Swan Canning Estuary Water Quality Monitoring Project

Weekly Water Quality Report

Lower Swan Canning Estuary to Upper Swan Estuary

1st July 2024

Prepared by

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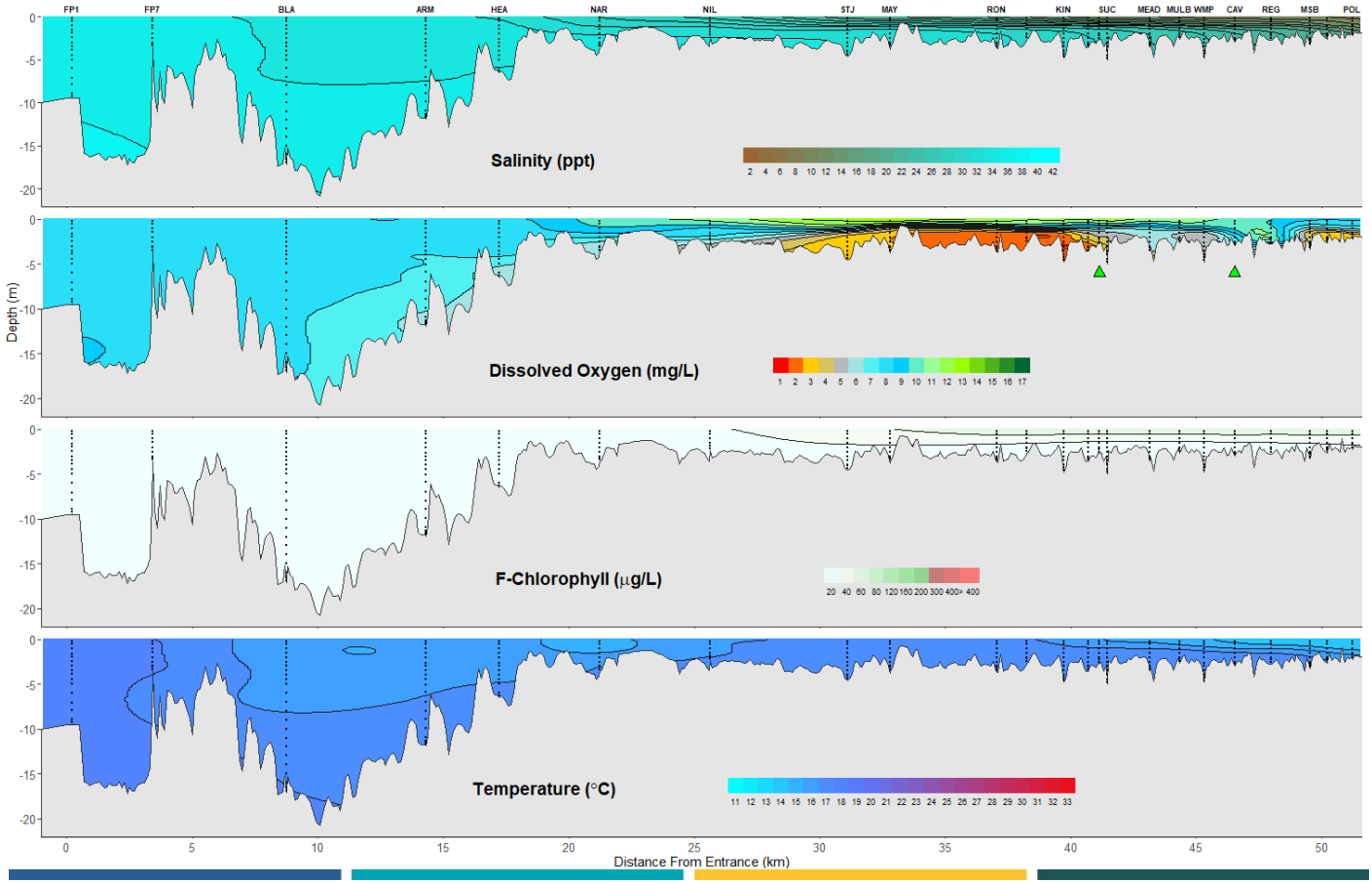
GOVERNMENT OF WESTERN AUSTRALIA
Department of Biodiversity, Conservation and Attractions
Biodiversity and Conservation Science

Swan Canning Estuary - Water Quality Profiles – 1st July 2024



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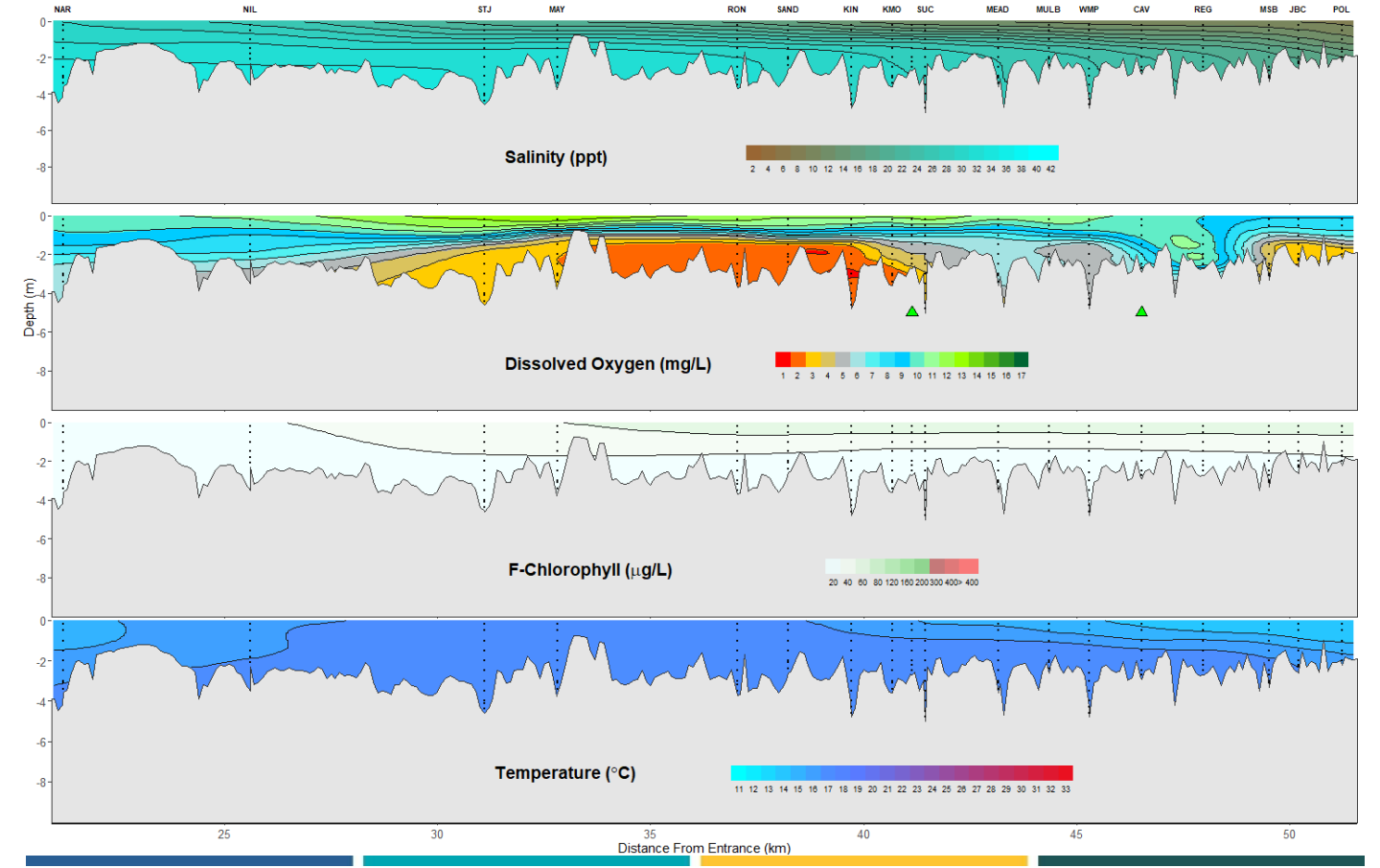

Date: 1st July 2024

Weather & tide conditions: Conditions were clear with a predominately north easterly breeze of up to 13.6 knots. The predicted tides at Barrack St were 1.2 m at 7:38 am (high tide), and 0.77 m at 7:00 pm (low tide). Perth recorded 24.6 mm of rainfall in the week prior to sampling (Bureau of Meteorology).

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

Lower Swan Canning Estuary (FP1 to NAR): The Lower Swan Canning Estuary was hypersaline at FP1 and FP7, and saline from BLA to NAR. Waters were well oxygenated or oxygenated and chlorophyll fluorescence was low. Water temperatures ranged from 14.6 to 17.5 °C at the time of sampling.

Middle Swan Estuary (NIL to RON): Waters in the Middle Swan Estuary were saline at NIL and brackish over saline from STJ to RON. NIL was well oxygenated throughout, as were all surface waters. Mid-column and bottom waters at STJ and MAY were low in oxygen, and those of RON were hypoxic. Chlorophyll fluorescence was moderate in sub-surface waters of STJ and RON, and low elsewhere. Water temperatures ranged from 15.8 to 16.6 °C at the time of sampling.

Upper Swan Estuary (SAND to POL): The Upper Swan Estuary was brackish over saline from SAND – MEAD and brackish from MULB – POL. MEAD – REG were oxygenated or well oxygenated, as were all surface waters. Mid-column and bottom waters were hypoxic from SAND – KMO, and low in oxygen at VIT, SUC and MSB - POL. Moderate chlorophyll fluorescence was detected in the surface waters of most sites, with the exception of KIN, KMO, MEAD, REG and POL. Water temperatures ranged from 13.2 to 16.7 °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 (low flow): 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, 2024. *Swan Canning Estuary water quality profile report, Lower Swan Canning Estuary to Upper Swan Estuary July 1st 2024.* Rivers and Estuaries Science (https://www.dpaw.wa.gov.au/management/swan-canning-riverpark)