

EPA Water Quality Monitoring Plan for Storm Bay

Introduction

The EPA has undertaken to conduct water quality monitoring in Storm Bay to assist in the understanding of the marine environment and provide an independent validation of water quality data provided by the aquaculture industry.

Aims

- To provide water quality information to increase the understanding of water quality in Storm Bay;
- To provide water quality information to increase the understanding of the contribution of each water body (Derwent Estuary, Storm Bay and the D'Entrecasteaux Channel) to the overall water quality of the region;
- To provide water quality information to assist nutrient dispersion modelling and biogeochemical model development and validation for Storm Bay;
- To provide an independent validation of water quality information used for regulation purposes of the D'Entrecasteaux Channel, Tasman Peninsula and Norfolk Bay, Storm Bay off Trumpeter Bay Marine Farming Development Plan Areas (MFDPA) and the proposed MFDPA within Storm Bay.

Description

Water quality data is to be collected on a seasonal basis from nine (9) locations across Storm Bay and on a monthly basis from a site in the Derwent Estuary, D'Entrecasteaux channel and Storm Bay.

Monitoring on a seasonal basis is to commence in January 2018 and on a monthly basis in March 2018.

Program commencement: January 2018 (seasonal), March 18 (monthly)

Scheduled completion: July 2019 (seasonal) June 2020 (monthly)

Extension of the monitoring program is subject to review.

An overview of the monitoring locations is shown in Table 1 and a map of the locations is shown in Figure 1. A list and overview of the environmental parameters to be collected is shown in Table 2.

Table I: List and overview of monitoring locations

| Site ID | Easting | Northing | Latitude | Longitude | WQ monitoring required | Spatial Scale | Comments |
|-----------|---------|-----------|-------------|------------|---|---------------|---|
| EPA-SB1 | 532161 | 5231714 | -43.066597 | 147.395 | Nutrients, water chemistry, phytoplankton | Far-Field | Co-located with Site 1 (IMAS) |
| EPA- SB3 | 533050 | 5225300 | -43.124315 | 147.4063 | Nutrients, water chemistry, phytoplankton | Intermediate | Co-located with BEMP-MP3 |
| EPA- SB6 | 535203 | 5216884 | -43.2 | 147.433302 | Nutrients, water chemistry, phytoplankton | Intermediate | Co-located with Site 6 (IMAS) |
| EPA- SB4 | 536650 | 5210400 | -43.258316 | 147.451543 | Nutrients, water chemistry, phytoplankton | Intermediate | |
| EPA- SB2 | 545112 | 5220157 | -43.170002 | 147.55500 | Nutrients, water chemistry, phytoplankton | Far-Field | Co-located with Site 2 (IMAS) |
| EPA- SB7 | 556300 | 5215510 | -43.211094 | 147.693103 | Nutrients, water chemistry, phytoplankton | Far-Field | |
| EPA- SB5 | 554239 | 5226021 | -43.116601 | 147.666702 | Nutrients, water chemistry, phytoplankton | Intermediate | Co-located with Site 5 (IMAS) and BEMP-TPNB |
| EPA- SB9 | 547371 | 5236067 | -43.026603 | 147.58143 | Nutrients, water chemistry, phytoplankton | Far-Field | Co-located with Site 9 (IMAS) |
| EPA- SB8 | 542350 | 5231150 | -43.071175 | 147.520179 | Nutrients, water chemistry, phytoplankton | Intermediate | |
| EPA- SB10 | 527684 | 5232077 | -43.0635001 | 147.34000 | Nutrients, water chemistry, phytoplankton | Intermediate | Co-located with BEMP-M1 |
| EPA- SB11 | 530690 | 5236509.9 | -43.02348 | 147.376669 | Nutrients, water chemistry, phytoplankton | Far-Field | Co-located with DEP-B3 |



Figure 1. Site map – EPA monitoring locations

TABLE 2: OVERVIEW OF PARAMETERS

| Site ID | Spatial Scale | Lab Sampling Parameters | Lab sampling depths | Field Measurements |
|------------|---------------|---|---|---|
| EPA-SB1* | Far-Field | Nutrients Total <ul style="list-style-type: none"> Nitrogen Nitrogen Kjeldahl Phosphorus | Surface; 10 m depth; 1 m above seabed | DO (mg/L) Temperature (°C) Salinity (ppt) DO Saturation (%) Turbidity (NTU) To be taken at surface then every 5 metres to bottom |
| | | Nutrients Dissolved <ul style="list-style-type: none"> Ammonia (TAN) Nitrate Nitrite Nitrate + Nitrite Phosphorus (DRP) Silicate (SMR) Non-purgeable Organic Carbon (NPOC) | | |
| | | Chlorophyll a, Algal identification Algal count Algal Relative abundance | 12 m integrated sample | |
| EPA- SB3 | Intermediate | As above | As above | As above |
| EPA- SB6 | Intermediate | As above | As above | As above |
| EPA- SB4 | Intermediate | As above | As above | As above |
| EPA- SB2 | Far-Field | As above | As above | As above |
| EPA- SB7 | Far-Field | As above | As above | As above |
| EPA- SB5 | Intermediate | As above | As above | As above |
| EPA- SB9 | Far-Field | As above | As above | As above |
| EPA- SB8 | Intermediate | As above | As above | As above |
| EPA- SB10* | Intermediate | As above | As above | As above |
| EPA- SB11* | Far-Field | As above | As above | As above |

* Sites monitored on a monthly basis, EPA-SBI also monitored on a seasonal basis