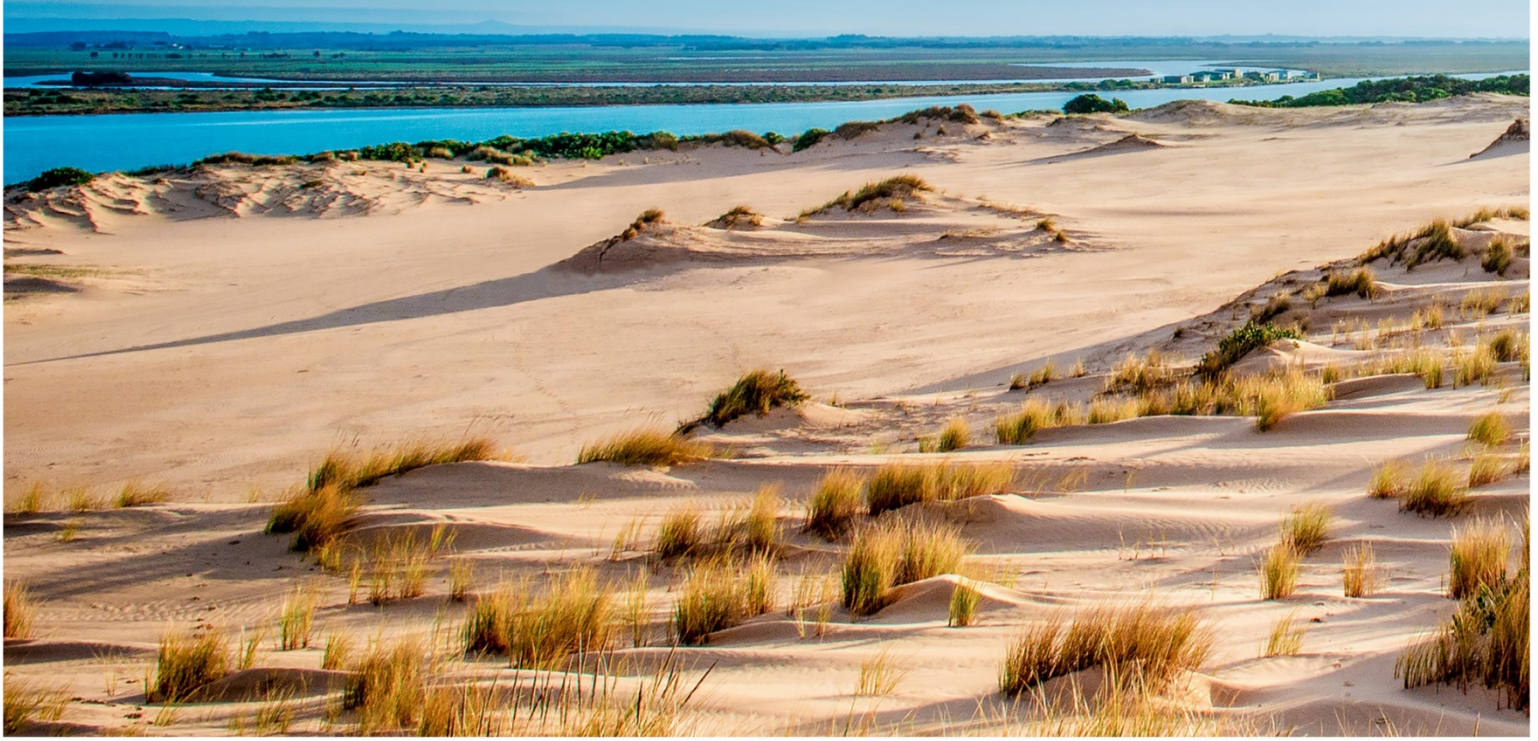
May 2021

PROJECT COORONG

Healthy Coorong, Healthy Basin



Welcome to the May 2021 update for Project Coorong's Healthy Coorong, Healthy Basin (HCHB) program. In this edition we are reporting on recent field work and the installation of new continuous monitoring stations.

If you would like more information on the HCHB Program or have questions on anything contained in this update please contact the program team at projectcoorong@sa.gov.au

The Coorong, connected waters and surrounding lands have sustained many unique First Nations cultures and economies since time immemorial. The Healthy Coorong, Healthy Basin program acknowledges the range of First Nations rights, interests and obligations for the Coorong and connected waterways and the cultural connections that exist between Ngarrindjeri and First Nations of the South East peoples across the region and seeks to support their equitable engagement.

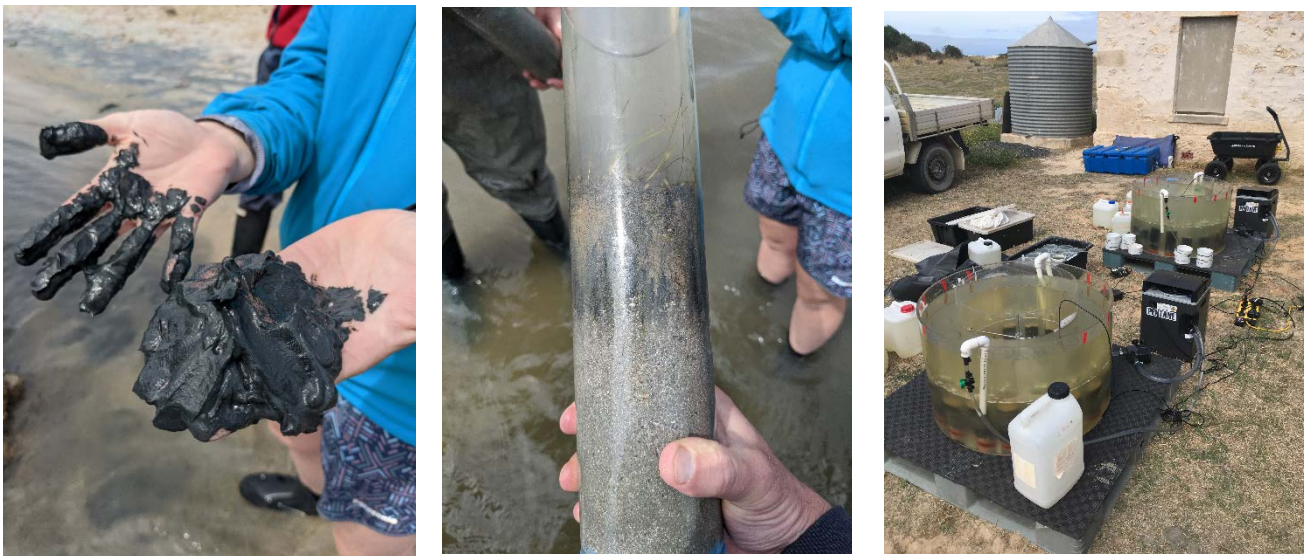
Aboriginal and Torres Strait Islander readers are advised that the following document may contain images and names of people who have died.

World Wetlands Day Science Forum- videos now available on line

Held on World Wetlands Day, 2 February 2021, the Project Coorong Science Forum featured presentations from leading researchers under the theme 'Science Informing Action'. Researchers shared their previous understanding of the state of the Coorong, how the Coorong system is changing, new research findings, and how research is informing management of the Coorong to shift it to a healthier state.

Research highlights presented at the Science Forum, abstracts and videos are now available on the Project Coorong website's new publications page.

Autumn nutrient investigations to inform Coorong modelling



Left to right, anoxic black ooze, ruppia sediment core, sediment core incubators.

In March 2021 a HCHB Trials and Investigations (T&I) Nutrient Dynamics field trip led by Associate Professor Luke Mosley of the University of Adelaide, brought together 14 researchers from the Goyder Institute for Water Research partner universities and interstate scientists.

Research activities included sediment and water quality sampling, groundwater nutrient flux measurements, and innovative experimental methods to investigate nutrient processes.

One interesting piece of equipment the team was using were sediment core incubators that were set up at Cantara Homestead to study detailed nutrient processes and fluxes. To do this, sediment cores were collected from the Coorong lagoon and then "incubated" under controlled conditions. State-of-the-art instruments were set-up to quantify nutrients soon after sample collection.

Sediment resuspension (where previously deposited sediments are remobilised due to hydrodynamic forces such as waves or currents) was also studied at a site in the South Lagoon to see if a large wind event resulted in nutrient release. The researchers observed the anoxic black ooze (unhealthy) sediment present in many parts of the South Lagoon.

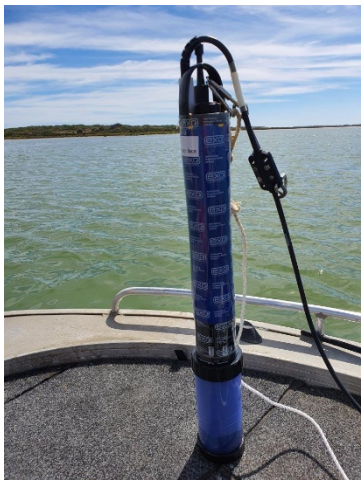
All of the data collected in the field, combined with continuous data from the State Water Monitoring Network, are further supporting interpretation of the researchers' findings.

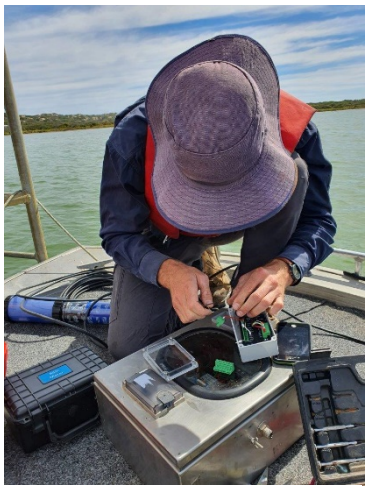
Hydrologists from the Department for Environment and Water (DEW) Surface Water team and an ecologist from the DEW River Murray Environmental Science team joined the scientists on this field trip to observe the science and monitoring happening in the HCHB T&I project. The Surface Water team will apply findings from the autumn field work and other T&I research to improve the Coorong models which will be used to investigate options for improving the health of the Coorong with particular emphasis on the South lagoon.

The next two months is an intensive modelling period for the Surface Water team. They will be considering infrastructure configurations in hydrodynamic modelling, and also incorporating water quality and ecological habitat components into models to help inform the feasibility assessments for the HCHB Coorong Infrastructure Investigations.

The collaborative and co-ordinated research efforts were clear to see and it was highly valuable for the DEW Surface Water modelling team to understand how these measurements are being undertaken to help improve their water quality models and other Coorong models.

Coorong water quality monitoring





Continuous monitoring stations have now been installed in the South Lagoon.

During March, the Coorong Water Quality Monitoring program installed four new instruments to continuously measure water quality across the Coorong. These new stations will deliver real-time information on key parameters relevant to ecosystem health and nutrient cycling, such as the amount of dissolved organic matter and oxygen levels. This information is now publically available from the website www.waterconnect.sa.gov.au (see below for specific locations) and will be used to support the ongoing improvement of the Coorong Dynamics Model (CDM).

The CDM will be used by a new online tool, called the Coorong Automated Forecasting System (CAFS), to increase the certainty in forecasted responses to management scenarios and help water managers to get the best results with the water available.

Installation occurred over two days at four key Coorong locations; Snipe Point, Parnka Point, Long Point and Pelican Point.

Real-time data from each of these sensors can be accessed through the following sites:

- Snipe Point – https://www.waterconnect.sa.gov.au/Systems/SiteInfo/Pages/Default.aspx?site=A4261165&period=HRLY#Real-Time%20Data,Real-Time%20Data

- Parnka Point – https://www.waterconnect.sa.gov.au/Systems/SiteInfo/Pages/Default.aspx?site=A4260633&period=HRLY#Real-Time%20Data,Real-Time%20Data
- Long Point – https://www.waterconnect.sa.gov.au/Systems/SiteInfo/Pages/Default.aspx?site=A4261135&period=HRLY#Real-Time%20Data,Real-Time%20Data
- Pelican Point – https://www.waterconnect.sa.gov.au/Systems/SiteInfo/Pages/Default.aspx?site=A4261134&period=HRLY#Real-Time%20Data,Real-Time%20Data

Project Coorong's new publications on-line resource

Our new publications page on the Project Coorong website is now live. This page contains publications, reports and other resources for Project Coorong as they become finalised.

Please check back often as we work to bring you the latest Project Coorong publications and reports.

Coorong Partnership – Meeting 9

The ninth Coorong Partnership meeting was held on 25 March 2021 at Goolwa, hosted by Alexandrina Council.

Representatives from Alexandrina Council provided the Partnership with an update on the Sugars Beach Icon Project, the concept for which proposes a range of possible improvements (such as boardwalks, viewing platforms, shelter facilities, toilets, and a visitor information hub) on Hindmarsh Island immediately opposite the Murray Mouth to enhance the visitor experience of this iconic location. Site improvements would enable visitors to seek the rich culture of the Ngarrindjeri, discover the scope and story of the Murray-Darling Basin, and connect with the people, food, landscape and wildlife of the Coorong. The Partnership noted that the concept has developed considerably since it was first introduced to the group in May 2020, and undertook to progress conversations regarding possible funding pathways with the Minister for Environment and Water and Alexandrina Council.

The Limestone Coast Landscape Board provided an update on the Our Coorong | Our Coast Project, which is enhancing the Coorong and managing Ramsar values along the Limestone Coast. The Our Coorong | Our Coast Revegetation Plan was presented as a working document to provide guidance and direction for 54 hectares of revegetation activities at Mark Point (Ngaenu), Cantara South and Parnka Point. An invitation was extended to Partnership members to meet with Limestone Coast Landscape Board project staff on site to discuss the specifics of the plan. The Partnership noted that there has been effort to ensure that the new plantings take into consideration continued access by visitors to the Coorong. Partnership members, along with the broader community, were encouraged to participate in planting days.

Healthy Coorong, Healthy Basin (HCHB) staff provided an update on the program advising that, throughout 2021, DEW will collaborate with the Limestone Coast Landscape Board to further investigate the restoration potential of Lake Hawdon North to support key species of Coorong waterbirds. The Partnership noted that the Coorong BioBlitz has been rescheduled to 22 May 2021 at Parnka Point and welcomed the advice that the *Desired state of the southern Coorong discussion paper* released in 2020 was being reviewed and expanded.

The Partnership received a presentation on the Coorong Infrastructure Investigations Project, which is investigating the feasibility of five shortlisted infrastructure options to improve the health of the Coorong South Lagoon. The Partnership were further briefed on preliminary hydrodynamic modelling and welcomed advice that field surveys were underway to improve understanding of Coorong bathymetry. The Partnership noted the complexity of the investigations, with multiple modelling streams iteratively informing engineering designs and ecological assessments throughout the year. DEW reiterated its commitment to provide regular updates on progress and findings, involve the Coorong Partnership and targeted stakeholders in major review / decision points, consult the broader community in the final evaluation of options, and remain flexible in its approach. The Partnership looks forward to seeing further modelling results and ecological assessments over the coming months.

The Chair, the Hon Dean Brown, updated the Partnership on his recent attendance at a Murray Darling Basin Authority workshop on managing deliverability risks in the River Murray System, which had a particular focus on the Barmah Choke.

The Partnership will next convene on 6 May 2021, location to be advised.

On-Ground Works - Lake Hawdon North Feasibility Investigations

Black-tailed native hens at Lake Hawdon North Photo attribution: Ben Taylor, Nature Glenelg Trust.

HCHB's On-Ground Works Project aims to improve the availability and quality of habitat for migratory and non-migratory shorebirds at priority wetlands in the Lower Lakes and South East of South Australia to provide regional refugia while long-term solutions for the Coorong are developed and implemented.

In 2019, HCHB commissioned the Goyder Institute for Water Research to undertake a preliminary assessment of the potential for wetlands in the South East and Lower Lakes regions of South Australia to support key species of Coorong waterbirds. Out of this assessment, Lake Hawdon North (approximately 15 km east of Robe) was recommended as the highest priority for more detailed feasibility assessment.

In early 2020, HCHB commissioned Nature Glenelg Trust (NGT) to undertake a preliminary restoration feasibility assessment of Lake Hawdon North. The assessment confirmed that constructing a regulator on Drain L could maintain the ecological health of the Robe Lakes and extend the period of Lake Hawdon inundation, providing shorebird habitat for the entire period that migrating shorebirds are present in the region. The presence of water later in the summer would be particularly valuable, as

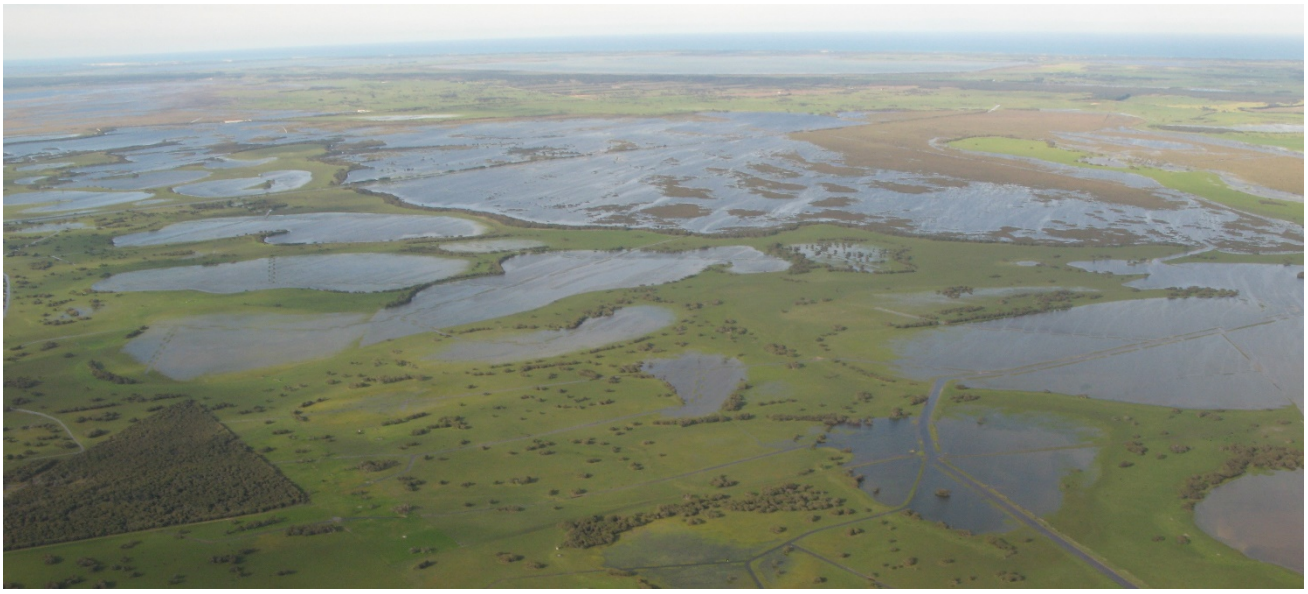
that is when migratory shorebirds are looking to gain fat reserves for their return flight to the northern hemisphere yet total regional wetland habitat is declining as seasonal wetlands dry.

Throughout 2021, HCHB will collaborate with the Limestone Coast Landscape Board to further these feasibility investigations, including consultation with adjacent landholders, licensees and leaseholders, on potential opportunities and impacts of restoration works at Lake Hawdon North.

The investigations will complement the Limestone Coast Landscape Board's Drainage and Wetlands Strategy and the Our Coorong | Our Coast Project, which is also improving the ecological character of the Coorong and enhancing habitat for threatened species along the Limestone Coast.

Introductory site visits have been held and initial stakeholder meetings are organised for the near future to provide an overview of the project, discuss how stakeholders can be involved going forward, and seek preliminary feedback to help shape the scope of further investigations.

The feasibility investigations work being undertaken for Lake Hawdon North will inform a potential proposal to be considered by the Australian Government; any proposal submitted does not necessarily mean that works will take place.



Aerial view of Lake Hawdon North and surrounding wetlands 23/9/2016. Photo Attribution: Ben Taylor, Nature Glenelg Trust.

If you have any questions on this update or anything else related to Project Coorong, please contact projectcoorong@sa.gov.au

The South Australian Government's Healthy Coorong, Healthy Basin Program is jointly funded by the Australian and South Australian governments.