

# PROJECT COORONG

# Healthy Coorong, Healthy Basin



Welcome to the first update on the Healthy Coorong, Healthy Basin program. Here we aim to highlight the key achievements from the first year of this exciting environmental program and talk about how we plan to build on these achievements over the coming years.

This update refers to activities outlined in the *Healthy Coorong, Healthy Basin Action Plan* which was launched by the Minister for Environment and Water, David Speirs MP, in April 2019. The Action Plan also explains why this program is needed and how it fits within the broader Project Coorong initiative.

*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.*



## Coorong Action Underway

Throughout 2019, community, First Nations and scientific partnerships have been developed to support the Healthy Coorong Healthy Basin program.

### Community Partnerships – Action Plan Consultation

Throughout 2019 the *Healthy Coorong, Healthy Basin* program was introduced to the community, stakeholders and interest groups through face-to-face and online meetings.

In October 2019 we invited the community and stakeholders to tell us what they thought of the working vision and priorities proposed within the Action Plan through a series of regional community discussion sessions in Meningie, Goolwa, Robe, Salt Creek and Kingston. The sessions were well attended, with the community offering their thoughts on the Action Plan and hearing about other project activities under Project Coorong.

We also heard from the broader community via the SA government's YourSay online consultation site where responders completed the *Healthy Coorong, Healthy Basin* survey and engaged in online discussions.

In addition, many targeted stakeholder and interest groups also asked to meet with us and host a presentation and feedback session.

These activities have delivered valuable insights and highlighted the community's keen interest in continuing to be consulted and involved in implementation. We now have a large database of community and stakeholders who are interested in further updates and engaging with *Healthy Coorong, Healthy Basin* going forward.

### Coorong Partnership

As part of the broader Project Coorong initiative, the Minister for Environment and Water has established the Coorong Partnership. The Partnership comprises a broad range of community members with relevant interests and expertise and will provide local communities and groups the opportunity to help shape work undertaken across this internationally significant wetland.

More information on the Coorong Partnership membership will be provided in future updates.

### First Nations Partnerships

The Coorong is of enormous cultural significance to its Traditional Owners and First Nations.

We have engaged and entered into partnership agreements with both the Ngarrindjeri Aboriginal Corporation and the First Nations of the South East. These partnerships will facilitate their valuable cultural input into the development and implementation of *Healthy Coorong, Healthy Basin*, including; partnering in natural resource and water management, protecting and promoting First Nations culture, heritage and unique relationship with and responsibilities for their Country; and improving ecological outcomes through the respectful application of cultural knowledge to site decision-making.



Monitoring waterbirds at Tolderol wetland

The Department for Environment and Water has partnered with the Goyder Institute for Water Research to conduct a number of independent scientific trials and investigations that will help to fill key scientific knowledge gaps and inform the development of improved ways to manage the Coorong.

### Improving habitat for waterbirds

The Coorong is a critical wetland for waterbirds and has regularly provided important breeding, feeding and refuge habitats for over 100,000 birds each summer. Some waterbird populations are currently experiencing declines at an international or national level, however there is growing evidence that many species are declining at faster rates in the Coorong in response to poor habitat condition and low food availability.

In early 2019, scientists investigated options to increase the availability and quality of wetlands to provide greater food resources to support waterbird populations.

#### Key findings from the 2019 investigations include:

- Management of the constructed Tolderol wetlands provides the shallow wading habitats and abundant food resources that constitute quality feeding habitat for waterbirds, including migratory shorebirds.
- The identification of wetlands in Lower Lakes and in the Upper South-East that may be able to be managed in coordination with the Coorong, to provide further habitat for waterbirds and improve waterbird populations within the Coorong.

This information will be used to further assess options to improve the availability of suitable wetland habitat for Coorong waterbirds, either through *Healthy Coorong*, *Healthy Basin* or future programs.



Migratory shorebirds feed in large numbers at the constructed Tolderol Wetland (Photo: Colin Rogers)



*Investigating algal blooms in the Coorong*

## Restoring aquatic plants and controlling algal blooms

Aquatic plants are a key component of the Coorong ecosystem, providing habitat for fish, food for waterbirds, and improving water quality. Since the Millennium Drought, the health and extent of aquatic plant communities have decreased in the Coorong, mainly due to inadequate water flows, water levels, poor water and sediment quality, and the resulting impacts of blooms of algae and other microbiota.

Scientists have investigated innovative methods to map the extent of aquatic plants and algal blooms and to control algae and prevent it from interfering with seed production in native aquatic plants.

### Key developments and findings from the 2019 investigations include:

- Development of a new method to detect and map floating algae in the Coorong via satellite imagery, which will be used to monitor changes over time and help us understand the conditions under which algal blooms occur.
- Evidence that filamentous algae is now attaching to aquatic plants throughout much of the Coorong, reducing seed production and germination of new plants.
- Evidence from laboratory experiments that algal growth can be controlled under specific temperature, salinity and nutrient conditions.
- Small-scale trials to remove filamentous algae in the Coorong have been undertaken to assess short-term approaches to reduce the impact of algal blooms.
- Updated models are being developed to improve our ability to predict the impacts of water quality and flow conditions on aquatic plants.

This information will be used to inform options to reduce filamentous algal growth and promote the restoration of native aquatic plants that provide key habitat for fish and waterbirds.

## Restoring a functioning Coorong foodweb

Healthy fish and waterbird populations in the Coorong need to be supported by a healthy foodweb. This includes food items being in sufficient quantities and qualities (i.e. high energy) and being accessible. Important food items include macroinvertebrates, plankton and fish. Scientists sampled these along the Coorong to determine the quantity and quality of potential food items.

### Key findings from the 2019 investigations include:

- Evidence for strong regional variations in the availability of potential food resources to support waterbird and fish populations.
- A confirmed decline in the number of species of macroinvertebrate and fish species from north to south in the Coorong in relation to rising salinity.
- The total abundance of small-bodied fish was well below the long-term average.
- The energy content of potential food items for birds and fish is higher in the Murray Mouth and northern Coorong than in the southern Coorong.
- Findings from the initial phase are informing our approach for the next phase of investigations, which could include the development of models to predict impacts of management decisions on foodwebs.



*Scientist monitoring water quality in the Coorong*



A remotely controlled boat used to measure flow dynamics in the Coorong

## Water quality monitoring

Understanding Coorong water quality and its drivers are fundamental to improving the health of the Coorong.

During 2019, additional Coorong water quality monitoring was undertaken to understand changing conditions in response to inflows, to identify nutrient risks and assess flow dynamics. This has provided valuable information for science partners and site managers to improve understanding of the water quality responses to changes in weather conditions, inflows and management decisions in the Coorong. Detailed analysis of the 2019 monitoring will be available on the Project Coorong website.

Understanding nutrient dynamics within the Coorong is necessary to inform management decisions, such as nutrient flushing. An extensive evaluation of the current hydrodynamic models was undertaken to determine knowledge gaps that limit the models' capability to test multiple flow scenarios (e.g. barrage flows, groundwater and South-East Drainage Network flows). Recommendations from this study will inform

improvements to hydrodynamic models to increase the accuracy of scenario testing for different inflows and operational decisions.

The University of Adelaide was engaged in 2019 to undertake an independent review of the Coorong water quality monitoring program and infrastructure against Coorong water quality monitoring requirements. Recommendations from this review have informed upgrades to the current monitoring infrastructure to increase the measurable range of parameters (e.g. dissolved oxygen, turbidity, and chlorophyll A) that can now be measured remotely in real-time.

### Key recommendations from the 2019 monitoring investigations include:

- Additional water quality monitoring sites, monitoring frequency and parameters.
- Additional phytoplankton and algae sampling to identify impending algal blooms
- Improvements to data accessibility for the community.
- Improvements for increasing the accuracy of hydrodynamic models for scenario testing.

These recommendations for Coorong water quality monitoring will inform and shape monitoring in 2020. This includes the further expansion of the water quality monitoring program and network in the Coorong and efforts to increase the water quality information available to the community.

## Where to from here

### *As Healthy Coorong, Healthy Basin transitions to full program implementation:*

- We will communicate the scope of program funding as it is confirmed by the Commonwealth.
- We will continue to partner with the community and First Nations to consult on our proposed scientific research and on ground investigations.
- We will consult on long-term management options prior to, and throughout, feasibility investigations.
- We will co-design opportunities for community involvement going forward.
- We will publish reports on the Healthy Coorong, Healthy Basin webpage as they become available.

### Project Coorong

Healthy Coorong, Healthy Basin forms part of the South Australian Government's broader Project Coorong initiative, which is taking action to restore the health, vitality and visitor experience of this precious place through environmental projects to get the Coorong back on track and initiatives to boost eco-tourism, focusing on the Coorong National Park.

### More information

Email [projectcoorong@sa.gov.au](mailto:projectcoorong@sa.gov.au) or visit [www.projectcoorong.sa.gov.au](http://www.projectcoorong.sa.gov.au)