

Statement of reasons for determinations made pursuant to Management Controls 3.3.1 and 3.3.5 of the Macquarie Harbour Marine Farming Development Plan October 2005

I, Wes Ford, Director, Environment Protection Authority, acting under delegation of the Secretary of the Department of Primary Industries, Parks, Water and Environment, provide this statement of reasons for my determination, pursuant to Management Controls 3.3.1 and 3.3.5 of the *Macquarie Harbour Marine Farming Development Plan October 2005 (consolidated version incorporating Amendment No 1 Approved 28 May 2012)*, (the Plan), regarding the maximum permissible stocking density of finfish held within any fish cage and maximum permissible biomass of finfish that may be stocked within all areas covered by this plan during the period 1 June 2020 and 31 May 2022 for licensed finfish marine farming operations.

I further provide this statement of reasons for my determination pursuant to Management Control 3.3.5 of the plan for the apportionment of biomass between the leaseholders licensed for finfish marine farming operations within specified areas of this plan.

Determination under Management Control 3.3.1

- 1 The maximum permissible stocking density of finfish held within any fish cage, within the entire area covered by this plan, is 15 kg/m³, which is extended for up to 40 per cent of the cages of the current harvest year class biomass of salmonid fish (inclusive of those cages already harvested) to a maximum of 17 kg/m³ at any one time, as long as the average for the total number of nets being held on the applicable sites does not exceed 15 kg/m³.

Basis for decision

- 1.1 The maximum permissible stocking density is based on the stocking density agreed by the parties to the *Macquarie Harbour Area Management Agreement: Environmental Management Plan Version 1.0 (December 2012)*. This remains unchanged from the previous determination.

Determination under Management Control 3.3.5

- 2 The maximum permissible biomass (tonnes per hectare) of finfish held in cages that may be stocked within the entire area covered by the *Macquarie Harbour Marine Farming Development Plan October 2005* for the period 1 June 2020 to 31 May 2022 is 10.26 tonnes per hectare. This remains unchanged from the previous determination.

Basis for decision

- 2.1 The maximum permissible biomass (tonnes per hectare) has been calculated based on a total finfish biomass (TB) of 9500 tonnes and total area licensed for the farming of finfish (TA) of 925.88 hectares. In accordance with Management Control 3.3.7 of the Plan, TB/TA must be no greater than 10.26 tonnes per hectare, where TB = total biomass in tonnes of finfish held by lessees or sub-lessees within the area of all leases within the Plan area at a single point in time, and TA = combined total lease area licensed for the farming of finfish held by lessees or sub-lessees within the Plan area at that same point in time.
- 2.2 The area of all leases within the Macquarie Harbour Marine Farm Development Plan Area has been included in the calculation of this maximum permissible biomass determination. The ability of each company to stock their respective leases, and therefore utilise their biomass allocation, will be dependent on the capacity of each lease to be operated in accordance with benthic compliance requirements and pre-stocking approval from the Director, EPA. On an individual

lease basis, if management directions related to benthic condition result in the loss of lease area for farming, then a company may not be able to utilise their whole biomass allocation.

- 2.3 Since 1 February 2019 the total lease areas for Petuna and Tassal have been combined for the purposes of biomass apportionment. This change was requested by the companies due to the implementation of a Joint Venture Agreement for salmonid aquaculture in Macquarie Harbour. The Agreement was seen to allow increased flexibility in terms of improved separation of salmonid year classes and longer lease following periods.
- 2.4 Based on the above, the apportionment of the maximum permissible biomass between lessees/sub-lessees operating in the Plan Area will be as per the table below:

Lease area	ha	%	Maximum Permissible Biomass (t/ha)	Maximum Permissible Biomass (tonnes)
Petuna & Tassal Joint Venture Partners	695.92 (Petuna 415.95 & Tassal 279.97)	75.16	10.26	7140.14
Huon	229.96	24.84	10.26	2359.38
Total	925.88			9499.5

- 2.5 No smolt input limit is set at this time. Each company should determine their smolt input based on their forward production planning with respect to maximum permissible biomass allocations and any other relevant factors such as fallow directions and benthic conditions at individual leases. The setting of smolt input limits for the Harbour may be considered at a future time based on the environmental performance of the Harbour and significant changes in stocking and growth plans implemented by the companies within the biomass limit.
- 2.6 This biomass determination of 10.26 tonnes/hectare (1 June 2020 – 31 May 2022) is unchanged from the previous biomass determination in Macquarie Harbour (1 June 2018 to 31 May 2020) which was 10.26 tonnes/hectare.
- 2.7 My biomass determination for the period 1 June 2020 to 31 May 2022 is based on consideration of the current environmental status of the Harbour (outlined below), and my view that it is prudent to adopt an approach which maintains the current biomass for a sufficient time to allow the Harbour response to be monitored and interpreted meaningfully.
- 2.8 I have considered the following lines of evidence to support the draft determination:
- 2.8.1 IMAS Technical Reports: The February 2020 update report from IMAS on the ecological condition of the Harbour shows an improvement in some key environmental parameters both on and off lease in comparison with Spring/Summer 2016/2017. The results from the most recent June 2019 survey indicate improved sediment conditions including an increase in the number and abundance of benthic species and reduced *Beggiatoa* bacterial mats on most of the research transects. However, dissolved oxygen levels in the mid and bottom waters as at November 2019 are still lower than levels observed historically.
- 2.8.2 *Beggiatoa* compliance surveys: EPA review of January 2020 survey results found thirteen non-compliant survey points for *Beggiatoa* detected across three leases. Eleven of these non-compliances were recorded at the southernmost leases – MFL 213, which until May 2020 had smolt, and MFL 266, which has been fallow since June 2019. This is the highest non-compliance figure in the Harbour since January 2017 and in terms of seasonal comparison, compares with six non-compliances in January 2019 and ten non-compliances in January 2018.
- 2.8.3 *Beggiatoa* surveys World Heritage Area: *Beggiatoa* was present at five of the nine control sites in the WHA in January 2020. This includes site 39 (closest to the WHA boundary) for the first time since the Jan/Feb 2017 survey round. *Beggiatoa* has been observed in variable

patchy extent at the four other sites (43, 44, 58, 59) in numerous previous surveys since January 2016, with a reduction during the May 2017 – May 2018 period, increasing again from mid-2018. An increase in extent/coverage was recorded at two of these sites in January 2020.

- 2.8.4 Environmental licence water quality limits: As reported in April 2020, monthly ammonia, nitrate and dissolved oxygen data collected for sites located across Macquarie Harbour demonstrate compliance with the rolling annual median indicator limits outlined in environmental licences. Median values for ammonia and nitrate at 20 metres represent amongst the lowest concentrations since 2011. Dissolved oxygen concentrations at 20 metres, while remaining below the long-term modelled 20th percentile value, has shown some limited improvement when compared to other 12-month periods to April over the last three years.
- 2.8.5 Long term EPA monitoring of dissolved oxygen in Macquarie Harbour: Dissolved oxygen (DO) in the Harbour continues to be significantly below historical levels (4-6 mg/L) pre 2010 for mid and bottom waters with levels below hypoxic conditions (<3mg/L) - i.e. severe hypoxic (<2mg/L) and anoxic (<1mg/L) conditions. Sites observed over the whole Harbour have levels below the long-term (1993-2010) 20th percentile value for the Harbour for depths below ~6m. The most significant reduction in DO occurs within that part of the Harbour occupying the World Heritage Area (WHA). Mid (25m) and bottom (35m) waters on the WHA boundary, approximately 1km from MFL 266, exhibit recurring severe hypoxia with instances of anoxia since continuous monitoring began in 2013 at this location. Surface (10m) waters at this site have also declined significantly with DO levels approaching hypoxia in the early part of this year. This occurrence is consistent with the known hydrodynamic circulation patterns, which combined with labile carbon and nutrient loading from aquaculture sources, result in dissolved oxygen draw downs in the ageing deeper waters of the Harbour reporting in a south-easterly direction towards the head of the estuary.
- 2.8.6 Maugean Skate Research Project: FRDC 2016/068: Vulnerability of the endangered Maugean Skate population to degraded environmental conditions in Macquarie Harbour. The December 2019 progress report to FRDC outlined initial findings that the size distribution of both male and females in the present study show a shift towards larger mean sizes and a lower incidence of smaller individuals than the two previous surveys.
- 2.8.7 Recent reports on the environmental health of Macquarie Harbour indicate that a sustained recovery of middle and bottom dissolved oxygen levels has not yet eventuated. This remains a concern in terms of potential linkages to increased lease non-compliance; the spread of *Beggiatoa* into the World Heritage Area.
- 2.9 Consideration of this biomass determination has been made in accordance with my delegated authority in relation to environmental conditions in Macquarie Harbour. Decisions regarding stocking made in relation to biosecurity issues are a matter for the Secretary of the Department of Primary Industries, Parks, Water and the Environment, the Chief Veterinary Officer, and/or the Minister for Primary Industries and Water. Decisions on biomass limits made by the Director, EPA in relation to protection of the ecological health of the Harbour, do not limit the Secretary or the Minister from further directing the removal of stock from the Harbour in the case of biosecurity concerns.