

# Coastal Restoration with Regenerating Our Coasts

*Using biodegradable structures to facilitate mangrove restoration*

## Program Overview

Regenerating Our Coasts is a multidisciplinary program that encompasses two overarching themes: Restoration & Outreach. We are trialing biodegradable structures to promote coastal regeneration, while assessing broader opportunities for these facilitated restoration techniques in Australia. We are also educating and engaging the public, stakeholders and industry on how facilitated restoration techniques can benefit the ecosystem at local scales and beyond. This program aims to advance the health and stewardship of our coastal ecosystems through meaningful ecological and social impact.

### Thank you for your support!

By allowing us access to your land you are supporting innovation within the field of restoration science. It is our hope that these structures will lead us to new ways of restoring and rehabilitating coastal wetlands. The success of this restoration method will be monitored and results will be written in a report, and shared with you.

## Contact Information

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# Restoration Design

## Objective

We would like to use a new method of active mangrove restoration on the Jam Jerrup foreshore, which involves biodegradable, 3D printed structures (L90xW40xH6cm) made of potato starch, called BESE elements.

The structures have been found to reduce wave energy and from observations of our pilot sites, the structures appear to be able to retain and build up sediment, which helps new mangrove seedlings establish.

Our objective for this site, is to fill in gaps between existing mangrove stands, to support continuous growth and resilience of this mangrove population.

## Size and location

The diagram below (Figure 1) demonstrates what one plot would look like. Each plot is L200x W100xH9cm m and a total of 24 young and older mangroves seedling will be planted in each.

The map (Figure 2) outlines where the plots will be located. These locations have been chosen based on existing mangrove stands.

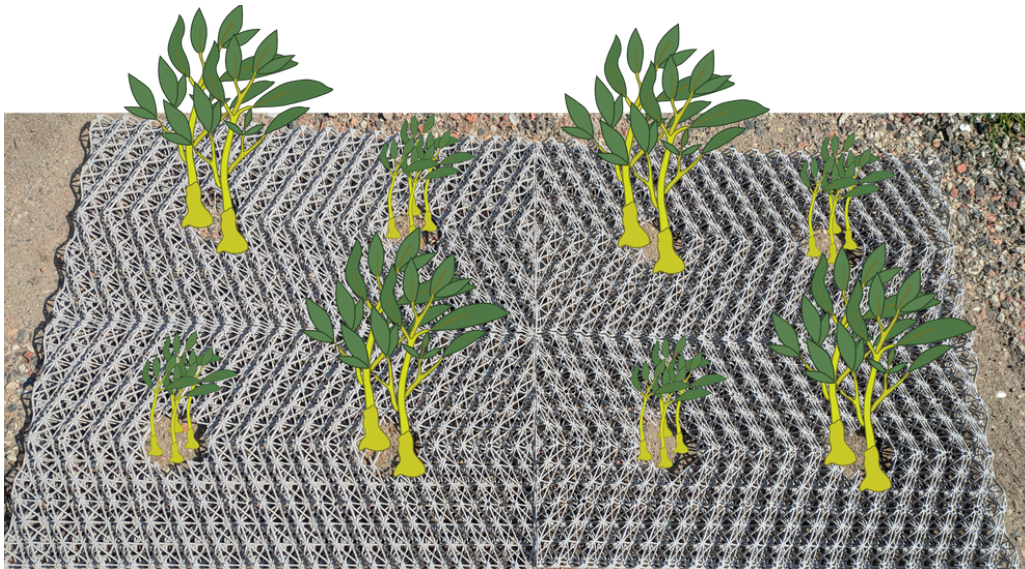


Figure 1: A mix of 9-18 month old mangroves planted with the support of 4 biodegradable structures.

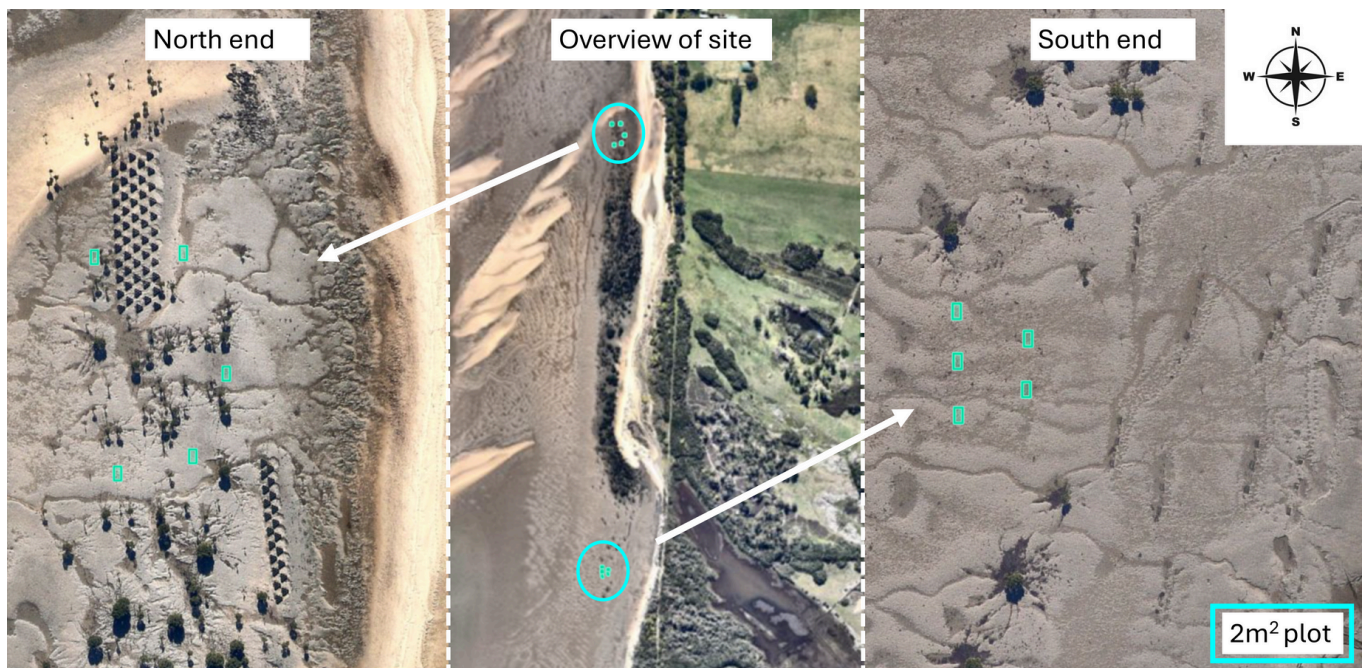


Figure 2: Maps showing where the 1x2m plots will be located in the north end and south end of the Jam Jerrup Foreshore.

# Site Information

## Land management information

Table 1: Site and land management information

Information	Description
Location:	Jam Jerrup Foreshore
Land management contact	Jam Jerrup Foreshore Committee
Access Information:	Park at the end of Jam Jerrup Foreshore Rd.
Property History:	Unknown

## Site Access Request

The Regenerating Our Coasts Program started in July 2022, and running for 3 years. We would therefore like to have access to your site from 2024-2025. Giving us access will allow us to deploy the structures, and monitor the restoration outcomes across the next 1-2 years.

Table 2: Description of planned activities

Access Type	Description	Approximate dates
Site assessment and planning installment	GPS and elevation	October 2022
Deployment	<p>All structures will be deployed on the same day. The following materials will be installed and monitored in for 3 years, until the end of the project:</p> <ul style="list-style-type: none"><li>40 structures (L90xW40xH9cm)</li><li>120 steel pegs (L40cm) for securing the structures (3 per structure)</li></ul> <p>Additionally, we will be planting mangrove seedlings, that have grown in nursery for 9-18 months. Seeds for these were collected at the Jam Jerrup Foreshore.</p> <p>Any materials that have not biodegraded, will be removed by the end of the project</p>	October 2024
Monitoring	<p>We will be monitoring the following</p> <ul style="list-style-type: none"><li>Survival rate of the planted mangroves</li><li>Potential for further monitoring by the community members</li></ul>	October 2024 - December 2025