



Department of Biodiversity,
Conservation and Attractions



Biodiversity and
Conservation Science

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Swan Canning Estuary Water Quality Monitoring Project

Weekly Water Quality Report

Lower Swan Canning Estuary to Upper Swan Estuary

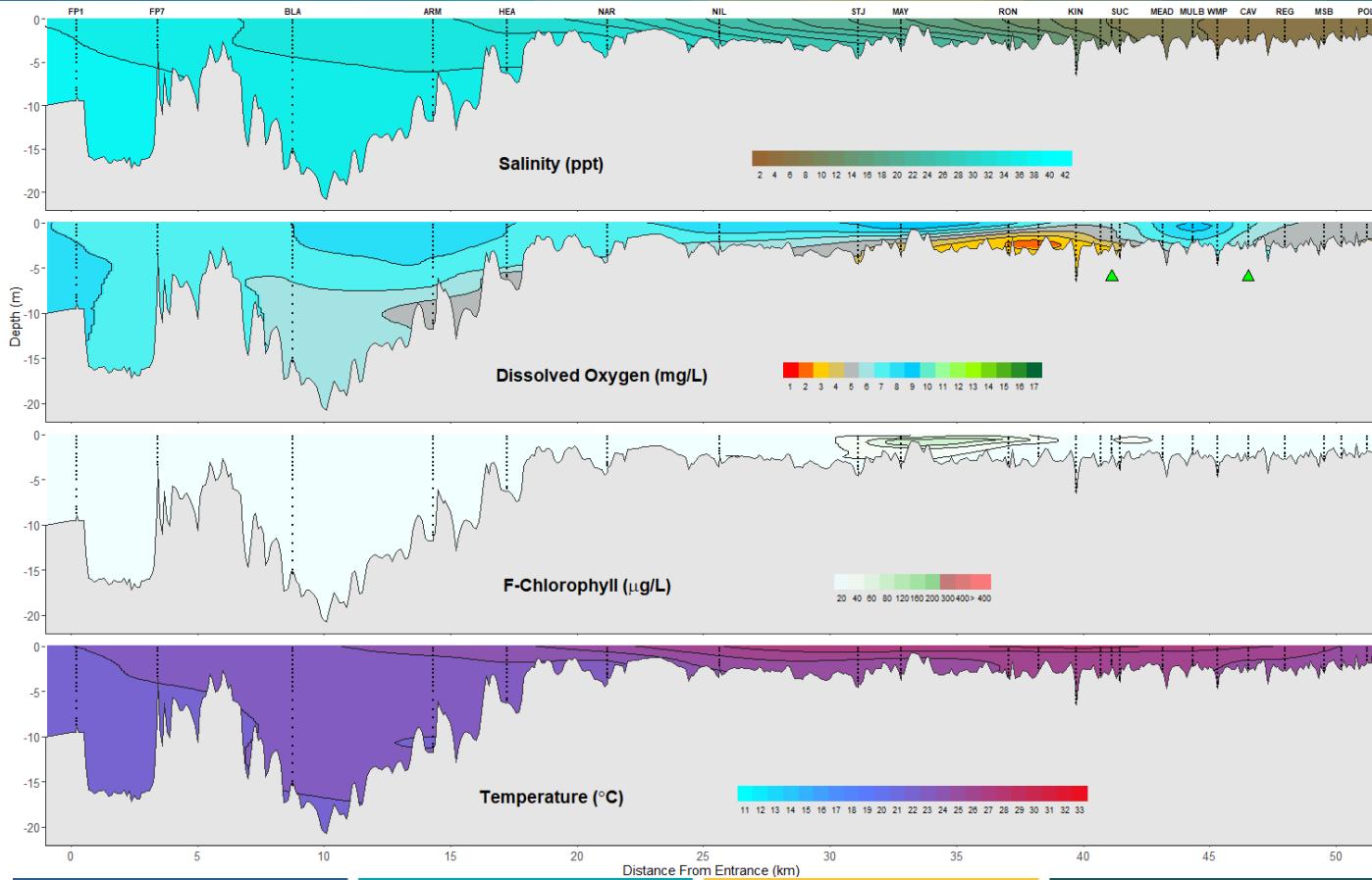
20 December 2021

Prepared by

Rivers and Estuaries Science
Biodiversity and Conservation Science
Department of Biodiversity, Conservation and Attractions



Swan Canning Estuary- Water Quality Profiles – 20 December 2021





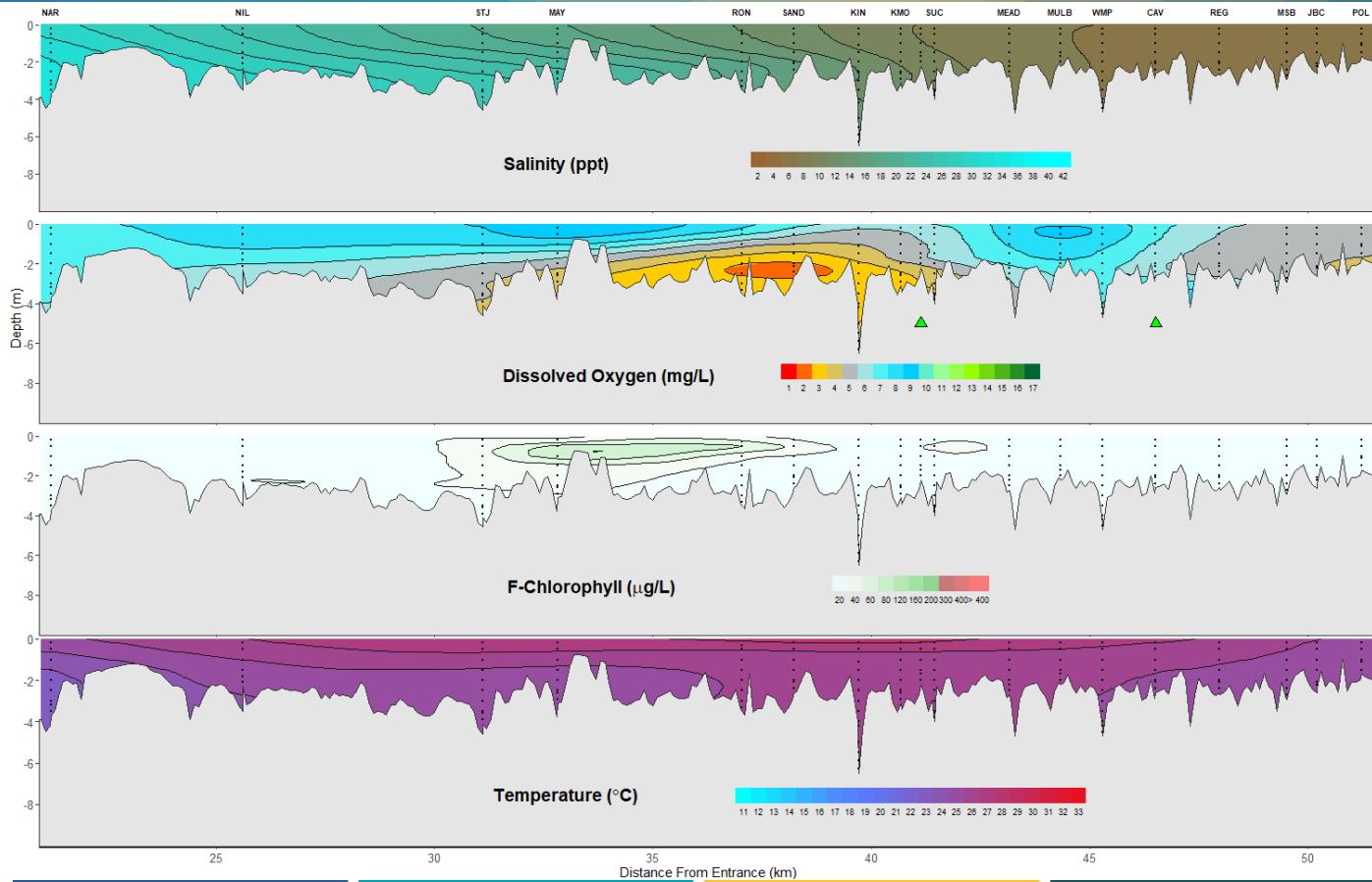
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Middle and Upper Swan Estuary- Water Quality Profiles – 20 December 2021





Date: 20 December 2021

Weather & tide conditions: Conditions were clear with a south westerly breeze of up to 12 knots. The predicted tides at Barrack St were 0.53 m at 9:17 am (low tide) and 1.13 m at 11:18 pm. Perth recorded 2.4 mm of rainfall during the week prior to sampling (Bureau of Meteorology).

Oxygenation: The Guildford and Caversham oxygenation plants were both triggered to provide oxygen during the 24 hours prior to sampling.

Lower Swan Canning Estuary (BLA to NAR): The Lower Swan Canning Estuary was saline, waters were oxygenated or well oxygenated and chlorophyll fluorescence was low throughout this zone. Water temperature ranged from 21.3 to 24.5 °C.

Middle Swan Estuary (NIL to RON): The Middle Swan Estuary was brackish over saline at NIL and brackish from STJ to RON. Surface waters were well oxygenated and bottom waters were low in oxygen between STJ and RON. Chlorophyll fluorescence was low from NIL to STJ and moderate between MAY and RON indicating higher microalgal activity in that area. Water temperature ranged from 24.3 to 26.6 °C.

Upper Swan Estuary (SAND to POL): The Upper Swan Estuary was brackish. Surface waters were oxygenated or well oxygenated and bottom waters were low in oxygen from KIN to KMO and hypoxic at SAND and SUC. Chlorophyll fluorescence was low throughout this zone. Water temperature ranged from 23.9 to 27.3 °C.

NB: Profile plots are visual interpolations of measured parameters only. Detailed data are available at wir.water.wa.gov.au.

Oxygenation Plant Operational Status:

- ▲ Operating for part or all of the 24 hours prior to sampling
- ▲ Operable but not triggered to operate in the 24 hours prior to sampling
- ▲ Inoperable for part or all of the 24 hours prior to sampling

Definitions:

Salinity – fresh <5, brackish 5-25, saline 25-35, hypersaline >35

Dissolved oxygen – well oxygenated >6 mg L⁻¹, oxygenated >4-6 mg L⁻¹, low oxygen >2-4 mg L⁻¹, hypoxic 0.5-2 mg L⁻¹, anoxic <0.5 mg L⁻¹

Chlorophyll fluorescence (summer): low < 50 µg L⁻¹, moderate 50-150 µg L⁻¹, high 150-400 µg L⁻¹, extreme > 400 µg L⁻¹

Recommended reference: Department of Biodiversity, Conservation and Attractions 2021. *Swan Canning Estuary water quality profile report, Lower Swan Canning Estuary to Upper Swan Estuary 20 December 2021. Rivers and Estuaries Science* (<https://www.dpaw.wa.gov.au/management/swan-canning-riverpark>)