# Managed Aquifer Recharge Feasibility Study
## Water security and sustainability

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Limestone Coast Landscape Board

In-line with its 'Making Every Drop Count' focus, the Limestone Coast Landscape Board are looking to explore bold and innovative new ways to achieve water security and sustainability in the Limestone Coast in a changing climate.

The project works with partners to explore opportunities to balance protecting the region's water resources, growing sustainable primary production and conserving and enhancing our biodiversity.

The Limestone Coast has been identified as a region with substantial potential for economic growth, driven by its primary production industries, which currently inject more than $3.8 billion in Gross Regional Product.

To achieve this we will need a new strategic water resource management approach.

This study, led by the Limestone Coast Landscape Board in partnership with the Primary Producers Sustainable Water Group, will explore the feasibility of sourcing excess water from the drainage network and storing it in the aquifer for the benefit of primary industries.

### 'Making Every Drop Count' key partners

The Limestone Coast Landscape Board's 'Making Every Drop Count' initiative works with partners to identify and implement projects that balance protecting the region's water resources, growing sustainable primary production and conserving and enhancing our region's biodiversity. Partners include;

- Nature Glenelg Trust
- South East Aboriginal Focus Group
- South East Water Conservation and Drainage Board
- SA Water
- Goyder Institute for Water Research
- Primary Industries and Regions SA
- Primary Producers Sustainable Water Group
- Department for Environment and Water
- National Parks and Wildlife
- Lake George Management Committee

## New thinking for water drainage

There is a long history of drainage in the Limestone Coast with the first drains constructed in 1863. Expansion of the network has converted what was once a wetland dominated landscape into productive agricultural and forestry industries. As a result the lower Limestone Coast drainage network removes a large volume of water from the landscape annually to support primary production.

But what if this water was retained in the landscape? Could it benefit our primary producers?

The Limestone Coast Landscape Board is exploring the feasibility of managed aquifer recharge as a means to store available water from the drainage network for primary production use.

## What is managed aquifer recharge?

Managed Aquifer Recharge (MAR), or Aquifer Storage and Recovery (ASR) as it is sometimes referred to, is the process of taking surplus surface water and storing it in aquifers beneath the ground for later use. In certain circumstances it is a proven water security measure, including many successful schemes in Australia that range in scale from golf courses to major irrigation precincts.

For example, in times of high rainfall and excess water in the landscape, water may be stored in an aquifer to be used at a later date when the rainfall is low. The recharged water can be extracted and used as an additional water source.

## Why is the managed aquifer recharge feasibility study required?

Use of available drainage water to supplement existing groundwater resources through managed aquifer recharge has generated strong interest amongst primary producers, particularly in the lower Limestone Coast area. However, further work is needed to understand the opportunities, risks and benefits of establishing managed aquifer recharge schemes to achieve water quantity and water quality outcomes for consumptive (e.g. irrigation extraction and forest water use) purposes.

## What is the managed aquifer recharge feasibility study?

This feasibility study will provide an understanding of the potential opportunity for managed aquifer recharge in the lower Limestone Coast area.

Specifically, it will investigate how much water is available in the south east drainage network, if there is a demand for access to more water and whether it is possible to store additional water in the aquifer for use by primary industries.

Working with the South East Water Conservation and Drainage Board and stakeholders the project will build a greater understanding of the region's water resources and will include:

- Analysis of an extensive historical database of drain flows and water quality to provide informative descriptions of the seasonality and inter-annual variability in drain flows
- Quantifying of existing drainage network environmental and user commitments
- Estimation of future water needs, and location of water need, based on proposed growth opportunities of respective user groups
- Assessment of soil type, aquifer characteristics, surface-groundwater interactions, and other factors, to identify suitable sites and methods for managed aquifer recharge
- Consultation with stakeholders to understand perceptions of water availability and related opportunities for use, and opportunities for efficiency measures as an alternate to sourcing additional water.

## Meet the Project Manager

Innovative Groundwater Solutions (IGS) specialise in solving complex groundwater management problems in Australia and internationally.

IGS director and principal hydrogeologist Glenn Harrington has more than 25 years' experience in groundwater assessment and management. He has extensive experience in the Limestone Coast region and has built strong working relationships with the region's stakeholders.

## How you can be involved

The feasibility study will include consultation with industry, community and environmental stakeholders.

Stakeholders are invited to participate via a series of meetings, workshops and briefings planned for the month of February 2022, with options for either face-to-face interactions or video conferencing, depending on COVID-19 restrictions and health advice at the time.

Consultation with stakeholders will include representatives from major primary industries, including plantation forestry, grape and wine producers, dairy, potatoes and onions, small seed and irrigated pasture growers.

Environmental groups, State and Local Government and First Nations are also invited to provide their perspectives.

Feedback is sought on current and future water demands for each sector, perceptions of surface water availability, such as drain outflows to sea, knowledge of existing surface water harvesting infrastructure (e.g. dams and weirs), and opinions on the feasibility of using MAR at various scales.

Acknowledgment
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