



Australian Government

Department of Climate Change, Energy,
the Environment and Water



Tasmanian
Government

National Recovery Team for the Maugean Skate Meeting 4: 30-31 July 2024 – Public Communique

Summary

The National Recovery Team for the Maugean Skate met for the fourth time, in Hobart and online, from 30-31 July 2024. Upon completion of the meeting Recovery Team Members were given the opportunity to inspect the captive facility at the Institute for Marine and Antarctic Studies (IMAS) facility at Taroona.

The Chair acknowledged that effective collaboration between members and stakeholders has led to substantial progress in delivering key conservation actions for the Maugean skate in the 12 months that the Recovery Team has been working. As a result of the galvanisation and coordination of urgent effort, effective partnerships and leveraging of financial and in-kind resources, 90% of actions that were identified as priorities in the Conservation Action Plan for the Maugean skate (CAP) for the first year are either complete or ongoing. This includes implementation of significant progress in trials to reoxygenate water in Macquarie Harbour and continued progress in developing captive breeding capability for Maugean skate.

Supporting these management actions, the Recovery Team shared status updates on monitoring and modelling initiatives designed to improve collective understanding of Macquarie Harbour and the Maugean skate, and support identification and evaluation of management actions. These included Commonwealth Scientific and Industrial Research Organisation (CSIRO) hydrodynamic and oxygen process modelling, and Tasmanian Environment Protection Authority (EPA) monitoring showing encouraging environmental signs, with oxygen levels trending up within middle and deeper waters across Macquarie Harbour.

Captive breeding

There have been recent media releases from [IMAS](#), and the [Tasmanian](#) and [Australian](#) governments providing updates on the captive breeding program. Recent world-first hatchings of captive laid eggs, and field-collected eggs, together with accompanying development of husbandry, welfare and biosecurity protocols and procedures, continue to build on the body of knowledge of ex-situ insurance techniques for this species.

Community engagement

The Recovery Team discussed the high level of interest from the community and the importance of providing regular meaningful updates, noting the valuable community engagement activities undertaken and planned by [Cradle Coast Natural Resource Management](#) (CC NRM). These include initiatives aimed at increasing community understanding of and engagement with Maugean Skate recovery actions, such as the establishment of a project office on the Strahan esplanade for 'drop-in' chats and

updates, art, science and citizen science activities and, a community survey on the impacts and benefits of conservation actions.

In addition, researchers from IMAS hosted a well-received science forum on June 12, 2024, for non-government organisations, providing members of Tasmanian environmental groups with a detailed and accurate understanding of scientific matters as they relate to the health of Macquarie Harbour and the biology of the Maugean skate.

The Recovery Team further committed to providing regular updates and scientific reporting. Members discussed holding a public science forum in Strahan and on-line, to coincide with the fifth or sixth Recovery Team meeting, to support the genuine interest of local community members. The team is also working on developing an annual Recovery Team report.

Legislative processes

The Australian Government Department of Climate Change Energy, Environment and Water (DCCEEW) provided an update on the [EPBC Act Reconsideration Requests for Salmon Farming in Macquarie Harbour](#). Over 2,500 submissions were received as part of the reconsideration process and are in review. The Federal Minister for Water and Environment, the Hon Tanya Plibersek MP, is considering all relevant comments made in submissions along with other relevant information and will decide on the reconsideration request as soon as practicable.

The Maugean skate is currently under a reassessment of threatened species listing status under the EPBC Act. As part of this process, an updated Conservation Advice is being developed by the Commonwealth independent Threatened Species Scientific Committee (TSSC). On behalf of the TSSC, DCCEEW thanked Recovery Team members for their review of the draft Conservation Advice and noted that the draft Listing Assessment would be released for public consultation ([currently open for comment until the 26/09/2024](#)).

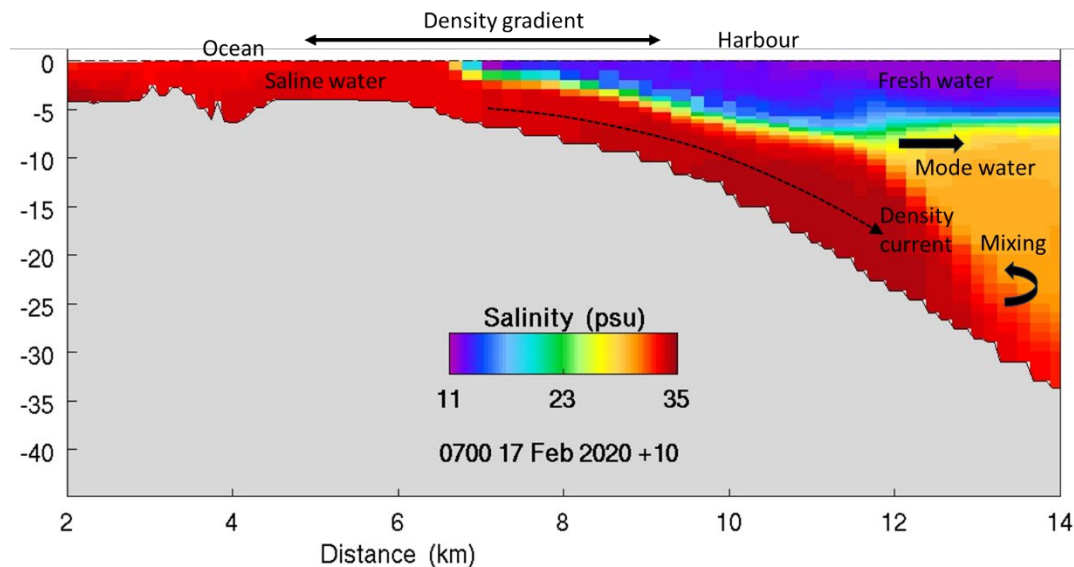
The Department of Natural Resources and Environment Tasmania (NRE Tas) outlined the likely timeline and process for bringing forward the planned cessation of recreational gillnetting in Macquarie Harbour.

Modelling initiatives

CSIRO explained the environmental processes underpinning ocean recharge events in Macquarie Harbour, in particular those occurring over the last four years including in early 2024, which can influence salinity and dissolved oxygen (DO) levels. Multiple conditions must align for a recharge event (which brings in oxygen rich ocean water) or overturning event (which redistributes oxygen through the harbour).

Tidal conditions, offshore currents, wind conditions and river flows are the main factors that influence ocean renewal events in Macquarie Harbour. Hydro power operations contribute to inflows from the King and Gordon Rivers to the harbour. There may be benefits in modifying hydroelectric generation patterns which play a role in river flows,

to enable ocean water to enter the harbour, which could assist in increased levels of oxygenated marine water entering the depths of the harbour. This needs to be carefully considered in the context of the time of year and the status of other drivers (e.g. total catchment inflows, oceanic conditions, tidal state).



Schematic of oceanic renewal due to a density current based on model output.

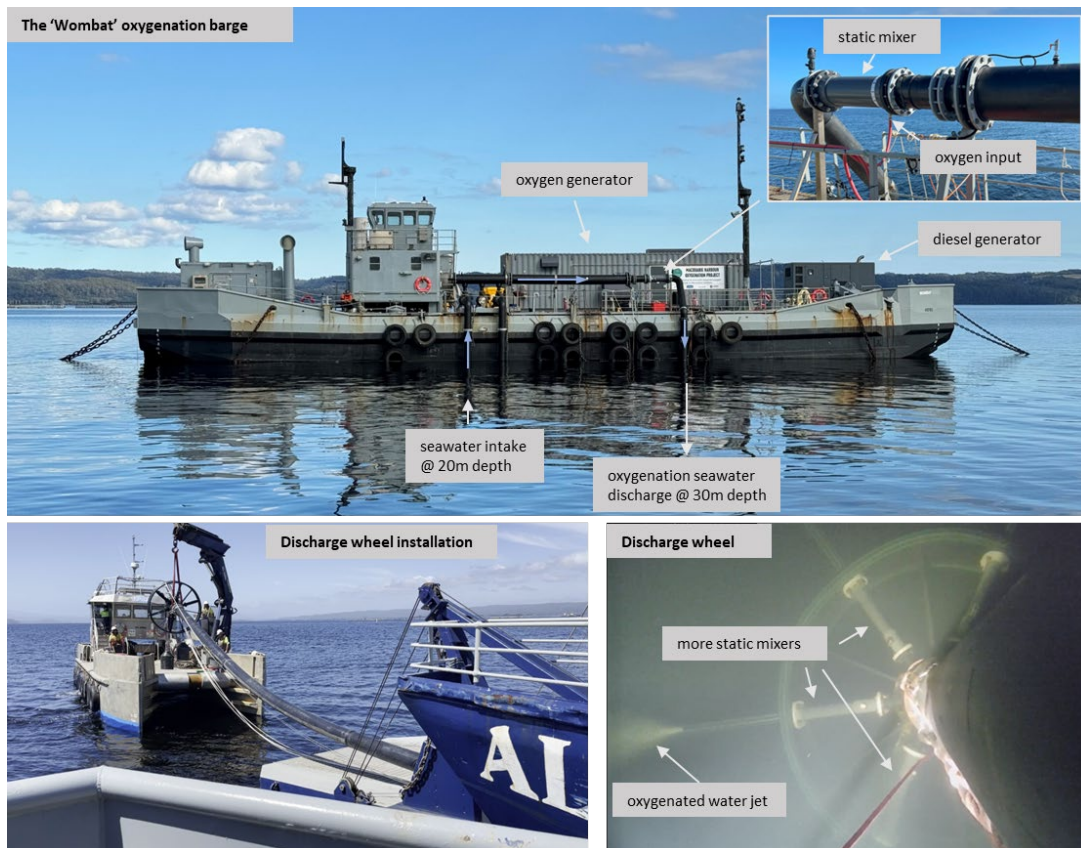
Hydro Tasmania have developed rainfall/runoff models, which take 7-day rainfall forecasts and convert them into predicted inflows to Macquarie Harbour. These models were completed in May 2024 and are providing valuable daily data outputs to CSIRO that feed into hydrodynamic and oxygen process models of the harbour. Historical time series of river inflows into Macquarie Harbour for the King, Gordon and minor catchments have also been developed. Hydro Tasmania is currently investigating the feasibility of reinstating a flow monitoring site on the Gordon River below the confluence with the Franklin River. If reinstated, this will provide a calibration point for derived flows at the lowest point in the Gordon catchment – the key driver of inflows to Macquarie Harbour.

CSIRO's hydrodynamic and oxygen process models are on track to be completed in 2024. These models are intended to predict the distribution of oxygen for Macquarie Harbour with the ability to run a variety of scenarios that encompass natural and anthropogenic impacts on the harbour and the potential impacts of management levers. It was noted that the commendable progress on modelling efforts has been made possible because of the collaborative approach to collection and sharing of data, intellectual property and resources between different stakeholder groups involved in monitoring in Macquarie Harbour, including IMAS, the EPA, Hydro Tasmania, CSIRO and industry groups. More about the CSIRO models including the real time outputs can be found on the [CSIRO website](#).

CSIRO model results will be used to inform management of oxygen levels in the harbour and, together with skate knowledge from IMAS, undertake habitat modelling to investigate the way Maugean skates use Macquarie Harbour and how this changes from year to year. This will be an important input into identification of habitat critical to the survival of the skate.

Macquarie Harbour Oxygenation Project (MHOP)

IMAS presented on the progress of the pilot oxygenation trial which has made significant advancements in understanding the feasibility, scalability and environmental efficacy of methods to enhance DO levels in Macquarie Harbour. Two oxygenation trials have now been successfully completed with no adverse ecological responses detected. In the first trial, 500 -700 kg O₂/day was injected over a week and in the second trial the oxygen load was increased from 1,000 to 3,000 kg O₂/day. There has also been a concomitant improvement in the energy efficiency of the system as it has scaled up. The next trial commenced in early August with a focus on increasing loads towards 5,000 kg O₂/day and mapping of the oxygen plume at depth. The direct injection of oxygen through diffuser hoses will also be trialed in the coming months. Additional information on MHOP can be found on the [University of Tasmania website, with further information soon to be published by the Salmon Interactions Team.](#)



Pictures of the 'Wombat' barge moored in location, the oxygen generator, diesel generator, the pipework and discharge wheel. The static mixer in the pipework on the barge is where the oxygen is injected and dissolved into the seawater that has been drawn from depth. There are additional mixers in the discharge wheel (bottom right) to further break up any remaining microbubbles. The picture on the bottom left is from the installation of the discharge pipe and wheel.

Oxygen monitoring

The EPA compared observed dissolved oxygen levels in three segments of Macquarie Harbour to the Interim Default Guideline Values for water quality that have been published at [Macquarie Harbour Monitoring Program | EPA Tasmania](#). Two separate datasets collected by the EPA and the aquaculture industry, were analysed by independent scientists. The [EPA Report](#) suggests that middle-deeper waters have an improving trend of DO levels over time. Using industry data, collected monthly, the EPA compared the 12 months ending May 2017 to the 12 months ending May 2024 and showed improvement between the two years that varied by depth and distance from the harbour entrance. This provides a foundation on which Oxygen Mitigation Plans, currently being finalised by the industry, can be built.

Membership changes

New West Coast Council General Manager Ms Ciarra Spencer attended her first meeting. It was agreed to invite Steven Rust from IMAS as social science researcher to replace Maree Fudge on the Recovery Team. Dr. David Midson General Manager of Marine Resources will replace Will Joscelyne on the Recovery Team as the Marine Resources representative from NRE Tas.

Attendance

The meeting was attended by Recovery Team representatives from IMAS, DCCEEW, NRE Tas, EPA, CSIRO, Hydro Tasmania, Salmon Tasmania, the Australian Marine Conservation Society (AMCS), Copper Mines Tasmania, CC NRM, Strahan Community Aquaculture Forum, West Coast Council and the Zoo and Aquarium Association (ZAA).

Observers from the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF), DCCEEW, the Tasmanian Department of State Growth, CC NRM, and the Fisheries Research and Development Corporation (FRDC) were also in attendance.

Background

The National Recovery Team for the Maugean Skate was formed in July 2023 and has met in October 2023, February 2024 and July 2024. The Tasmanian endemic Maugean skate (*Zearaja maugeana*) is listed as endangered under both Tasmania's *Threatened Species Protection Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999*. The species has also been included as a priority threatened species under the Australian Government's Threatened Species Action Plan 2022-2032.

The next Recovery Team meeting is scheduled for November 2024.