

Eyre Peninsula desalination project update

Environmental and economic analysis

Early contractor involvement

- A request for tender for early contractor involvement in the design of the desalination plant and marine systems has been released.
- This will support us to progress from a concept to a detailed design of the plant and decide where to place the intake (where the plant draws seawater in) and outfall (where the plant disperses saline concentrate from the desalination process) pipes.

Mid- and near-field modelling

- We are currently modelling the dilution and dispersion of saline discharge at different distances from the plant.
- In addition to results and advice from South Australian Research and Development Institute (SARDI) experts, this will help our engineers design and build an outfall pipe that dilutes discharge efficiently and protects the surrounding environment.

The science stacks up

- Our conservative approach to modelling saline discharge incorporates currents, tidal movements, and water column profiling.
- Initial studies by SARDI demonstrate that with appropriate engineering design, saline discharge will mix quickly with no pooling on the seabed.
- The independent Marine Science Review Panel, which includes internationally renowned experts, also concluded that a desalination plant with the right design can be built at Billy Lights Point, without impacting the local marine environment.
- Further research and background information can be sourced at [WaterTalks](#).

Economic benefits

- SARDI's work continues to improve our understanding of how the local marine environment operates, to support critical sectors to adapt their business practices.
- The project will provide new supply chain opportunities for businesses, and it's expected to support up to 230 jobs per year to 2025-26.



Expert scientists monitor the condition of the bays and model the impacts of a desalination plant.

Construction stages and timelines

The findings from scientific investigations and assessments will inform how the desalination plant is designed, including the position of the intake and outfall pipes.

Alongside other approvals, we will lodge a development application for the plant at Billy Lights Point with the State Planning Commission, which will be assessed by multiple agencies and regulators through a comprehensive approval process.

This process provides an open, accountable, and responsible decision-making approach that includes community consultation.

Subject to all required approvals, construction of the plant is planned to begin in mid-2024, with first water to be delivered from the end of 2025.

Once operational, the desalination plant will be able to produce 16 megalitres (16 million litres) of safe, clean drinking water per day.



The location for the desalination plant is the ex-BHP industrial site at Billy Lights Points.

Rain fails to replenish stressed Uley South Basin

The Eyre Peninsula Landscape Board recently released this news statement about local water sources.

Recent analysis of the state of Eyre Peninsula's underground water sources has confirmed the urgency required to secure the region's future water security.

Despite several years of La Niña weather patterns, rainfall has not resulted in sufficient aquifer recharge to see recovery in water levels.

The Uley South Basin, which is currently the primary source of drinking water for Eyre Peninsula, including in homes and industries such as agriculture and mining, recorded water levels 'below' or 'very much below average' in almost half of its wells during the past 12 months.

This trend has been observed in other groundwater resources across the region, including the Robinson Lens near Streaky Bay, the Poldia Lens and Bramfield Lens near Elliston, and the Lincoln Basin and Uley Wanilla Lens. Downward trends are being observed in aquifers regardless of whether they are being extracted from or not.

The Eyre Peninsula Landscape Board develops and maintains the water allocation plan that regulates how much water can be taken from the prescribed groundwater resources.

Eyre Peninsula Landscape Board General Manager Jonathan Clark said an alternative water source is urgently needed.

"Time is fast running out and we cannot continue to spend more years deliberating the merits of a range of solutions," said Jonathan. "Decisive action is required now, before we lose this critical resource forever.

"Managed sustainably, Uley South can continue to be an important contributor to the region's water supply, as it is a large and robust resource. If, however, it is over-extracted, it is at risk of irreversible damage through the ingress of seawater into the aquifer.

"In addition to the Uley South Basin, water is extracted from other smaller fresh underground lenses. Due to low groundwater levels and increasing salinity, these lenses will likely be decommissioned in coming years. A combination of the need to protect the long-term sustainability of the Uley South Basin, the imminent loss of the existing diversity of supply from Lincoln and Uley Wanilla lenses, plus the latest El Nino and climate change predictions have left us in a precarious position.

"The longer the delay in obtaining a climate independent source of water, the greater the risk of damage to the Uley South Basin, leaving the region with very few alternative options for securing drinking water supplies to our communities, businesses, and agricultural enterprises."



The Uley South Basin continues to be under stress.

State of the bays

The Environment Protection Authority (EPA) recently published its latest [Aquatic Ecosystem Condition Report](#), examining the Jussieu Nearshore Marine Biounit, which extends from Cape Catastrophe including Thistle Island through to Salt Creek north of Tumby Bay and encompasses Louth, Boston and Proper Bay.

The EPA's condition reports describe the overall health of an aquatic system, and are based on water quality data, modelling, biodiversity surveys (macroinvertebrates and plant life), hydrological and sediment data.

This Jussieu Nearshore Marine Biounit has been graded from 'good' to 'fair' since 2016.

As stated in the report, one of the factors that contributes to the Biounit's condition is the release of nutrients into this area, in particular nitrogen.

The desalination process returns the same amount of existing nitrogen to the marine environment as what is drawn in, so a desalination plant at Billy Lights Point would not add any additional nitrogen to the local ecosystem.

The desalination plant will discharge saline concentrate, with a report produced by the South Australian Research and Development Institute — and reviewed by the independent Marine Science Review Panel — showing predicted changes in salinity due to this discharge would be within the natural salinity variability of the bay system.

Since 1994, we have operated a wastewater treatment plant at Billy Lights Point licenced by the EPA. The quality of wastewater discharge into the marine environment has significantly improved due to the presence of the plant, with raw sewage previously discharged via an outfall to Proper Bay.

Over the past several decades, we have worked to reduce nutrient discharge from the plant to the marine environment. This includes diverting some treated wastewater for irrigation use by the City of Port Lincoln and ongoing treatment process optimisation work, with the latest project beginning earlier this year.

We have also worked with the EPA and local aquaculture industry to connect all land-based fish processing facilities, identified by the EPA, to our wastewater network for the safe and licensed disposal of fish processing waste.

Since 2021, fish processing waste from these facilities has been further treated at our Port Lincoln Wastewater Treatment Plant, before being discharged to the marine environment.



The quality of water discharged from the Port Lincoln Wastewater Treatment Plant has been significantly improved.

