

EPA Water Quality Monitoring Plan for Norfolk Bay, 2018-19

Introduction

The EPA has undertaken to conduct water quality monitoring within Norfolk Bay (and Frederick Henry Bay) to assist in 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 within Norfolk Bay and Frederick Henry Bay
- To provide water quality information to assist nutrient dispersion modelling and biogeochemical model development and validation
- To provide independent validation of water quality information collected by (or on behalf of) Huon Aquaculture.

Description

Norfolk Bay forms the northern extent of the Tasman Peninsula and Norfolk Bay Marine Farm Development Plan Area (MFDPA).

The monitoring program is to commence during August 2018, prior to the Huon Aquaculture Permit Area being stocked with fish.

Under the terms of Environmental Licence 9957 held by Huon Aquaculture, water quality monitoring is to be conducted at six (6) locations within Norfolk Bay and Frederick Henry Bay. Of these five (5) were selected for monitoring under this program for validation purposes (See Table 1).

Water quality data is to be collected on a monthly basis.

Program commencement: August 2018

Scheduled completion: January 2019

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 1: List and overview of monitoring locations

Site ID	Location	Easting	Northing	Latitude	Longitude	WQ monitoring required	Distance from lease boundary	Comments
EPA-NB1	Eaglehawk Bay	567205	5237334	-43.0137	147.8247	Nutrients, phytoplankton, field measurements	~13.3 km Far-Field	
EPA-NB2	MFI 17 (North)	557282	5246687	-42.930293	147.701980	Nutrients, phytoplankton, field measurements	~ 600 m Intermediate	Baseline site 2.2. Co-located site
EPA-NB3	MFI 17 (East)	557528	5245689	-42.939261	147.705097	Nutrients, phytoplankton, field measurements	~ 600 m Intermediate	Baseline site 3.2. Co-located site
EPA-NB4	North of Green Head	555400	5246900	-42.928514	147.678897	Nutrients, phytoplankton, field measurements	~1.3 km Intermediate	Co-located site
EPA-NB5*	Norfolk Bay	560815	5246660	-42.930262	147.745276	Nutrients, phytoplankton, field measurements	~3.8 km Intermediate	Co-located site
EPA-NB6*	Frederick Henry Bay	549775	5246099	-42.936115	147.610041	Nutrients, phytoplankton, field measurements	~ 6.8 Km Far-Field	Co-located site
EPA-NB7	North of White house point	559250	5245350	-42.942174	147.727463	Nutrients, phytoplankton, field measurements	~2.4 km Intermediate	
EPA-NB8	South West of Smooth Island	562775	5243884	-42.9396	147.7656	Nutrients, phytoplankton, field measurements	~ 6.1 Km Far-Field	
EPA-NB10	Denison Canal	565210	5250045	-42.899415	147.798734	Nutrients, phytoplankton, field measurements	~ 9.1 Km Far-Field	

* Site proposed under the Broadscale Environmental Monitoring Program (BEMP) for Storm Bay



Figure 1. Site map – EPA monitoring locations

Base layer © Google Earth 2018

Table 2: Overview of water quality parameters

Site ID	Distance category	Lab Sampling Parameters	Lab sampling depths	Field Measurements
EPA-NB1	Far-field	Nutrients Total Nitrogen Nitrogen Kjeldahl Phosphorus	Surface; 10 m depth; 1 m above seabed	DO (mg/L) Temperature (°C) Salinity (ppt) DO Saturation (%) Turbidity (NTU)
		Nutrients Dissolved Ammonia (TAN) Nitrate Nitrite Nitrate + Nitrite Phosphorus (DRP) Silicate (SMR) Non-purgeable Organic Carbon (NPOC)		To be taken at surface then every 5 metres to bottom.
EPA-NB2	Intermediate	As above	As above	Parameters as above To be taken at surface and every metre to bottom
EPA-NB3	Intermediate	As above	As above	As above
EPA-NB4	Intermediate	As above	As above	Parameters as above To be taken at surface then every 5m to bottom
EPA-NB6	Far-field	As above	As above	As above
EPA-NB7	Intermediate	As above	As above	As above
EPA-NB8	Far-Field	As above	As above	As above
EPA-NB5	Intermediate	As above	Surface; 1 m above seabed. 9m integrated sample	As above
EPA-NB10	Far-Field	Far-Field	Surface	Parameters as above To be taken at surface and bottom