Chapter 6

Interaction of state and federal laws and regulations

6.1 While there are a number of areas where Commonwealth laws apply to the Tasmanian aquaculture industry, submitters focused on the interaction of state and Commonwealth laws in relation to the expansion of farming operations in Macquarie Harbour. This chapter provides an overview of relevant Commonwealth legislation before addressing the issues related to Macquarie Harbour.

Commonwealth regulation

6.2 Commonwealth regulation is applicable to the Tasmanian fin-fish aquaculture industry in three areas:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- water quality standards;
- marine biosecurity; and
- agriculture and veterinary chemicals.

Environment Protection and Biodiversity Conservation Act 1999

6.3 The Department of the Environment plays a limited role in regulatory activities affecting the aquaculture industry, as the industry is primarily regulated under relevant state and territory legislation. However, projects require approval under the EPBC Act if they are likely to have a significant impact on any matter of national environmental significance (as defined by the Act). The nine matters of national environmental significance protected under the EPBC Act are:

- world heritage properties;
- national heritage places;
- wetlands of international importance (listed under the Ramsar Convention);
- listed threatened species and ecological communities;
- migratory species protected under international agreements;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- nuclear actions (including uranium mines); and
- water resources, in relation to coal seam gas and large coal mine developments.[1]

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1 Department of the Environment, *What is protected under the EPBC Act?*, http://www.environment.gov.au/epbc/what-is-protected (accessed 21 July 2015)

6.4 Actions that may have a significant impact on a matter of national environmental significance must be referred to the minister. The minister may decide that an action:

- is a controlled action because it is likely to have a significant impact;
- is not a controlled action if undertaken in a manner specified; or
- is not a controlled action and therefore does not require approval.[2]

One-stop shop policy in Tasmania

6.5 The Department of the Environment submitted that the Commonwealth Government is committed to the development of the one-stop shop policy to create a single environmental assessment and approval process for nationally protected matters. The one-stop shop policy will see the accreditation of state and territory approval processes to meet environmental standards required by the Commonwealth. The Commonwealth and Tasmanian Governments signed a new assessment bilateral agreement on 22 October 2014 and a draft approval bilateral agreement was released for public comment in August 2014.

6.6 The Department of the Environment commented that 'the reform may not result in accreditation of all Tasmanian planning processes immediately, as some of these processes do not currently meet the standards required by the EPBC Act'.[3]

6.7 In relation to the *Living Marine Resources Management Act 1995* (Tas) and the *Marine Farming Planning Act 1995* (Tas), the Department of the Environment stated that the Acts:

> …are currently not accredited under the existing assessment bilateral agreement and are not proposed to be accredited under the draft approval bilateral agreement released for comment in August 2014. In the absence of either an assessment or approval bilateral agreement that accredits the relevant Tasmanian process, the Commonwealth will continue to have an assessment and approval role in relation to any aquaculture projects likely to have a significant impact on nationally protected matters.[4]

Water quality

6.8 While the primary responsibility for water quality management and water quality data lies with the state and territory governments, the Commonwealth engages with the jurisdictions to improve water quality in waterways, particularly through the National Water Quality Management Strategy (NWQMS). The NWQMS aims to protect water resources, by improving water quality while supporting the businesses,

2 EPBC Act, s.75–77A.

3 Department of the Environment, *Submission 40*, p. 3.

4 Department of the Environment, *Submission 40*, p. 3.

industry, environment and communities that depend on water for their continued development.

6.9 The Department of the Environment added that the Strategy is the principal policy that provides guidance on the environmental suitability of waste discharges to the receiving environment and applies in all states and territories.[5] Under the NWQMS, the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000) provides material on a range of matters including aquaculture and human consumers of aquatic foods.[6] The guidelines are currently under review.

6.10 Through the application of the NWQMS, the Commonwealth is working in collaboration with the states and territories to develop Water Quality Improvement Plans (WQIP) to reduce pollution being released into aquatic ecosystems with high ecological, social and/or recreational values. WQIPs seek to deliver significant reductions in the discharge of pollutants to agreed hotspots. A WQIP provides an ecosystem based approach to integrated water cycle management, supported by science. Currently, the Derwent Estuary is a listed Water Quality Hotspot.[7]

Marine biosecurity

6.11 Exotic marine species can enter Australian waterways through biofouling (the accumulation of pests attached to vessel hulls) and ballast water (water carried in vessels to maintain their suability).

6.12 In relation to biofouling, the Commonwealth Department of Agriculture noted that, in November 2013, the *National biofouling management guidelines for the aquaculture industry* were published. The guidelines were reviewed following the first 12 months of operation. The Department of Agriculture commented that the aquaculture industry had advised the review that anti-fouling paints are no longer used on moveable aquaculture structures and biofouling is generally acquired from the local area. On this basis:

> …it was proposed and agreed by relevant jurisdictions and agencies that moveable aquaculture structures (including those used in finfish aquaculture operations in Tasmania) be removed from the guidelines.[8]

6.13 The aquaculture industry is also subject to Commonwealth quarantine legislation in relation to biosecurity risks associated with imported commodities such as feed for fish, farming equipment, live broodstock and genetic material. The Department of Agriculture noted that 'Commonwealth quarantine legislation operates

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5 Department of the Environment, *Submission 40*, p. 3.

6 Department of the Environment, *Submission 40*, p. 3.

7 Department of the Environment, 'Water Quality Improvement Plans' http://www.environment.gov.au/water/quality/improvement (accessed 10 August 2015).

8 Department of Agriculture, *Submission 10*, p. 5.

concurrently with state and territory quarantine legislation, including the management arrangements in Tasmania'.[9]

Chemical use

6.14 The Australian Pesticides and Veterinary Medicines Authority (APVMA) regulates the use of agriculture and veterinary (agvet) chemicals by Australian aquaculture industries. Chemicals used by the aquaculture industry include antibiotics, vaccines, hormones to induce spawning and for production of female stock, anaesthetics and biocides to control fouling on equipment.

6.15 The APVMA regulates chemicals up to, and including, the point of retail sale and is based on 'rigorous independent scientific assessments of the potential risks the chemicals pose to the environment, as well as to human health, occupational health and safety, and trade in products associated with the use of these chemicals'.[10]

6.16 The states and territories are responsible for regulating the use of agvet chemicals after the point of retail sale through control-of-use legislation. Residue monitoring and environmental management issues relating to the use of agvet chemicals are also primarily the responsibility of state and territory governments.

6.17 As part of the Commonwealth Government's commitment to decrease the regulatory burden on producers, the Department of Agriculture stated that it continued to consult with the aquaculture industry to improve agvet chemical regulation and access.[11]

Expansion of farming in Macquarie Harbour and application of the EPBC Act

6.18 The committee received evidence regarding the expansion in Macquarie Harbour in relation to threatened species such as the spotted handfish and Maugean skate, the possible impact on the Tasmanian Wilderness World Heritage Area and the requirements contained in the Commonwealth referral decision which was made under the EPBC Act.[12] Matters related to threatened and endangered species have been canvassed in chapter 4.

Expansion of operations in Macquarie Harbour

6.19 Aquaculture has been conducted in Macquarie Harbour for more than 20 years. In 2010, Tassal, Huon Aquaculture and Petuna began exploring the potential for expansion in the Macquarie Harbour region. A draft amendment to the Macquarie

9 Department of Agriculture, *Submission 10*, p. 5.

10 Department of Agriculture, *Submission 10*, p. 6.

11 Department of Agriculture, *Submission 10*, p. 7.

12 Australian Marine Conservation Society, *Submission 9*, p. 6.

Harbour Marine Farming Development Plan (MHMFDP) was submitted to the Marine Farming Planning Review Panel for assessment.

6.20 The Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE) commented that proponents of marine farming developments are notified by DPIPWE of the prescriptions of the EPBC Act when development proposals are presented to the Department and when marine farming leases are granted. DPIPWE commented that 'it should be noted that a marine farming lease must be granted to a proponent before any action can be undertaken and hence any referral made to the Minister administering the [EPBC Act]'.[13]

6.21 Approval was given in May 2012 for the industry to increase the number of leases in the Harbour from 2 per cent to 3.3 per cent (924 hectares) of the total water space.[14] The TSGA stated that the percentage of the harbour taken up by the industry is less than 3.3 per cent of the harbour with the actual fish pens taking up 20 hectares.[15] The TSGA noted that there are no farms in the World Heritage Area in Macquarie Harbour. Rather, the World Heritage Area is at the top of the Macquarie Harbour body of water, upstream of salmon farming and is protected from adverse environmental impacts of farming by the environmental limits set by DPIPWE within the compliance zone for farming.[16]

Application of the EPBC Act

6.22 The expansion of marine farming at Macquarie Harbour was referred to the Commonwealth in 2012 on behalf of Huon Aquaculture Group, Tassal Operations and Petuna Aquaculture. This has been the only instance of an aquaculture operation in Tasmania being referred under the EPBC Act.[17]

6.23 The Commonwealth Department of the Environment noted that the proposed action did not require assessment and approval under the EPBC Act if undertaken in accordance with the Macquarie Harbour Marine Farming Development Plan (MHMFDP). The MHMFDP included specific measures to protect the Maugean skate and the Tasmanian Wilderness World Heritage Area and involved monitoring and targeted management responses to protect the species habitat and water quality.[18]

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13 Department of Primary Industries, Parks, Water and Environment, *Submission 35*, p. 7.

14 C Norwood, 'Salmonid industry expansion approved', *Fish*, December 2012 http://frdc.com.au/knowledge/publications/fish/Documents/FISH%2020-4%20Salmonid%20industry%20expansion%20approved.pdf (accessed 22 July 2015).

15 Tasmanian Salmonid Growers Association, *Response to submissions*, p. 10.

16 Tasmanian Salmonid Growers Association, *Response to submissions*, p. 10.

17 Department of the Environment, *Submission 40*, p. 1.

18 Department of the Environment, *Submission 40*, p. 2.

6.24 The Department of the Environment stated that the action was consequently able to proceed, subject to relevant state or local government requirements.[19]

6.25 In relation to monitoring, the Department of the Environment noted that, as the expansion in Macquarie Harbour was a 'not a controlled action–particular manner' decision under the EPBC Act is subject to monitoring by the Department in accordance with the EPBC Compliance Monitoring Plan 2014/2015. A monitoring inspection of the project was undertaken by the Department on 18 September 2013. No evidence of non-compliance with the particular manner requirements identified in the decision was found. The Department stated that no current compliance matters are being investigated by the Department.[20]

6.26 Submitters noted that the referral decision contained conditions to ensure that there are no significant impact to the Maugean skate as a result of changes to the benthic environment (condition 1) and no significant impact on the Tasmanian Wilderness World Heritage Area and the Maugean skate as a result of water quality changes (condition 2). In particular, submitters pointed to the following monitoring and targeted management responses in relation to water quality, including dissolved oxygen; benthic changes; and the imposition of the 52.5 per cent cap on total biomass (condition 2f).[21]

Issues in relation to waterway health in Macquarie Harbour

6.27 The environmental importance of Macquarie Harbour was identified by Environment Tasmania which stated that:

> Macquarie Harbour is unique within Australia, with highly unusual physical and hydrological characteristics, including highly stratified waters, a darkly stained brackish surface layer, and relatively deep basins separated from the sea by shallower areas.[22]

6.28 Ms Rebecca Hubbard, Environment Tasmania, added that it is one of only two estuaries of its kind in Australia and that 'it is the property of the Tasmanian public and our future generations and is therefore a significant concern for our community'.[23]

6.29 However, submitters commented that there are environmental and fish health concerns in Macquarie Harbour. This includes a downward trend in dissolved oxygen, an increase in visual impacts from fish farming sites beyond lease boundaries–that is

19 Department of the Environment, *Submission 40*, p. 2.

20 Department of the Environment, *Submission 40*, p. 2.

21 Australian Marine Conservation Society, *Submission 9*, p. 6.

22 Environment Tasmania, *Submission 93*, p. 7.

23 Ms Rebecca Hubbard, Marine Coordinator, Environment Tasmania, *Committee Hansard*, 16 July 2015, p. 3.

an increased abundance of Dorvilleid worms, disease outbreaks in farmed fish and mass mortalities of farmed fish.[24] Dr Elizabeth Smith commented:

> The waters of Macquarie Harbour are recognised as being low in nutrients and therefore more vulnerable than other waterways to the increased nutrient levels that will be unavoidable if expansion of aquaculture is permitted.[25]

6.30 Environment Tasmania also stated that DPIPWE has exposed listed endangered species and World Heritage Area values to 'considerable threats in Macquarie Harbour, without full understanding of how bad the impacts are or a management strategy to avoid them'.[26]

Dissolved oxygen levels in Macquarie Harbour

6.31 The levels of dissolved oxygen (DO) in Macquarie Harbour were raised in a number of submissions with two issues identified:

- the historically low levels of DO in Macquarie Harbour and its depletion over time; and
- the fish kill event in 2015.

6.32 Dr Adam Main, Chief Executive Officer, TSGA, commented that it has been known for 20 years that Macquarie Harbour is a low DO harbour. As part of the environmental impact statement for the amendment to the MHMFDP, the consulting company, Aquadynamic Solutions, undertook extensive work on the Macquarie Harbour environment. This included assessing all historical data sets to develop 'the best understanding of what the dissolved oxygen was and also what that would mean going forward with a biomass increase in the harbour. So we actually modelled according to the best available data at that time in regard to oxygen availability in the water'.[27]

6.33 Monitoring by the industry and the Tasmanian Environment Protection Authority (EPA) observed a decline in bottom water DO in Macquarie Harbour.[28] Dr John Whittington, Secretary, DPIPWE indicated that government agencies and the industry saw the need to improve understanding of the drivers of the changes to DO

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24 See Environment Tasmania, *Submission 93*, p. 7.

25 Dr Elizabeth Smith, *Submission 91*, p. 2.

26 Environment Tasmania, *Submission 93*, p. 14.

27 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 31.

28 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, p. 3; see also Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 30.

levels.[29] As a consequence, the Macquarie Harbour Dissolved Oxygen Working Group was established in February 2014 'to look at the science behind the oxygen levels in Macquarie Harbour'.[30] The Working Group comprises the industry (Huon Aquaculture, Tassal and Petuna), Hydro Tasmania, CSIRO, IMAS and DPIPWE.[31]

6.34 The CSIRO was commissioned to review available data and recommend additional monitoring to assist industry, stakeholders and government to determine possible cause of the reduced DO.[32] The report was received in late 2014. Aquadynamic Solutions undertook further work to update the study to look at changes in DO from August 2014 to May 2015. This study was reviewed by IMAS, CSIRO and TSGA.[33]

6.35 The CSIRO's October 2014 report was made public by the Macquarie Harbour Dissolved Oxygen Working Group on 13 August 2015. The report indicated that there was a clear downward trend in the DO levels of the deep-waters (greater than 15 metres) of Macquarie Harbour over the period 2009 to July 2014. It was also found that the 'while our analysis suggests that aquaculture may be responsible for 3–12% of the benthic BOD (below 15 m), the implications for DO levels throughout the harbour are less clear'. In addition, it noted that river flow plays an important role in replenishing deep-water oxygen. Other factors such as wind, tidal height and atmospheric pressure also play significant roles in regulating oxygen replenishment. The report added that further data will clearly be required before the decline in DO can be definitively attributed.[34]

6.36 Aquadynamic Solutions provided the committee with the details of the main results of the CSIRO study and the update study. The results of the update study included that, at many depths, DO levels appear to have recovered to nearly the same levels as those observed at the start of the monthly monitoring program in late 2011 (based on May 2015 DO data). It was found that water level was a key factor in determining harbour dynamics. The key driver of water level elevation is the harbour

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29 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, pp 3, 4.

30 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 30; see also Tasmanian Salmonid Growers Association, *Response to submissions*, pp 11, 32.

31 Tasmanian Salmonid Growers Association, *Response to submissions*, p. 11.

32 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, p. 5; Tasmanian Salmonid Growers Association, 'Macquarie Harbour and Dissolved Oxygen Discussion', 3 March 2015, http://www.tsga.com.au/macquarie-harbour-and-dissolved-oxygen-discussion/ (accessed 2 August 2015).

33 Aquadynamic Solutions, *Submission 17*, p. 2.

34 Macquarie Harbour Dissolved Oxygen Working Group, Report, 6 October 2014, pp 40–41 http://www.tsga.com.au/macquarie-harbour-dissolved-oxygen-working-group-report-october-2014/ (accessed 13 August 2015).

was found to be air pressure (responsible for more than 40 per cent), followed by tide and then river flow.[35]

6.37 Aquadynamic Solutions commented that a better understanding of the processes operating within Macquarie Harbour and the physical forces driving oxygen recharge had been gained through the update study.[36] Aquadynamic Solutions added:

> Although a full understanding of attribution is still elusive the current update clearly identifies some of the causes for the historic DO depressions, oxygen recharges and the expected outcomes under a range of conditions both natural and farm/Hydro driven.[37]

6.38 Dr Neil Hartstein, Project Manager, Aquadynamic Solutions, explained the causes of changes in DO in greater detail:

> I think a lot of that has been about the climatic mechanisms or the environmental drivers behind recharge inside Macquarie Harbour. One of the interesting things that we have been doing working with CSIRO and IMAS over the last year or so is looking at essentially what are the driving mechanisms for providing fresh dissolved oxygen into Macquarie Harbour. We have identified the driving mechanisms and it relates essentially to climate forcings. You need certain kinds of climatic forcings to occur to get a recharge of dissolved oxygen into Macquarie Harbour in the bottom waters. Over the last six years, those recharge mechanisms probably have not been occurring as often as they have in the past, and one of the easy analogies to relate to that is in regard to salinity.
>
> We know that there is a very strong relationship in bottom waters in Macquarie Harbour. When you have high salinity in the bottom waters you also generally get high dissolved oxygen. We know that in five of the last six years salinity in the bottom waters has gone down rather than stayed stable or gone up, which essentially means that oceanic water from offshore that comes through Hells Gate and into the harbour has not been entering the harbour as often as it has in the past, and we have noticed in the last year that, when the dissolved oxygen has increased, salinity levels in the bottom waters have also increased along with that. So understanding these dynamics has been one of the most interesting and probably the most obvious changes in the harbour. This relates to the decrease in dissolved oxygen that we did see. But, as I said, it is now recharged again because the forcing dynamics, the climatic dynamics, have changed in the last year or so.[38]

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35 Aquadynamic Solutions, *Submission 17*, p. 3; see also Tasmanian Salmonid Growers Association, *Response to submissions*, p. 11.

36 Aquadynamic Solutions, *Submission 17*, p. 3.

37 Aquadynamic Solutions, *Submission 17*, p. 3.

38 Dr Neil Hartstein, Project Manager, Aquadynamic Solutions, *Committee Hansard*, 16 July 2015, p. 24.

6.39 Dr Hartstein added that for oceanic water to come through Hells Gate:

> …you need to have strong north-westerly winds, you need to have a low pressure system, you need to probably have a spring tide and the wind needs to be sustained for a certain period of time as well. You need a combination of those things to all align at the same time. We have looked at a 23-year data set and we have observed that it has not been so frequent in recent years as it was in previous years, and just in the last year or so it has come back because the frequency has increased.[39]

6.40 Dr Donald Ross, IMAS, also commented that the studies provided information about the Macquarie Harbour DO system 'in terms of what the drivers are, but in terms of assigning attribution the data just is not there for us to be confident'.[40]

6.41 Dr Whittington noted that the CSIRO study had included some hypotheses about how the harbour operated and added that:

> …consistent with those hypotheses, with certain climatic events and changes in the operations of the Gordon River, the harbour has responded in a way that is consistent with that report.[41]

6.42 Dr Whittington further noted that the oxygen concentrations in the bottom waters are approximately equivalent to what they were four or five years ago. Dr Whittington concluded that the research that has been undertaken provides DPIPWE with 'some confidence that we are understanding the harbour' and 'confidence that the environment in Macquarie Harbour is being appropriately and adequately managed'.[42] In addition, he stated 'the CSIRO report talks about the various things that cause and contribute to low dissolved oxygen. Salmon farming is only a small part of that'.[43]

6.43 The TSGA reported that it had significantly increased monitoring and sampling of DO. Further, the industry is working with the CSIRO, UTAS and Sense-t on developing an 'innovative and world first Decision Support System (DSS) with a particular focus on oxygen'. The project will involve international sensor experts and will require 'some creative networking solutions due to the remoteness of the west

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39 Dr Neil Hartstein, Project Manager, Aquadynamic Solutions, *Committee Hansard*, 16 July 2015, p. 24; see also Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 31.

40 Dr Donald Ross, Senior Research Fellow, Institute for Marine and Antarctic Studies, *Committee Hansard*, 15 July 2015, p. 44.

41 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, p. 5.

42 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, pp 4, 5.

43 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, p. 11.

coast'.[44] It also stated that additional work has been undertaken and completed in relation to the recommendations contained in the Working Group report.[45]

6.44 However, Environment Tasmania refuted the evidence from Dr Whittington that DO levels had increased back to the long-term normal level. Environment Tasmania stated that the industry and the government had 'been promoting one month's percentage increase in dissolved oxygen levels through media, when a detailed look at the leaked reports shows system-wide changes outside the long-term trends, with the harbour potentially moving to "a new equilibrium" – meaning a catastrophic shift in the ecosystem'.[46]

6.45 In its supplementary submission, Environment Tasmania provided IMAS datasets for Macquarie Harbour to support its claim and stated that the 'data loggers are in the World Heritage Area and should therefore be taken with extra seriousness'.[47]

6.46 In response to this evidence, the TSGA commented that harbour-wide, DO levels in bottom and mid waters have returned to, or are approaching, those recorded at the start of the industry monitoring period in 2011. In relation to the World Heritage Area, the TSGA provided an extensive response on monitoring outcomes and concluded that 'the observed fluctuations in DO levels within the [World Heritage Area] over many years would appear to be of little significance to the ecology of the [World Heritage Area] and the primary concern has been addressed with a positive outcome'.[48]

Fish kill event

6.47 In May 2015, approximately 85,000 fish (3.7 per cent of fish stocks) farmed by Petuna in Macquarie Harbour were killed. Dr Whittington noted that the fish kill was the result of very low DO concentrations which occurred during an extreme climate event:

> …we had extremely high north-westerly winds blowing down the harbour for a number of days, coupled with very low pressure. Essentially, that caused water in the harbour to get blown to the bottom end—the south-eastern end of the harbour—which then caused or enabled a significant recharge of ocean water into the harbour. That oceanic water is dense, so it

44 Tasmanian Salmonid Growers Association, 'Macquarie Harbour and Dissolved Oxygen Discussion', 3 March 2015, http://www.tsga.com.au/macquarie-harbour-and-dissolved-oxygen-discussion/ (accessed 2 August 2015).

45 Tasmanian Salmonid Growers Association, http://www.tsga.com.au/macquarie-harbour-dissolved-oxygen-working-group-report-october-2014/ (accessed 14 August 2015).

46 Environment Tasmania, *Submission 93*, p. 9.

47 Environment Tasmania, *Supplementary Submission 93*, p. 2.

48 Tasmanian Salmonid Growers Association, *Supplementary Submission 33*, p. 3.

> slides in at an appropriate depth in the harbour, and that can cause, essentially, waves internal to the water body.[49]

6.48 Dr Whittington went on to emphasise that the low DO water that upwelled resulted in the mortality event at a single lease in the harbour.[50]

Biomass cap

6.49 As noted above, the referral decision contained a condition in relation to total biomass in Macquarie Harbour:

> The total biomass held across all lease areas must not exceed 52.5 percent of the modelled maximum sustainable biomass until limit levels are reviewed in mid 2013, and must not exceed any such altered levels as may be identified thereafter by the Tasmanian Government.[51]

6.50 The committee received evidence that the condition in the referral decision was an interim measure to enable the Tasmanian Government to set a new biomass limit for Macquarie Harbour.[52] Dr Main stated that the 52.5 per cent cap was:

> …an interim measure set by the EPBC [Act] until industry and government could sit down and review what we would have as appropriate trigger limits going forward for the industry and appropriate biomass limits and a whole range of other variables. It was an interim measure to give the process the time it required to come up with a workable solution going forward for the longevity of Macquarie Harbour. So it was a point in time interim measure.[53]

6.51 It was noted that the review was undertaken and Dr Whittington stated that the 'condition fell away with the submission of a review which occurred'.[54] As a consequence, 'the companies were then operating under the Tasmanian legislation and

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49 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, p. 10; see also Dr Donald Ross, Senior Research Fellow, Institute for Marine and Antarctic Studies, *Committee Hansard*, 15 July 2015, p. 44.

50 Dr John Whittington, Secretary, Department of Primary Industries, Parkes, Water and Environment, *Committee Hansard*, 15 July 2015, p. 11.

51 Department of Sustainability, Environment, Water, Population and Communities, *Notification of REFERRAL DECISION – not controlled action if undertaken in a particular manner, Marine Framing Expansion, Macquarie Harbour, Tasmania* (EPBC 2012/6406)

52 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 28.

53 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 28.

54 Dr John Whittington, Secretary, Department of Primary Industries, Parks, Water and Environment, *Committee Hansard*, 15 July 2015, p. 9.

were acting in accordance with that'.[55] The DPIPWE indicated that the biomass condition lapsed on 18 October 2013.[56]

6.52 In setting a new biomass limit, as well the research conducted by CSIRO and others over the last two to three years, Dr Main commented that the Tasmanian Government has engaged a third party to help set new biomass limits for Macquarie Harbour. He went on to state:

> They are going through a process right now of getting peer reviewed international scientists to look at the issues, all facets of the issues, all the information from a range of different sources. There is a broad church of people contributing to the review.[57]

6.53 The result of that review will be provided to the state government. Dr Main added that the state government will then provide the companies with the outcomes which 'the companies are prepared to accept'.[58]

6.54 Dr Main further noted that the current stocking levels are similar to the 52.5 per cent cap and the industry is undertaking 'a step-wise increase of expansion into Macquarie Harbour'.[59]

Alleged breach of the 52.5 per cent cap

6.55 On 3 March 2015, Mr Kim Booth, the then leader of the Greens in the Tasmanian House of Asssembly, tabled a leaked email sent to the Tasmanian Premier from Mr Mark Porter, Chief Executive Officer, Petuna, and Mr Peter Bender, Managing Director, Huon Aquaculture.[60]

6.56 The email, dated 19 September 2014, detailed concerns about the water quality in Macquarie Harbour. The email indicated that fish farmed by Tassal had been treated with antibiotics to control a disease outbreak. Mr Porter and Mr Bender commented that this represented a 'clear warning sign that the environment we are growing fish in is becoming compromised'.[61]

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55 Dr John Whittington, Secretary, Department of Primary Industries, Parks, Water and Environment, *Committee Hansard*, 15 July 2015, p. 10.

56 Department of Primary Industries, Parks, Water and Environment, *Answers to questions on notice*, No. 2.

57 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 29.

58 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 29.

59 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 29.

60 Mr Kim Booth, Leader of the Greens, *Hansard*, Tasmanian House of Assembly, 3 March 2015, pp 17–18.

61 Tasmanian House of Assembly, *Tabled paper*, 3 March 2015.

6.57 The email also commented on the 52.5 per cent cap, with Mr Porter and Mr Bender stating that Government advice that there was no cap in place as of October 2013, was contrary to the industry's understanding. Further, the email included comments on a predicted breach of the cap in October 2014 by Tassal.[62]

6.58 In response to questions concerning the conditions in Macquarie Harbour at the time of the comments from Mr Porter and Mr Bender, Dr Whittington stated that:

> These were complicated times. There was a fair bit of concern, both within the agency as a regulator and within the companies, on what was happening in the harbour.[63]

6.59 Dr Whittington also stated that he had no knowledge of any breach of the cap prior to the submission of the review.[64] In relation to the comments in the leaked email, Dr Whittington stated that the cap had fallen away by the time the emails were circulated, 'so there was no cap to be breached at that point in time. The companies were producing salmon in accordance with the regulatory requirements that we were imposing at that stage'. Dr Whittington also stated:

> The assertions in that email are factually incorrect, in my view. It is not appropriate for me to speculate because that is factually incorrect. As I have said, when that cap was in place before it fell away with the submission of the review it was in the context of the total production in the harbour; it was not apportioned between companies. Each company was at liberty to grow within the context of their licence conditions.[65]

6.60 The TSGA was also questioned about whether the cap was removed because one of the companies in Macquarie Harbour was going to breach the cap. Dr Main responded:

> Absolutely not. It was a specific finite time frame. The life of the cap had a specific time frame. It was to allow a review by both industry and governments in order to make a decision on how to proceed forward from that point. At that particular time, the lifting of the cap would have allowed the industry to then go ahead and put into the harbour the biomass that we modelled for and that had been approved through the EIS process. We are

62 Tasmanian House of Assembly, *Tabled paper*, 3 March 2015.

63 Dr John Whittington, Secretary, Department of Primary Industries, Parks, Water and Environment, Tasmania, *Committee Hansard*, 15 July 2015, p. 3; see also Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 30.

64 Dr John Whittington, Secretary, Department of Primary Industries, Parks, Water and Environment, Tasmania, *Committee Hansard*, 15 July 2015, p. 9.

65 Dr John Whittington, Secretary, Department of Primary Industries, Parks, Water and Environment, Tasmania, *Committee Hansard*, 15 July 2015, p. 10.

> actually nowhere near that limit at the moment. We are taking a far more conservative stepwise approach to putting biomass into the harbour.[66]

6.61 Dr Main also noted that the email was a 'point-in-time communication' and what was in the email 'is just not what is apparent now in the current time frame'. He emphasised that the salmonid industry was very united.[67]

6.62 Ms Feehely, EDO Tasmania, commented on the timing of the removal of the cap and noted that it was to be reviewed to identify a sustainable biomass limit.[68] In relation to when the cap no longer applied, Ms Feehely stated that 'arguably it cannot exceed 52.5 until it is reviewed and an altered level is set'.[69]

Biological changes

6.63 A further issue raised by submitters was the increased abundance of Dorvilleid in Macquarie Harbour. The Australian Marine Conservation Society stated that Dorvilleid are 'opportunistic polychaete worms, abundance of which are known to increase in stressed or polluted conditions'. Dorvilleid have been recorded within the World Heritage Area.[70]

6.64 The TSGA commented that Dorvilleid were not identified during the initial processes under the EPBC Act for the expansion of marine farming at Macquarie Harbour. Dr Main stated that the Dorvilleid debate and discussion arose after the decision that the expansion was not a controlled action. Dr Main went on to comment that:

> …the dorvilleid worms in Macquarie Harbour are actually a naturally occurring species. People have a perception that they are a result of industry or that they have been introduced. We have even heard a range of views about their having been introduced by industry. They are a naturally occurring species in Macquarie Harbour. Nor is there any evidence or suggestion that they have never been in the world heritage area. These are a species that occurs harbour-wide. The actions of the worms are absolutely critical for Macquarie Harbour. They break down stuff. They get rid of the stuff that comes down through the catchment, and from salmon farms, as

66 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 29.

67 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 28.

68 Ms Jessica Feehely, Principal Lawyer, Environmental Defenders Office Tasmania, *Committee Hansard*, 15 July 2015, p. 56.

69 Ms Jessica Feehely, Principal Lawyer, Environmental Defenders Office Tasmania, *Committee Hansard*, 15 July 2015, p. 57.

70 Australian Marine Conservation Society, *Submission 9*, p. 6.

> well. Dorvilleid worms have a part in the ecosystem of Macquarie Harbour.[71]

6.65 Dr Whittington, DPIPWE, commented that the presence of Dorvilleid in Macquarie Harbour did not indicate a breach of the EPBC Act conditions. He went on to state that Dorvilleid numbers are monitored, particularly through remote operated cameras. They have been used by regulators for a number of years as a bioindicator and by industry to gain an understanding about 'what is going on in marine farming operations'. Dr Whittington noted that 'numbers have increased considerably in lease areas and well outside of lease areas in Macquarie Harbour. We do not understand at this point in time exactly what that means for the environment'.[72]

6.66 Dr Whittington stated that, as it is not understood exactly the reason for the increase, a study has been commissioned to gain further information on Dorvilleid in Macquarie Harbour. He concluded, while there are Dorvilleid present, 'that in itself is not necessarily a bad thing, but it is certainly something we would like to understand'.[73]

6.67 IMAS provided the committee with an outline of the project to review the current understanding of Dorvilleid ecology and in particular, their response to organic enrichment as well as their current use as indicator of the impacts of fin-fish farming. IMAS commented that preliminary results 'suggest that Dorvilleids can be effective indicators of sediment condition in Macquarie Harbour, although some considerations need to be taken into account when using them for monitoring'.[74]

Role of the Commonwealth

6.68 While noting the Commonwealth's involvement in the aquaculture industry through the EPBC Act, many submitters considered that the regulation of the industry was a state matter. For example, the Australian Workers' Union commented:

> We do not believe that role should be expanded any further. We think that the Commonwealth should confirm with the Tasmanian government that it recognises that this is a matter properly regulated by the Tasmanian government.[75]

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71 Dr Adam Main, Chief Executive Officer, Tasmanian Salmonid Growers Association, *Committee Hansard*, 15 July 2015, p. 30; see also Tasmanian Salmonid Growers Association, *Response to submissions*, p. 10.

72 Dr John Whittington, Secretary, Department of Primary Industries, Parks, Water and Environment, Tasmania, *Committee Hansard*, 15 July 2015, p. 6.

73 Dr John Whittington, Secretary, Department of Primary Industries, Parks, Water and Environment, Tasmania, *Committee Hansard*, 15 July 2015, p. 6.

74 Institute for Marine and Antarctic Studies, *Submission 20*, p. 12.

75 Mr Robert Flanagan, Assistant Branch Secretary, Australian Workers' Union, Tasmanian Branch, *Committee Hansard*, 15 July 2015, p. 22; see also Huon Resource Development Group, *Submission 75*, p. 2.

6.69 However, EDO Tasmania commented that the Commonwealth Government should still have a role in monitoring the environmental impacts of fin-fish farming in Macquarie Harbour. Ms Feehely stated that:

> Clearly, aquaculture management in interstate waters is principally a state issue. However, where aquaculture activities impact on matters of national environmental significance, whether that is threatened species, water quality, Ramsar wetland's or heritage places, that is a matter for the federal government. To the extent that the federal government effectively delegates its responsibility for managing these impacts to the state government, whether through the prescribed manner—the decision in relation to Macquarie Harbour—or any future bilateral agreement, the effectiveness of Tasmania's regulatory framework is something that should concern the federal government.[76]

6.70 EDO Tasmania noted that the expansion in Macquarie Harbour was determined to be not a controlled action and, as such:

> …the Federal Minister is now unable to intervene to address significant impacts, unless the Minister is satisfied that the action is not being carried out in the manner described. This unduly restricts the Minister's ability to take action to protect threatened species and World heritage values.[77]

6.71 However, pursuant to section 78 of the EPBC Act, the Minister may revoke this decision and replace it with a decision that the matter is a controlled action that requires assessment, if satisfied that this is warranted because:

- substantial new information about the impacts of the action is available;
- a substantial change in circumstances has occurred that was not foreseen at the time of the decision.[78]

6.72 Ms Feehely went on to comment on the conditions contained in the EPBC Act referral decision and action that could be taken if those conditions were not met. She stated that most conditions were iterative, that is once a problem was identified, an action would be required to address it. However, the biomass cap was a firm decision that could be breached. Ms Feehely went on to state:

> Where an operation is not being conducted in accordance with the prescribed manner that is set out in a decision, the minister has the opportunity to reconsider that decision and decide that it is in fact an action that should be controlled under the EPBC Act and that enforcement action is able to be taken by the federal minister. Equally, even where the prescribed manner is being complied with, but there is evidence either through changed circumstances or significant new scientific information

76 Ms Jessica Feehely, Principal Lawyer, EDO Tasmania, *Committee Hansard*, 15 July 2015, p. 52.

77 EDO Tasmania, *Submission 70*, p. 14.

78 EDO Tasmania, *Submission 70*, p. 14.

> about the impacts, there is also the opportunity to reconsider whether in fact those impacts are more significant than originally anticipated and significant to the extent that it should now fall within the EPBC Act and the federal minister should have some role in regulating that activity.[79]

6.73 Ms Feehely concluded:

> Irrespective of whether the conditions themselves or the prescribed manner is being complied with…there is also the opportunity under the EPBC Act for that decision to be reconsidered if the impacts are seen as being significantly higher than they were anticipated. So, information in relation to water quality might be a reason for the minister to reconsider whether or not it should be controlled under the EPBC Act.[80]

6.74 EDO Tasmania argued that the Minister should consider revoking the original decision in the light of evidence of nutrient issues, low DO levels and concerns regarding expected water flows. In addition, as a controlled action, the Minister would be able to take enforcement action where Tasmanian Government regulators have failed to do so.[81]

6.75 Similarly, Environment Tasmania stated:

> The failure of the Tasmanian regulator to adequately protect those matters is an excellent example of why it is so important that the Federal Government maintain oversight for species and areas recognised by the EPBC Act as having special importance.[82]

Committee comment

6.76 The committee notes that the expansion of aquaculture in Macquarie Harbour has been the only Tasmanian aquaculture matter referred to the Commonwealth under the EPBC Act. The expansion was found not to be a controlled action under the EPBC Act if undertaken in accordance with the Macquarie Harbour Marine Farming Development Plan. The Commonwealth has maintained a monitoring role and as such, the Department of the Environment undertook a monitoring inspection in September 2013.

6.77 The committee acknowledges the importance of the health of the marine environment in Macquarie Harbour given that it is only one of two stratified water systems in Tasmania, its proximity to the Tasmanian Wilderness World Heritage Area and as habitat for the endangered Maugean skate.

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79 Ms Jessica Feehely, Principal Lawyer, Environmental Defenders Office Tasmania, *Committee Hansard*, 15 July 2015, p. 56.

80 Ms Jessica Feehely, Principal Lawyer, Environmental Defenders Office Tasmania, *Committee Hansard*, 15 July 2015, p. 56.

81 EDO Tasmania, *Submission 70*, p. 14.

82 Environment Tasmania, *Submission 93*, p. 15.

6.78 Evidence from environmental groups raised concerns about recent changes to dissolved oxygen levels in the Macquarie Harbour. The committee notes that in 2013 fluctuations to the levels of dissolved oxygen were observed. Given the impact of low levels of dissolved oxygen on the marine environment, fish health and thus the sustainability fish farming in Macquarie Harbour, the Tasmanian Government and the industry sought expert scientific assistance to identify the drivers of these changes.

6.79 Research commissioned by the Macquarie Harbour Dissolved Oxygen Working Group, undertaken by CSIRO, has provided greater understanding of the Macquarie Harbour marine environment, the causes of changes to dissolved oxygen levels and has indicated that dissolved oxygen levels have returned to those previously observed. Further, the harbour has responded in a way consistent to that predicted by the CSIRO research. The committee also notes that, in response to concerns about dissolved oxygen levels, the industry has increased monitoring and sampling the results of which are reported to the Department of Primary Industries, Parks, Water and Environment. The industry is also responding to the recommendations of the CSIRO research.

6.80 The committee notes the government's and the industry's commitment to ensuring the ongoing health of Macquarie Harbour. The committee considers that there has been a timely and appropriate response to issues related to fluctuations of dissolved oxygen in the harbour. Further, that ongoing research and adaption of farming practices as a result of that research will ensure that the environmental impacts on the Tasmanian Wilderness World Heritage Area are not significant.

6.81 Evidence was also provided about the research undertaken to improve knowledge of the Maugean skate and the increased abundance of Dorvilleid in the harbour. The committee notes the preliminary findings that there appear to be more Maugean skate in the harbour than originally suggested (see chapter 4 for further information).

6.82 There was considerable discussion in evidence in relation to the biomass cap for farming operations in Macquarie Harbour. The committee also notes that it was the leaking of an email from the chief executives of Petuna and Huon Aquaculture concerning, among other matters, the biomass cap which led to the reference of the inquiry to the committee.

6.83 The biomass cap of 52.5 per cent was contained in the Commonwealth's referral decision. It was set as an interim measure until a review was undertaken in mid-2013 and the Tasmanian Government identified an altered level. The review was completed in October 2013. The committee notes that at that time, changes in dissolved oxygen levels were observed which resulted in further research being undertaken by CSIRO. The Tasmanian Government also sought an international third-party scientific review to inform its decision about the allowable biomass for Macquarie Harbour. In addition, the industry commented that the biomass has remained close to the cap contained in the referral decision.

6.84 The committee considers that the Tasmanian Government's approach to an altered biomass in Macquarie Harbour is sound. As well as the initial review, the Government has sought a further third-party review to assist it identify an altered biomass level. The committee notes that industry has stated that it will abide by the findings of the third-party review.

6.85 The committee concludes that the current monitoring and regulatory regime provides adequate oversight of fin-fish farming operations in Macquarie Harbour and addresses emerging issues in a timely way as required by the referral decision. In addition, much research has been undertaken recently to understand changes in the harbour. As a consequence, the committee does not believe that, at the present time based on the evidence before it, there is a need to consider the intervention of the Commonwealth as provided for under the EPBC Act.

6.86 Nonetheless, the Department of the Environment has an ongoing monitoring role for Macquarie Harbour. However, the committee observes it was unclear from the evidence received as to the extent of the engagement with the Department that was undertaken by the industry as issues with the marine environment in Macquarie Harbour emerged. The committee therefore encourages the Department to consider a further monitoring inspection as part of its next year's annual compliance monitoring plan.