

Outer Harbor seagrass audit prior to dredging by Flinders Ports

Issued April 2019

EPA1112/19: This information sheet provides details on the results of underwater monitoring undertaken prior to Flinders Ports dredging of Outer Harbor, which is due to take place from June–September 2019.

Introduction

Seagrass surveys have been conducted by marine scientists from the Environment Protection Authority (EPA) at four locations, to assess seagrass extent and condition. The surveys comprised video transects to assess the extent of seagrass across a site, and diver-based surveys to assess seagrass condition. Seagrass samples were collected for detailed biomass and biomarker analysis. The work undertaken to date comprises a baseline (before) in which future monitoring of the same sites can determine if any change has occurred that could be attributed to the dredging for the Outer Harbor channel widening. This work is an independent assessment of seagrass extent and condition around the Outer Harbor shipping channel and does not replace work to be undertaken by Flinders Ports according to their [EPA licence](#).

Methods

In February 2019, seagrass meadows were surveyed at two control and two potentially impact locations, based on the zone of influence (Zoi) generated by the detailed hydrodynamic model produced by Flinders Ports in the Outer Harbor channel widening project licence application (selected scenario). Sites were selected to be in the zone of influence (Impact) or outside of the zone (Control). The zone of influence has been defined as an area exposed to elevated turbidity but below the level which is likely to cause an effect on seagrass. This was considered appropriate as there is expected to be no loss of seagrass within this zone. As such, the intent of this monitoring program is to confirm that there is no statistically significant loss of seagrass within the impact sites as compared to the control sites located outside of any influence of the dredging.

At each site, five replicate cores were taken in seagrass meadows using a stainless steel corer (0.045 m²) using SCUBA. In the laboratory, cores were separated into the above and below ground components, and epibionts (ie plants and animals living on the leaves) were removed from seagrass leaves using a plastic scraper. Leaf morphometrics (ie data on shoots, leaf length and width) were measured and samples dried at 80°C until dry.

Results

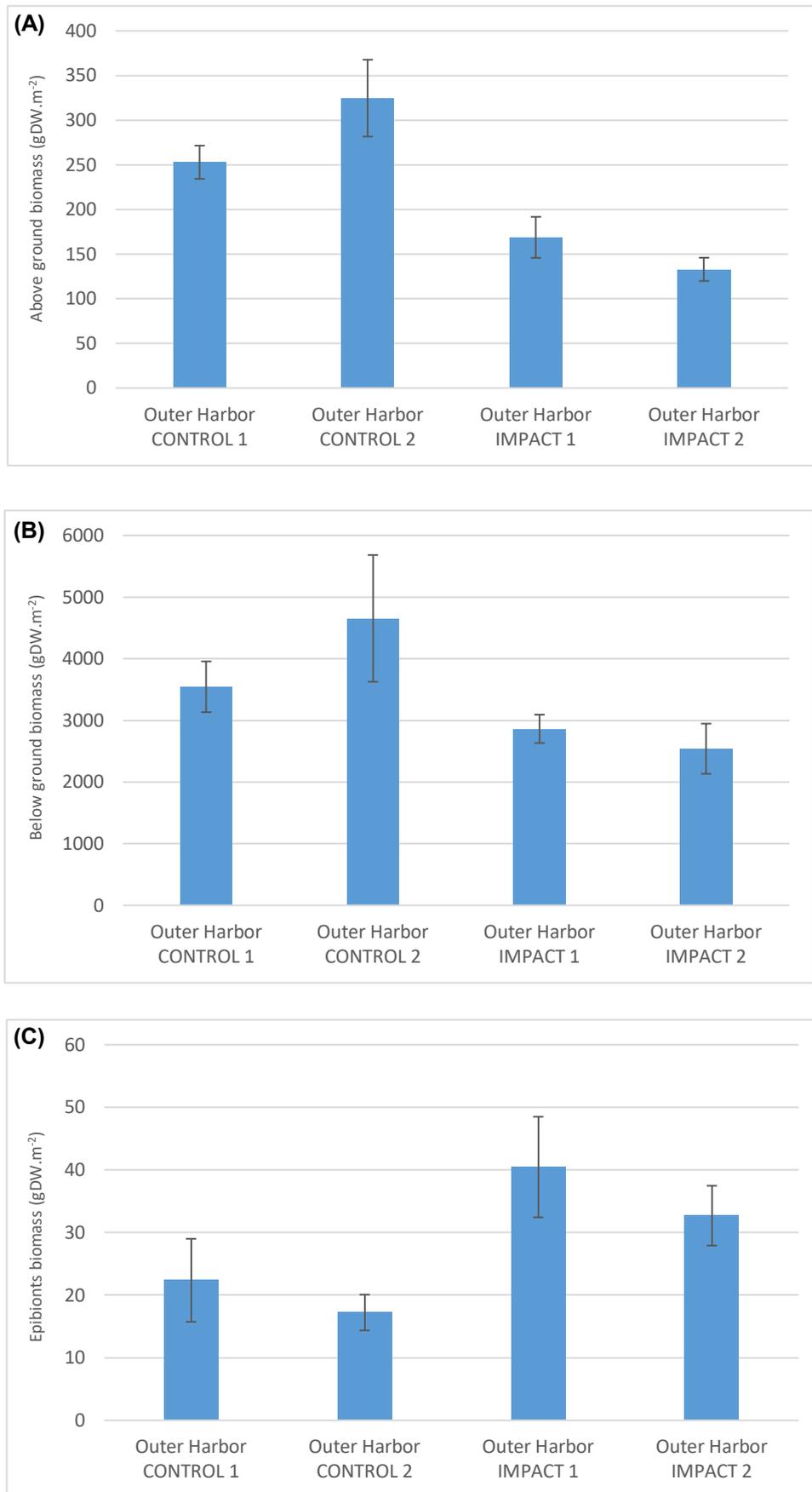


Figure 1 (A) Above ground, (B) Below ground and (C) leaf epibiont biomass (grams dry weight per m²) from sites adjacent Outer Harbor, March 2019

Broader scale seagrass assessment

In addition to this detailed site based assessment, the EPA have also resampled the long seagrass transects undertaken by the Adelaide and Mount Lofty NRM Board in 2014 (Tanner *et al* 2014). This will demonstrate any larger scale changes across the Adelaide metropolitan coast. These transects were undertaken using towed video and will be repeated after the dredging has been completed.

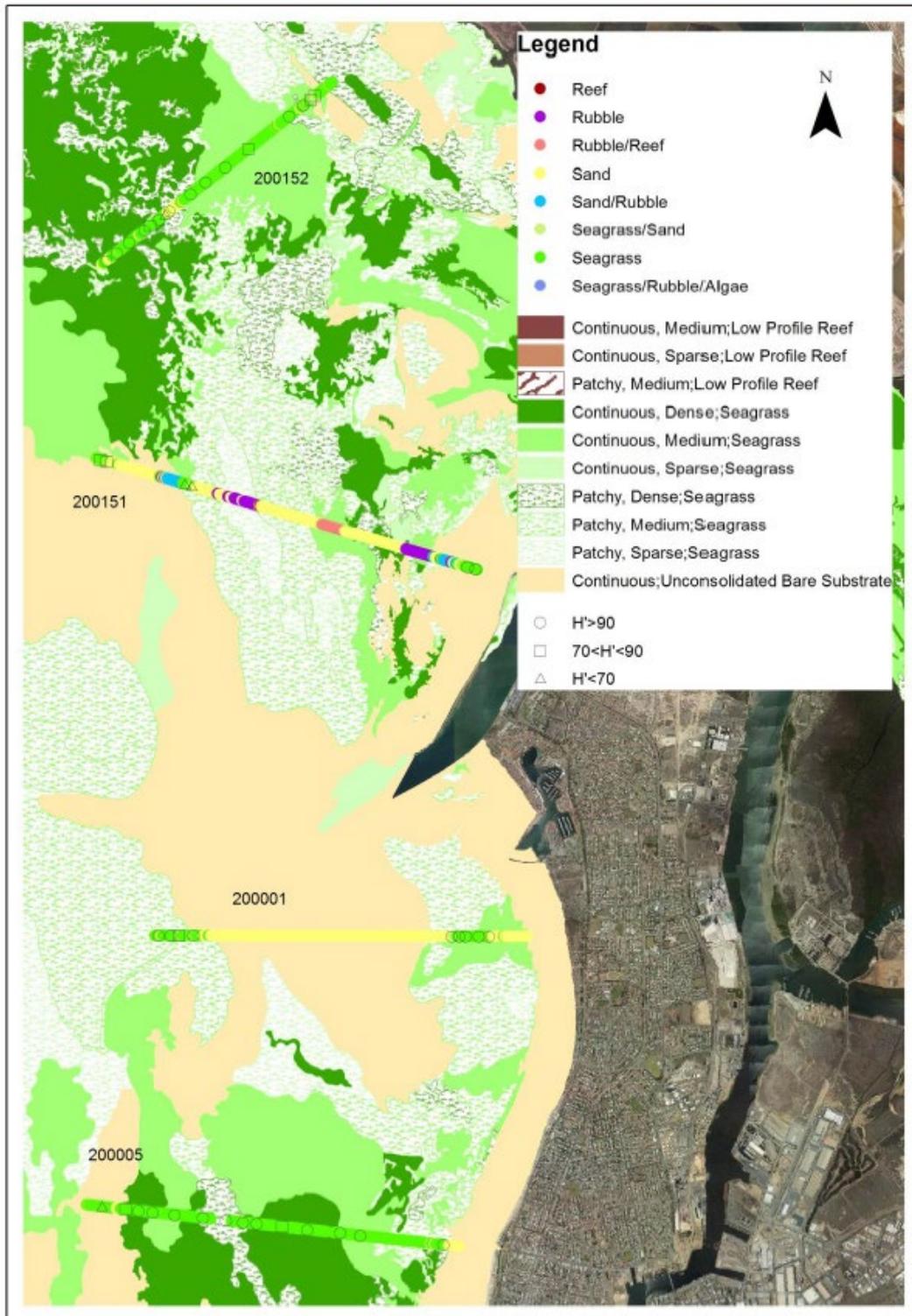


Figure 2 Habitat classifications offshore from Port Adelaide from the 2014 SARDI video surveys, and from broader scale DEW habitat mapping undertaken in 2000–08 (from Tanner *et al* 2014).

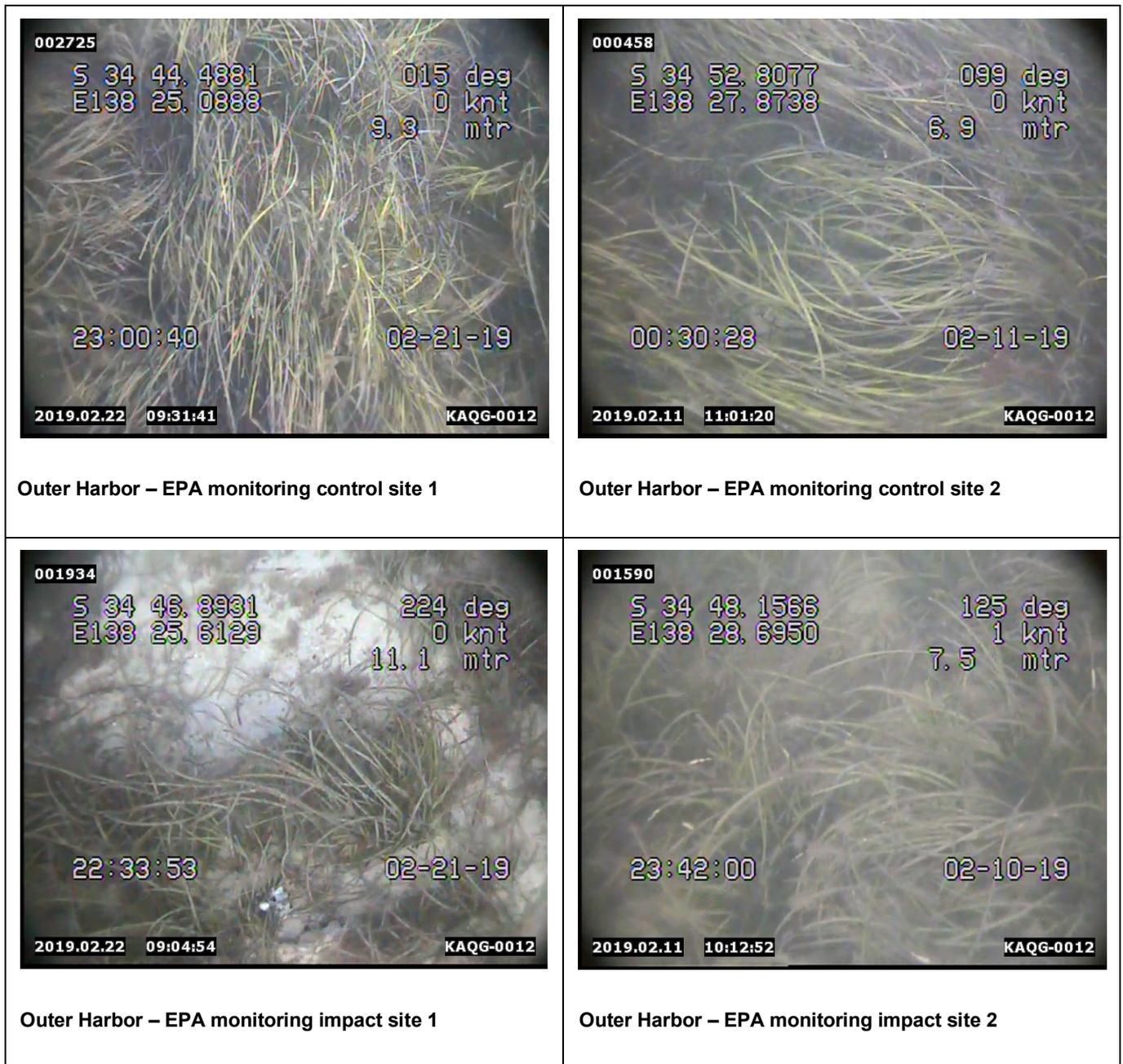


Figure 3 Example video footage taken by EPA marine scientists at the control and impact sites, February 2019

Future surveys

Further diver and broadscale video surveys will be conducted upon completion of dredging operations, with dredging anticipated to commence from June 2019. Future surveys will be timed to align with similar seasons to preclude natural seasonal fluctuations in seagrass cover and condition. It is expected that information on seagrass extent and condition will be available in late 2020.

References

Tanner JE, Theil M and D Fotheringham 2014, *Seagrass condition monitoring: Encounter Bay and Port Adelaide*, Final report prepared for the Adelaide and Mount Lofty Ranges Natural Resource Management Board, South Australian Research and Development Institute (Aquatic Sciences), Adelaide, SARDI Publication No. F2012/0000139-2. SARDI Research Report Series No 799, 23 pp.

Further information

Legislation

[Online legislation](#) is freely available. Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet
Adelaide Service SA Centre
108 North Terrace
Adelaide SA 5000

Telephone: 13 23 24
Facsimile: (08) 8204 1909
Website: <https://service.sa.gov.au/12-legislation>
Email: ServiceSAcustomerservice@sa.gov.au

General information

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