



Australian Government

Department of Climate Change, Energy,  
the Environment and Water



Tasmanian  
Government

## National Recovery Team for the Maugean Skate Meeting 2: Public Communique 12 October 2023



Maugean skate *Zearaja maugeana*. Copyright Jane Rucker/IMAS

The National Recovery Team for the Maugean Skate met for the second time, in Hobart and on-line, on 9 October 2023. The Chair acknowledged the significant body of work progressed since the first meeting, which included formation of Recovery Team working groups with national and international researchers, technical experts and practitioners to inform actions. A summary of these working groups is presented below.

### Captive Breeding Working Group

**Aim:** to establish an ex-situ insurance population to develop a long-term captive breeding program, implementing best-practice welfare standards and husbandry protocols.

**Update:** Expert elicitation workshops were held in September providing a platform for international experts to share their knowledge and expertise in captive breeding programs for other skates, sharks or rays. Key areas for consideration included insights on husbandry and reproductive requirements for breeding skates in captivity, and how relevant and applicable these learnings may be to the Maugean skate. The project team are working through the animal ethics and other relevant permit processes for taking a limited numbers of eggs and adults from the wild as soon as possible, with the aim of initiating a captive population by the end of 2023. Population Viability Analysis scenarios have been completed to inform this process.

## Environmental Remediation Working Group

**Aim:** to assess possible immediate and longer-term options to improve dissolved oxygen levels in Macquarie Harbour.

**Update:** Workshops were held in August and September, providing a platform for experts to share their knowledge in dissolved oxygen remediation programs from other areas, both within Australia and around the world, and for the group to consider and assess potential options. Key outcomes of these workshops were to provide advice on feasibility of urgent and immediate options for action prior to summer 2023. A pilot remediation program involving injection of oxygen into the harbour will commence prior to December (subject to permits and licences) and will include monitoring of environmental conditions in the water column and sediments. Similar programs have been successfully used in other parts of the world to increase concentrations of dissolved oxygen in estuarine systems.

## Dissolved Oxygen Working Group

**Aim:** to assess possible immediate and longer-term options to provide decision support to the Recovery Team on monitoring, modelling and data sharing relevant to dissolved oxygen conditions in Macquarie Harbour and management scenarios/actions; and to agree optimal dissolved oxygen levels for Macquarie Harbour.

**Update:** The Tasmanian EPA has undertaken a detailed review of historic dissolved oxygen levels within Macquarie Harbour and in association with last year's 10% reduction in the scale of finfish farming under the EPA Director's Total Permissible Dissolved Nitrogen Output (TPDNO) determination. Dissolved oxygen targets for Macquarie Harbour using data from 1993-2009 to define preferred conditions within the harbour in surface, mid, and bottom waters, across three different regions of the harbour are currently being finalised as a guideline for remediation work. It was noted that achievement of dissolved oxygen targets will be impeded by climate change because dissolved oxygen concentrations are negatively correlated with increases in temperature.

## Hydrodynamics Working Group

**Aim:** to guide operations to achieve optimal environmental river flows for Maugean skate, including outlining possible modifications to river flows that are achievable over the next 6-18 months.

**Update:** Workshops were held in August and September 2023 to discuss reinstating and broadening the Macquarie Harbour Oxygen Process Model (CSIRO model), and to identify data required to inform any future requirement for modification of hydroelectric flows by Hydro Tasmania into Macquarie Harbour to allow more appropriate environmental flows for Maugean skate habitat protection.

The CSIRO model for Macquarie Harbour represents oxygen dynamics and interactions with river flows, ocean forcing at the boundary between the ocean and the harbour, and interaction with fish farm oxygen demands to inform ongoing sustainable management of the harbour and

to minimise the potentially harmful impacts of human activities on water quality. The model can integrate and provide insights into how the harbour might respond to management scenarios.

The Bureau of Meteorology and Hydro Tasmania discussed products/data that may be useful to enable the CSIRO model to provide insights about the harbour and conditions for potential recharge events.

### Engagement

A component of the work of the Recovery Team is engagement with stakeholders, the Tasmanian Aboriginal community and the general public. The Recovery Team noted recent appointment of a social scientist who has familiarity with the west coast community to be part of the Recovery Team and support planning for engagement.

### Road Map

A draft road map of actions was discussed and will be finalised in the next two weeks to guide and illustrate the immediate work of the Recovery Team.

### Conservation Action Plan

NRE Tas discussed the draft Conservation Action Plan which will set out a conservation planning framework to support recovery of the Maugean Skate. The Action Plan will ensure collective alignment of goals, coordination of priority activities, and identify the resources needed for critical research and management actions.

### EPBC Act Listing Assessment

The Maugean skate is included on the [2023 Finalised Priority Assessment List](#) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Department of Climate Change, Energy, the Environment and Water outlined the timeline for the assessment and provided a [Factsheet for Maugean skate conservation](#) on associated EPBC Act processes.

### Membership

The Chair noted the out-of-session endorsement of inclusion of a social scientist with specific knowledge of Macquarie Harbour and the west coast, a representative from Copper Mines Tasmania and an NRE Tas Aboriginal Cultural Fisheries Officer.

### Background

The National Recovery Team for the Maugean Skate was formed in July 2023. 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 National Threatened Species Action Plan (2022-2032).