision**

Our clients consider that, if all of the scientific information now available had been known at the time of the Controlled Action Decision in 2012, there would have been a finding that the Action would have a significant impact on the matters protected under Part 3 of the EPBC Act, namely an endangered species, the Maugean Skate, the World Heritage values and National Heritage values of the TWWHA.

Specifically, the current scientific evidence is the Action has had a significant impact on the endangered Maugean Skate, including by:<sup>15</sup>

- leading to a long-term decrease in the size of the Maugean Skate population;
- reducing the area of occupancy of the species;

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<sup>13</sup> Bell, J; Lyle, Jeremy; Semmens, Jayson; Awruch, Cynthia; Moreno, David; Currie, S; et al. (2016). *Movement, habitat utilisation and population status of the endangered Maugean skate and implications for fishing and aquaculture operations in Macquarie Harbour*. University Of Tasmania. Report.

[https://figshare.utas.edu.au/articles/report/Movement\\_habitat\\_utilisation\\_and\\_population\\_status\\_of\\_the\\_endangered\\_Maugean\\_skate\\_and\\_implications\\_for\\_fishing\\_and\\_aquaculture\\_operations\\_in\\_Macquarie\\_Harbour/23168198](https://figshare.utas.edu.au/articles/report/Movement_habitat_utilisation_and_population_status_of_the_endangered_Maugean_skate_and_implications_for_fishing_and_aquaculture_operations_in_Macquarie_Harbour/23168198)

<sup>14</sup> David Moreno and Jayson Semmens (2023), p.10.

<sup>15</sup> Department of Climate Change, Energy, the Environment and Water, *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*, accessed at: [https://www.dcceew.gov.au/sites/default/files/documents/nesi-guidelines\\_1.pdf](https://www.dcceew.gov.au/sites/default/files/documents/nesi-guidelines_1.pdf)



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- adversely affecting habitat critical to the survival of the species;
- disrupting the breeding cycle of a population of the Maugean Skate;
- modifying, destroying, removing, isolating or decreasing the availability or quality of habitat to the extent that the species is likely to decline; and
- interfering with the recovery of the species.

The evidence is that the Action is also significantly impacting the World Heritage and National Heritage values of the TWWHA in the following ways:

- contributing to the decline in dissolved oxygen in Macquarie Harbour, substantially damaging the habitat important for the conservation of biological diversity (including but not limited to the endangered Maugean Skate) within the TWWHA;
- causing a long-term reduction in the rare, endemic and unique population of the Maugean Skate within the TWWHA; and
- substantially increasing concentrations of suspended sediment, nutrients, and other pollutants in Macquarie Harbour within the TWWHA, with substantial, long-term and/or permanent impacts on both the harbour and its relevant values.

Therefore, upon the reconsideration of the Controlled Action Decision, our clients urge you to find that the Action will have (and has had) significant impacts on matters protected under Part 3 of the EPBC Act and so should be comprehensively assessed under Part 8 of the EPBC Act. Our clients anticipate at the conclusion of such an assessment that you would refuse to grant an approval to the Action.

### **2. Investigate compliance with Particular Manner Notice requirements**

The Controlled Action Decision was made on the basis that the Action would be carried out in a particular manner. The Particular Manner Notice attached to the Controlled Action Decision sets out how the Action must be undertaken. The stated aim of the Particular Manner Notice requirements is to “ensure there are no significant impacts” arising from the Action on the Maugean Skate and the TWWHA.

Given the significant impacts of the Action on both the Maugean Skate and TWWHA that have been documented in the scientific studies cited in section 1 of this letter, our clients have serious questions about whether the requirements in the Particular Manner Notice have been complied with.

We note that section 77A of the EPBC Act provides that it is an offence to fail to comply with the requirements set out in a Particular Manner Notice, with a maximum corporate penalty of 10,000 penalty units or \$2,750,000 if prosecuted. The failure to comply with a Particular Manner Notice requirement also exposes the person undertaking an action to the possibility of committing civil or criminal offences if their action is having or is likely to have a significant impact on a matter of national environmental significance, like a threatened species or World Heritage values.

If the Department discovers that there have been breaches of the Particular Manner Notice requirements that have resulted in a significant impact on a matter of national environmental significance, the EPBC Act also provides avenues for you to make remediation determinations or apply to the Federal Court for remediation orders and/or injunctions. Such information may also be another basis upon which you can reconsider the Controlled Action Decision under section 78 of the EPBC Act.

## Annexure 1 – August 2023 letter

We therefore request that you urgently direct the Department to investigate whether Particular Manner Notice requirements have been complied with by the marine farming companies the subject of the Controlled Action Decision, namely Huon Aquaculture Group Pty Ltd, Petuna Aquaculture Pty Ltd and Tassal Operations Pty Ltd.

### **3. Investigate whether the marine farming expansion in Macquarie Harbour is the same action as what was originally referred in 2012**

Separately to the issue of whether the Action is being carried out in accordance with the Particular Manner Notice, our clients have real questions as to whether the marine farms currently operating in Macquarie Harbour are the same action as what was originally referred and described in the Controlled Action Decision.

The Particular Manner Notice refers to and relies upon the regulation of marine farming under Tasmanian regulatory instruments. We note that these instruments have substantially changed since the Controlled Action Decision. For example:

- marine farming licences issued under the *Living Marine Resource Management Act 1995* (Tas) no longer provide for any water quality monitoring program;
- the Secretary of the department administering the *Marine Farming Planning Act 1995* (Tas) and the *Living Marine Resource Management Act 1995* (Tas) no longer has a role in setting biomass or pollution limits (that is now undertaken by the Director of the Tasmanian Environment Protection Authority); and
- the Tasmanian regulators no longer use the presence of numerous opportunistic polychaetes as an indicator of "substantial benthic visual impact", meaning that the so-called "targeted management responses" mentioned in the Referral and the Particular Manner Notice are not occurring in the way that was originally proposed.

Furthermore, our clients expect that there have been significant changes to the type of equipment and practices employed by the finfish farming operations since the Action was originally referred.

If the marine farming that is occurring in Macquarie Harbour is not the same as the Action as was originally referred under the EPBC Act, our clients are concerned that the marine farming companies operating in Macquarie Harbour may have committed or are continuing to commit offences under the EPBC Act.

If it is discovered that the marine farming that is occurring in Macquarie Harbour is not the same as the Action, the marine farming companies may either be prosecuted or fined for offences under the EPBC Act. You may also require the marine farming companies to make a fresh referral of their actions for assessment and approval under the EPBC Act.

In these circumstances, our clients request that you direct the Department to urgently investigate whether the salmon farming companies are operating within the confines of the Action as referred in 2012.

### **4. World Heritage obligations to protect the World Heritage Values of Macquarie Harbour, including its inhabitant the Maugean Skate**

Approximately one-third of Macquarie Harbour is on the World Heritage Register as part of the Tasmanian Wilderness World Heritage Area. As outlined in section 1 above, there is evidence that marine farming in Macquarie Harbour is having a detrimental effect on dissolved oxygen levels across the whole of the Harbour, including the TWWHA, and there have been documented cases of

## Annexure 1 – August 2023 letter

benthic bacterial matting spreading from marine farming areas into the TWWHA on the eastern side of the Harbour.<sup>16</sup>

The Australian Government has international obligations to protect and conserve World Heritage properties under the World Heritage Convention. Australia's obligations under the World Heritage Convention include ensuring effective and active measures are taken for the protection and conservation of natural heritage (Article 5). These obligations are, in turn, given effect through the EPBC Act.

Australia's World Heritage Convention obligations require you to effectively and actively exercise your powers under the EPBC Act to protect the Maugean Skate and the TWWHA from further harm arising from marine farming. Our clients urge you to exercise your powers under the EPBC Act to reconsider the Controlled Action Decision and investigate the compliance of marine farming in Macquarie Harbour with the EPBC Act consistently with Australia's World Heritage Convention obligations.

### Next steps

Through this letter, our clients have urged you to consider three distinct courses of action. Given the ongoing and urgent nature of the matters canvassed in this letter, we request **by no later than 4 pm, 15 September 2023** you:

- (a) Reconsider and revoke the Controlled Action Decision under section 78 of the EPBC Act;
- (b) Urgently direct the Department to investigate whether Particular Manner Notice requirements have been complied with by the marine farming companies the subject of the Controlled Action Decision, namely Huon Aquaculture Group Pty Ltd, Petuna Aquaculture Pty Ltd and Tassal Operations Pty Ltd; and/or
- (c) Urgently direct the Department to investigate whether the marine farming companies are operating within the confines of the Action as referred in 2012.

Should you have any questions concerning matters raised in this letter, please contact Claire Bookless

Yours sincerely,

**Environmental Defenders Office**

**Claire Bookless**

Managing Lawyer – lutruwita/Tasmania

Reference numbers: S5617 and S5619

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<sup>16</sup> Environment Protection Authority (2017) Macquarie Harbour Tasmanian Wilderness World Heritage Area Environmental Status Report, May 2017, EPA, Tasmania at p 13, accessed at <https://epa.tas.gov.au/Documents/Macquarie%20Harbour%20TWWHA%20Environmental%20Status%20Report,%20EPA%20May%202017.pdf>.

**Annexure 1 – August 2023 letter**

**Copied to:**

Mr. David Fredericks PSM,  
Secretary of the Department of Climate Change, Energy, the Environment & Water  
**By email:** [david.fredericks@dcceew.gov.au](mailto:david.fredericks@dcceew.gov.au)

Senator the Hon Murray Watt, Minister for Agriculture, Fisheries & Forestry  
**By email:** [minister.watt@aff.gov.au](mailto:minister.watt@aff.gov.au)

## Annexure 2 – November 2023 letter



20 November 2023

Hon Tanya Plibersek MP  
Minister for the Environment and Water  
House of Representatives  
Parliament House  
Canberra ACT 2600

**By email:** [Minister.Plibersek@dcceew.gov.au](mailto:Minister.Plibersek@dcceew.gov.au)

Dear Minister Plibersek,

**Further information regarding requests for reconsideration of decision on referral numbered EPBC 2012/6406 and investigation into compliance with the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)***

Environmental Defenders Office Ltd writes on behalf of our clients, the Australian Marine Conservation Society and Humane Society International Australia, to seek your urgent action to respond to the impacts of finfish farming on the endangered Maugean Skate (*Zearaja maugean*) and the Tasmanian Wilderness World Heritage Area.

We refer to our letters dated 23 August 2023 and 20 September 2023 (**enclosed**) in which we requested the following:

1. Reconsider and revoke the Controlled Action Decision relating to the Marine Farming Expansion in Macquarie Harbour (EPBC referral no. 2012/6406) on the basis of substantial new information about the impacts the action has or will have, or is likely to have on a matter protected by a provision in Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (**EPBC Act**) (section 78(1)(a)), and/or a substantial change of circumstances that were not foreseen at the time of the first decision, and which relates to the impacts the action has or will have, or is likely to have on a matter protected by a provision in Part 3 of the EPBC Act (section 78(1)(a));
2. Direct the Department to investigate compliance with the Particular Manner Notice requirements attached to the Controlled Action Decision for EPBC referral no. 2012/6406; and
3. Direct the Department to investigate whether the finfish farming currently being undertaken in Macquarie Harbour is the same as the Action that was the subject of EPBC referral no. 2012/6406.

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## Annexure 2 – November 2023 letter

Since the writing of the above-mentioned letters, we have obtained further scientific advice relevant to the basis for reconsideration under s78(1)(aa) of the EPBC Act regarding substantial change of circumstances not foreseen at the time of the first decision. We provide further details below.

### Further science information

The oceanic region around Tasmania is a global hotspot, with surface seawaters characterised by anomalously high warming. This is also reflected in coastal waters that are influenced seasonally on both the east and west coasts by warm-water currents. Just offshore Macquarie Harbour on the west coast, the fastest rate of warming is observed (0.5°C per decade) for Tasmanian coastal waters.<sup>1</sup> This peak rate may arise from outflow from Macquarie Harbour. Unfortunately, the authors were unable to obtain a reliable estimate of the trend within the harbour due to some significant data gaps after 2012. However, unequivocally inshore bays and protected waters of Tasmania, including Macquarie Harbour, show heightened seasonal changes (warmer in summer and cooler in winter). With the onset of both El Nino and a positive Indian Ocean dipole confirmed, a warmer than usual summer is predicted around the continent including Tasmania.<sup>2</sup> The National Oceanic and Atmospheric Administration's monthly diagnostic report indicates that there is a strong possibility that this El Nino could become a historically strong event (>2.0°C).<sup>3</sup> The outlook for water temperatures in Macquarie Harbour is, therefore, dire this summer. It follows that the drawdown of dissolved oxygen in subsurface waters of the harbour will be greatly exacerbated—by both the warmer waters decreasing the solubility of oxygen and the warmth also enhancing the rate of microbial decomposition processes exhausting dissolved oxygen. The warming of ocean temperatures, particularly during summer heat events, is a substantial change in circumstance not foreseen at the time of the first decision.

We have provided this further information to Mr Jacobi, Secretary for the Tasmanian Department of Natural Resources and Environment, and Mr Brooksbank, CEO of Hydro Tasmania to inform their decision-making regarding Macquarie Harbour and the Maugean Skate. We have **enclosed** those letters for your ready reference.

### Request for correspondences

We understand, in reference to an article in The Mercury,<sup>4</sup> that correspondence has occurred between yourself and Premier Rockliff regarding a letter sent from Premier Rockliff to Prime Minister Albanese in September regarding finfish farming in Macquarie Harbour and impacts on the Maugean Skate. We request copies of correspondence between yourself, Prime Minister Albanese and Premier Rockliff regarding finfish farming and the Maugean Skate.

Our client has a right to request access to this information under section 11 of the Freedom of Information Act 1982 (**FOI Act**). We make this request informally in the understanding that you may choose to provide access to this information outside of the formal request process while meeting the principles and objectives of the FOI Act.

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<sup>1</sup> Ridgway, K.R. and Ling, S.D., 2023. Three decades of variability and warming of nearshore waters around Tasmania. *Progress in Oceanography*, 215, 103046.

<sup>2</sup> <http://www.bom.gov.au/climate/outlooks/#/temperature/summary>. Accessed 1 Nov 2023.

<sup>3</sup> <https://www.abc.net.au/news/2023-11-16/holder-nsw-el-nino-set-to-peak-as-one-of-the-strongest/103104264>. Accessed 17 November 2023.

<sup>4</sup> Inglis, 7 November 2023, Pause on Salmon Farming Possible, The Mercury.

## Annexure 2 – November 2023 letter

Should you have any questions concerning matters raised in this letter, please contact Claire Bookless on (03) 6223 2074 or by email at [claire.bookless@edo.org.au](mailto:claire.bookless@edo.org.au)

Yours sincerely,

**Environmental Defenders Office**

**Claire Bookless**

Managing Lawyer – lutruwita/Tasmania

Reference numbers: S5617 and S5619

**Copied to:**

Mr. David Fredericks PSM,  
Secretary of the Department of Climate Change, Energy, the Environment & Water  
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Senator the Hon Murray Watt, Minister for Agriculture, Fisheries & Forestry  
**By email:** [minister.watt@aff.gov.au](mailto:minister.watt@aff.gov.au)



### Annexure 3 – Macquarie Harbour Oxygenation Project - Questions and concerns

The aim of the MHOP is to increase oxygen levels in Macquarie Harbour to support conservation efforts of the Maugean Skate and “offset the total oxygen drawdown of salmonid aquaculture in the harbour”.<sup>35</sup> The MHOP will assess the efficacy and environmental response to oxygenation and assess its feasibility and scalability. The objectives are to:<sup>36</sup>

1. Develop a plume model and run scenarios to inform injection depth, flow volume, concentration and distribution of injection points for oxygenation trials;
2. Measure oxygen load, retention and spatial extent of oxygen improvement;
3. Monitor and evaluate the ecosystem response;
4. Determine scalability based on the above using CSIRO’s Macquarie Harbour Model; and
5. Provide advice on progress to all stakeholders and how it relates to conservation planning and action for the Maugean Skate.

The MHOP is experimental and the risks and effectiveness unknown to the public with the methodology reports not released at the time of writing. Worldwide examples of oxygenation or aeration of waterbodies include relatively small freshwater systems experiencing excessive nutrient runoff. There are few examples of estuarine or marine environments. The closest equivalent to the MHOP is the oxygenation of the Swan-Canning estuary in Western Australia, which is cited by the MHOP.<sup>37</sup> However, the estuary is very different to Macquarie Harbour – it is a shallow, tunnel-type, salt wedge estuary, whereas Macquarie Harbour is a micro-tidal, drowned river valley estuary with fjord-like circulation and maximum depths of about 50 m.

The other example is the Savannah Harbour in Georgia, USA, where as part of deepening the harbour in the estuary of the Savannah River, there was a commitment to improve the hypoxia in the bottom waters.<sup>38</sup> The Savannah estuary is mesotidal with a maximum tidal range of 3 m, which would assist oxygen flow more than in Macquarie Harbour, which is microtidal (<0.5 m). Planning took approximately a decade and although it will only operate during summer months, it is estimated to cost US\$3 million per year to pump extra oxygen into the waterway.<sup>39</sup>

Overall, the MHOP is significantly larger than any previous oxygenation projects conducted worldwide. It is particularly challenging due to its remote location, the necessity of barges (in contrast to the Swan-Canning and Savannah estuaries, which are land-based programs), subsequent high energy demands and use of diesel, the requirement for continuous oxygenation, susceptibility to adverse weather (wind and waves), costs, and the short period involved in planning, in contrast to programs elsewhere, which have taken many years to develop.

However, oxygenating Macquarie Harbour comes with risks and it is unclear how these have been assessed, how successful the MHOP is likely to be and how success will be measured, particularly if, given the tight timeframe, modelling (objective 1) is done in parallel with objectives 2 and 3.

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<sup>35</sup> FRDC 2023-087 Macquarie Harbour oxygenation trial <https://www.frdc.com.au/project/2023-087> accessed 31 January 2024

<sup>36</sup> Ibid.

<sup>37</sup> Larsen, S.J., Kilminster, K.L., Mantovanelli, A., Goss, Z.J., Evans, G.C., Bryant, L.D. and McGinnis, D.F., (2019) *Artificially oxygenating the Swan River estuary increases dissolved oxygen concentrations in the water and at the sediment interface*. Ecological engineering, 128, pp.112-121. <https://doi.org/10.1016/j.ecoleng.2018.12.032>

<sup>38</sup> Oxygenating System in Savannah Harbor Expansion is Largest to Date, 24 July 2019. <https://www.waterwaysjournal.net/2019/07/24/oxygenating-system-in-savannah-harbor/> . Accessed 17 January 2024.

<sup>39</sup> Groups won't fight Savannah harbor oxygen injector test, 15 September 2019. <https://www.savannahnow.com/story/news/2019/09/16/groups-wont-fight-savannah-harbor-oxygen-injector-test/2763099007/> . Accessed 17 January 2024.

### **Annexure 3 – Macquarie Harbour Oxygenation Project - Questions and concerns**

Based on media reporting, the MHOP will begin operational testing in the coming weeks.<sup>40</sup> As the MHOP appears to form part of the Action, in that the aim is to offset the impact of the Action, the Action is not being taken in the matter identified in the Particular Manner Notice.

Further, there are several concerns which should be assessed under the EPBC Act regarding MHOP including:

1. How far will oxygenation extend beyond its source, will it extend throughout the harbour and will it reach Maugean Skate habitats?
2. How does oxygenating at a point source disrupt microbial and biogeochemical processes at that location, and how does that affect other parts of the harbour? For example, what is the pace of change likely to be and therefore what changes in microbial or biogeochemical processes may occur? It has been demonstrated elsewhere that changing the oxygen status of a water body quickly can lead to significant changes in microbial communities, which has the potential to cause irreversible regime shifts.<sup>41</sup>
3. If increased oxygen reaches the sediment-water interface, how much oxygen will the sediments utilise and will toxic metals currently stored in the sediment as a result of past mining be mobilised? Increasing oxygen concentration can enhance the mobility of trace metals, which may result in the leaching of some sediment-bound metals to overlying surface waters.<sup>42</sup>
4. What are the risks of the MHOP to the Skate and Macquarie Harbour's ecosystems more broadly? For example, how are other animals, such as crabs, likely to be affected by the MHOP and what are the implications for the Skate?
5. The MHOP will be powered by diesel – how much diesel is estimated to be used and what environmental impacts are associated with this?

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<sup>40</sup> The Mercury, 24 January 2024. *Macquarie Harbour Skate Oxygen Project Moves Closer As Wombat Shuffles Into Position*. <https://www.themercury.com.au/news/macquarie-harbour-skate-oxygen-project-moves-closer-as-wombat-shuffles-into-position/news-story/b87e00267846742f933e28d69cecb1b2> accessed 24 January 2024.

<sup>41</sup> Bush, T., Diao, M., Allen, R.J., Sinnige, R., Muyzer, G. and Huisman, J., 2017. Oxic-anoxic regime shifts mediated by feedbacks between biogeochemical processes and microbial community dynamics. *Nature Communications*, 8(1), 789. <https://doi.org/10.1038/s41467-017-00912-x>

<sup>42</sup> M. De Jonge, J. Teuchies, P. Meire, R. Blust, L. Bervoets, 2012. The impact of increased oxygen conditions on metal-contaminated sediments part I: Effects on redox status, sediment geochemistry and metal bioavailability, *Water Research*, Volume 46, Issue 7, 2205-2214. <https://doi.org/10.1016/j.watres.2012.01.052>