

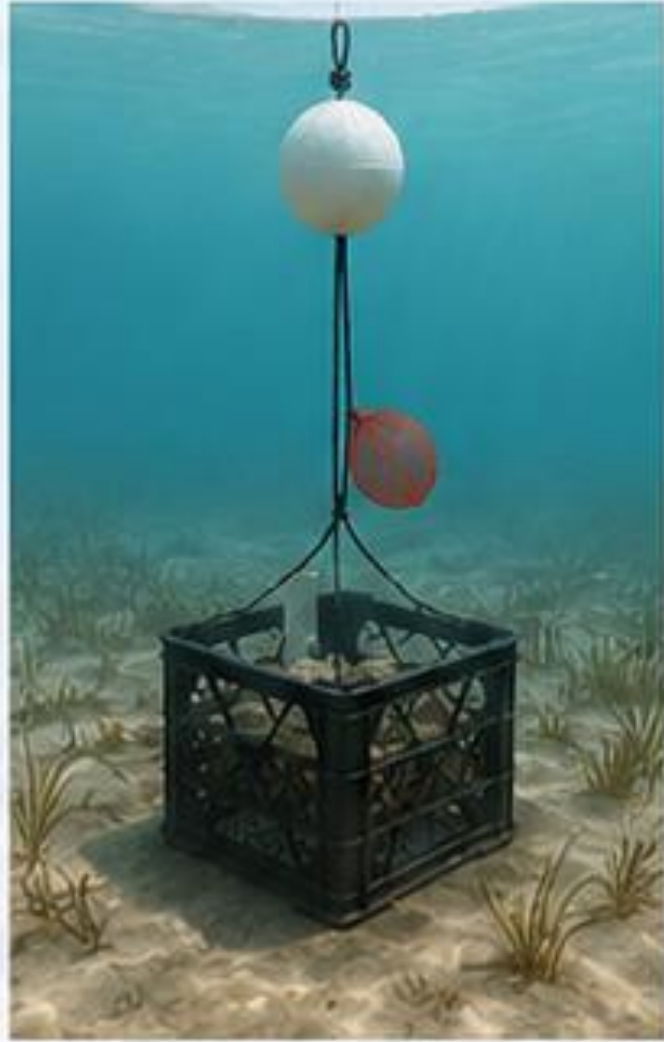
An underwater photograph showing a diver in a black wetsuit and blue helmet, holding a clipboard and pen, standing in a dense kelp forest. The water is greenish-brown, and the seabed is covered in kelp and rocks. A white boat hull is visible at the top of the frame.

Community-based shellfish reef restoration

Nauo Country, Coffin Bay

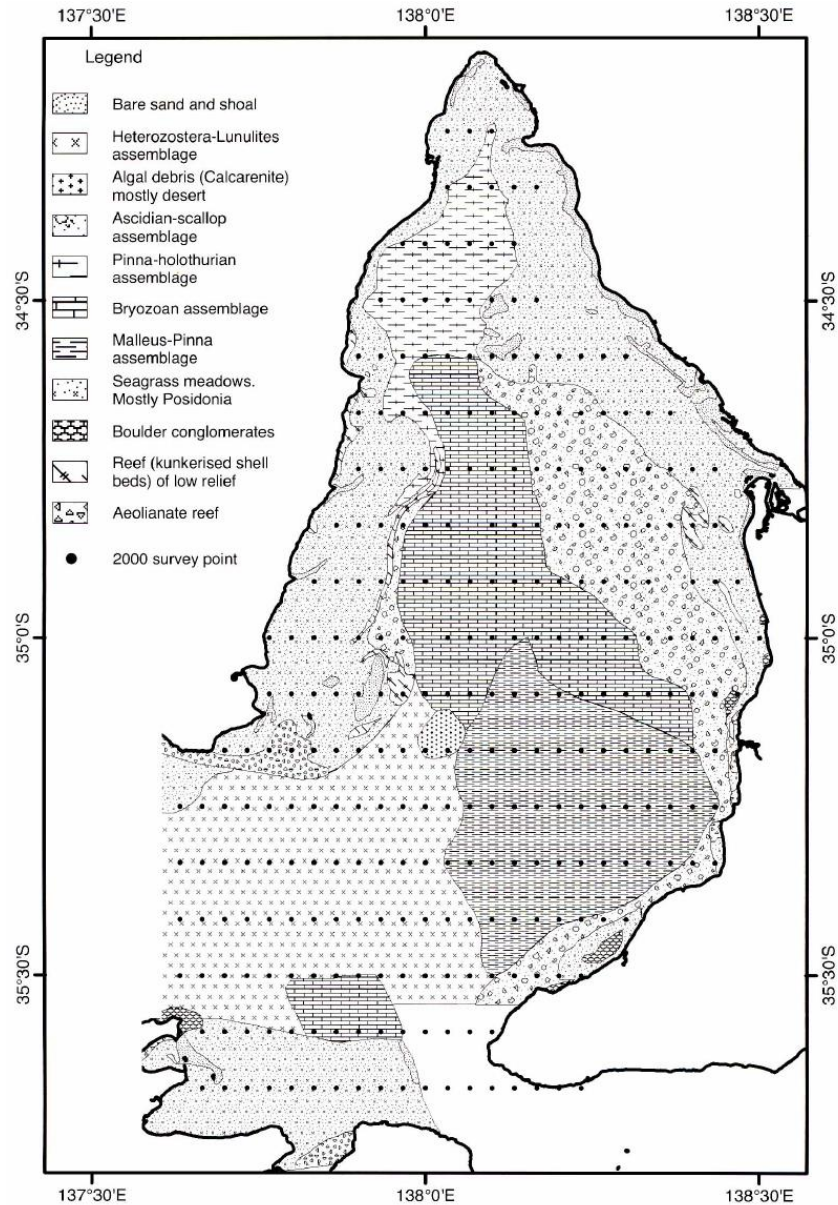
Stefan Andrews – Ocean Imaging

Dr Dominic McAfee
dominic.mcafee@adelaide.edu.au



SUBSTRATE, SEDIMENTS AND SUBTIDAL ECOLOGY OF GULF ST VINCENT AND INVESTIGATOR STRAIT

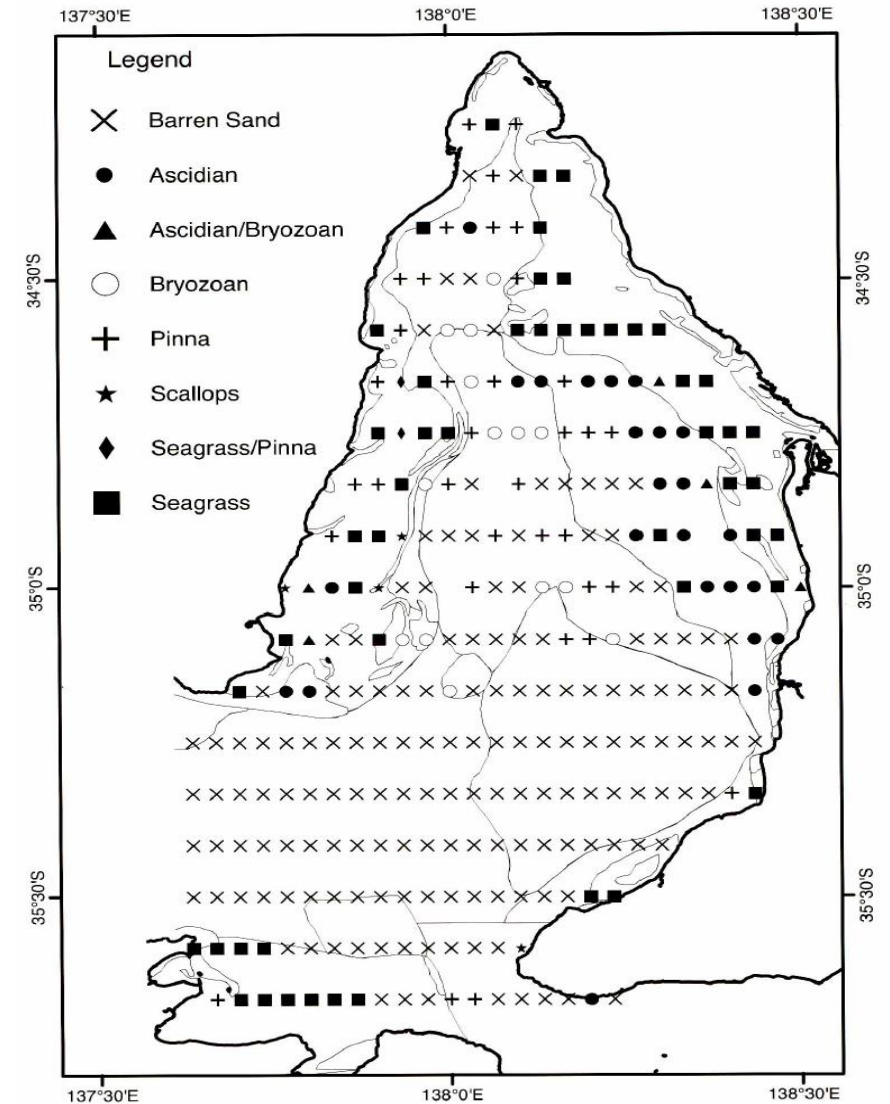
by S. A. SHEPHERD* & R. C. SPRIGG†



Transactions of the Royal Society of S. Aust. (2005), 129(1), 65-73.

THREE DECADES OF HABITAT CHANGE IN GULF ST VINCENT, SOUTH AUSTRALIA.

by J. E. TANNER*

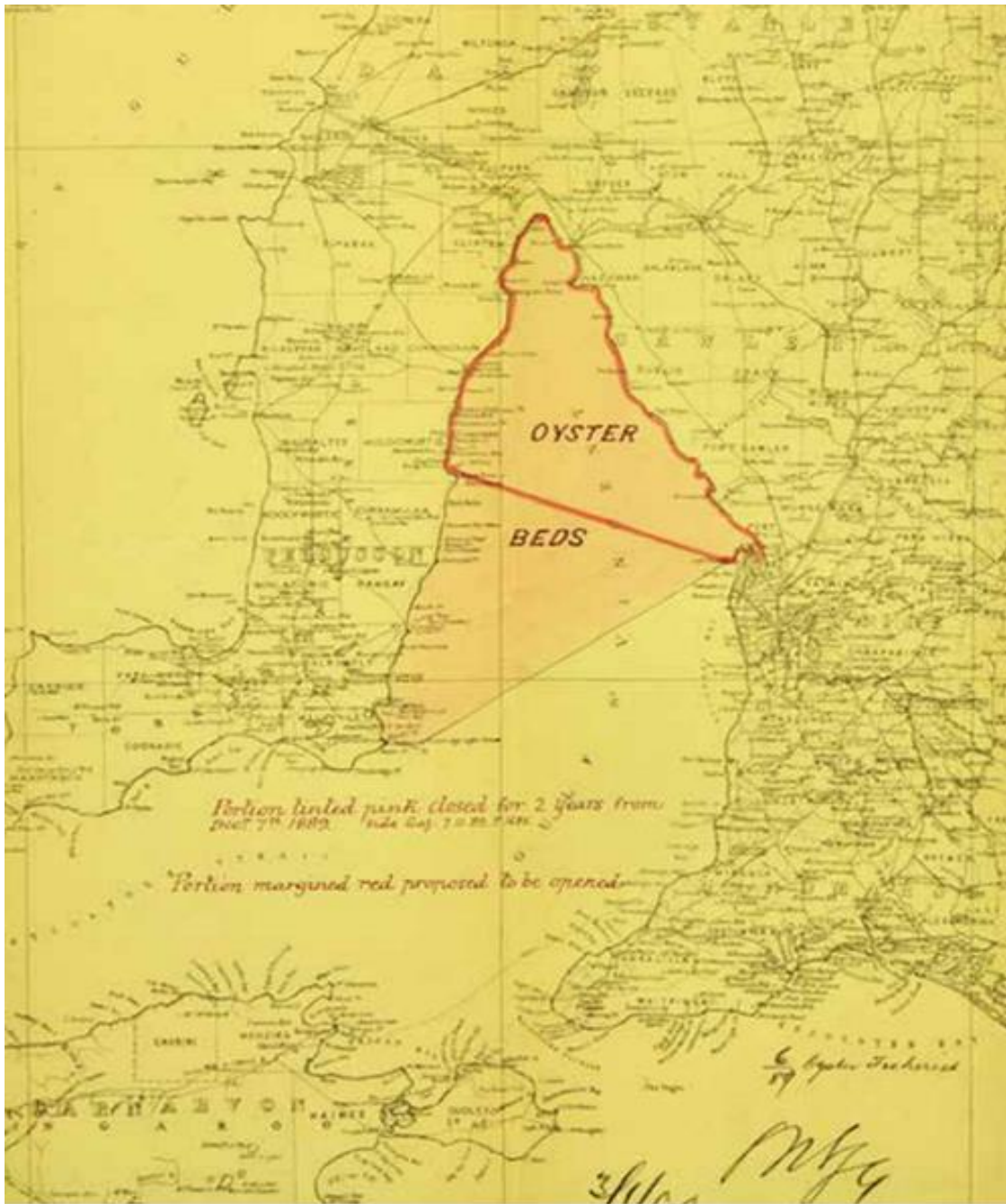




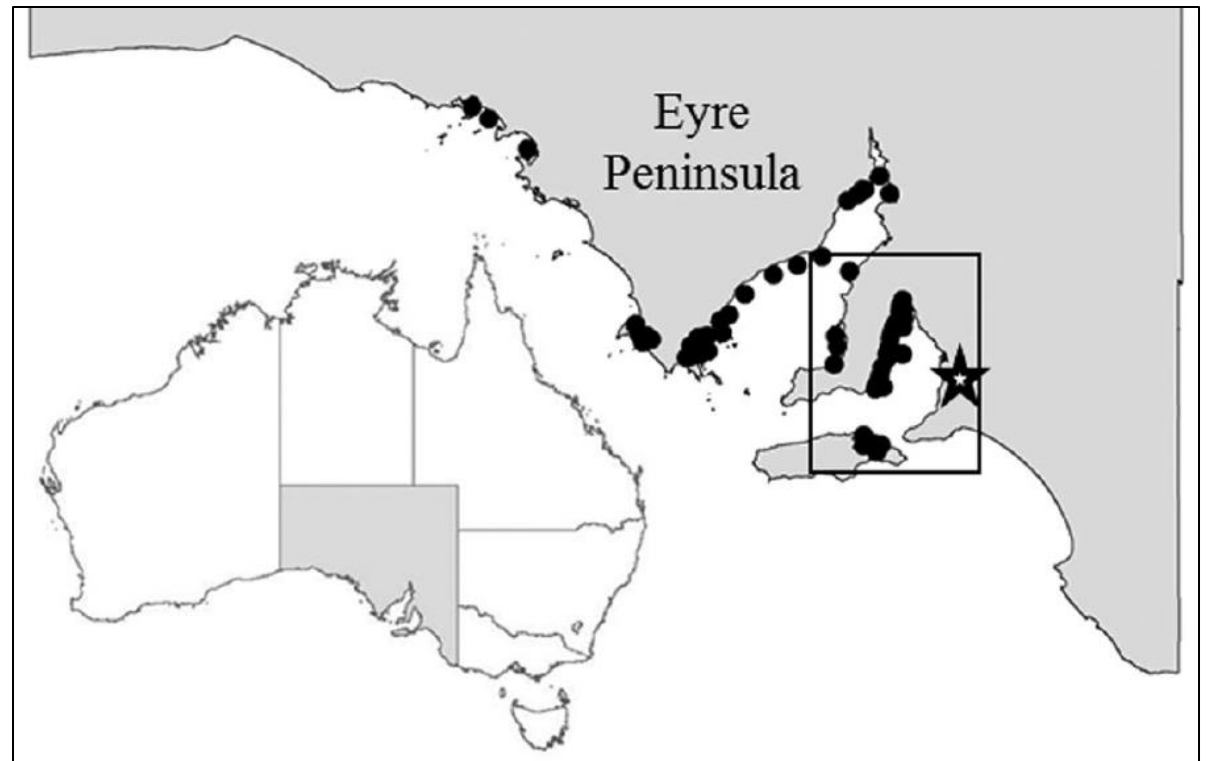
Contributed Paper

Loss of an ecological baseline through the eradication of oyster reefs from coastal ecosystems and human memory

Heidi K. Alleway* and Sean D. Connell



1889 oyster fisheries map





ELSEVIER

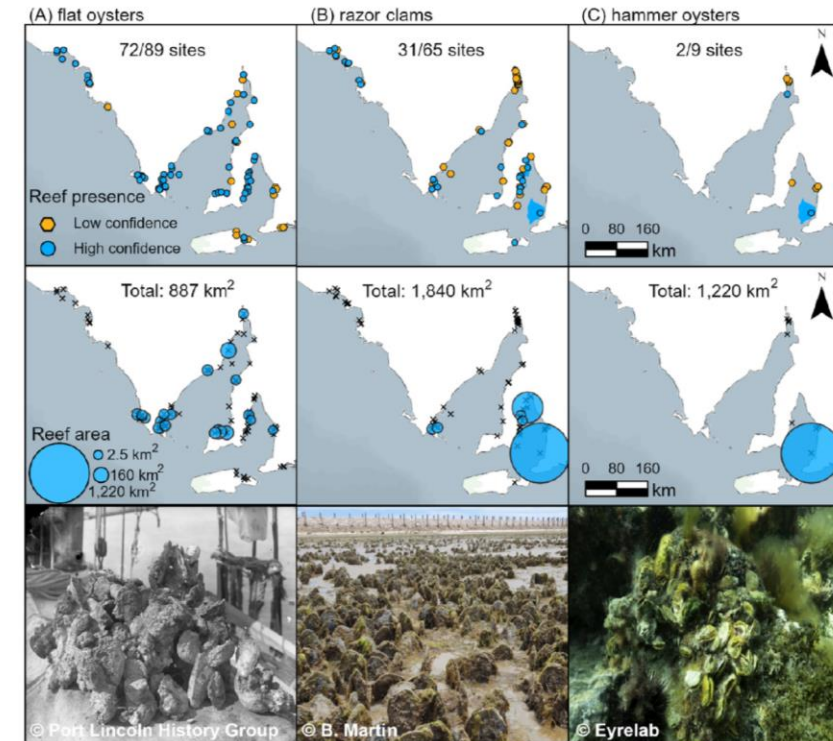
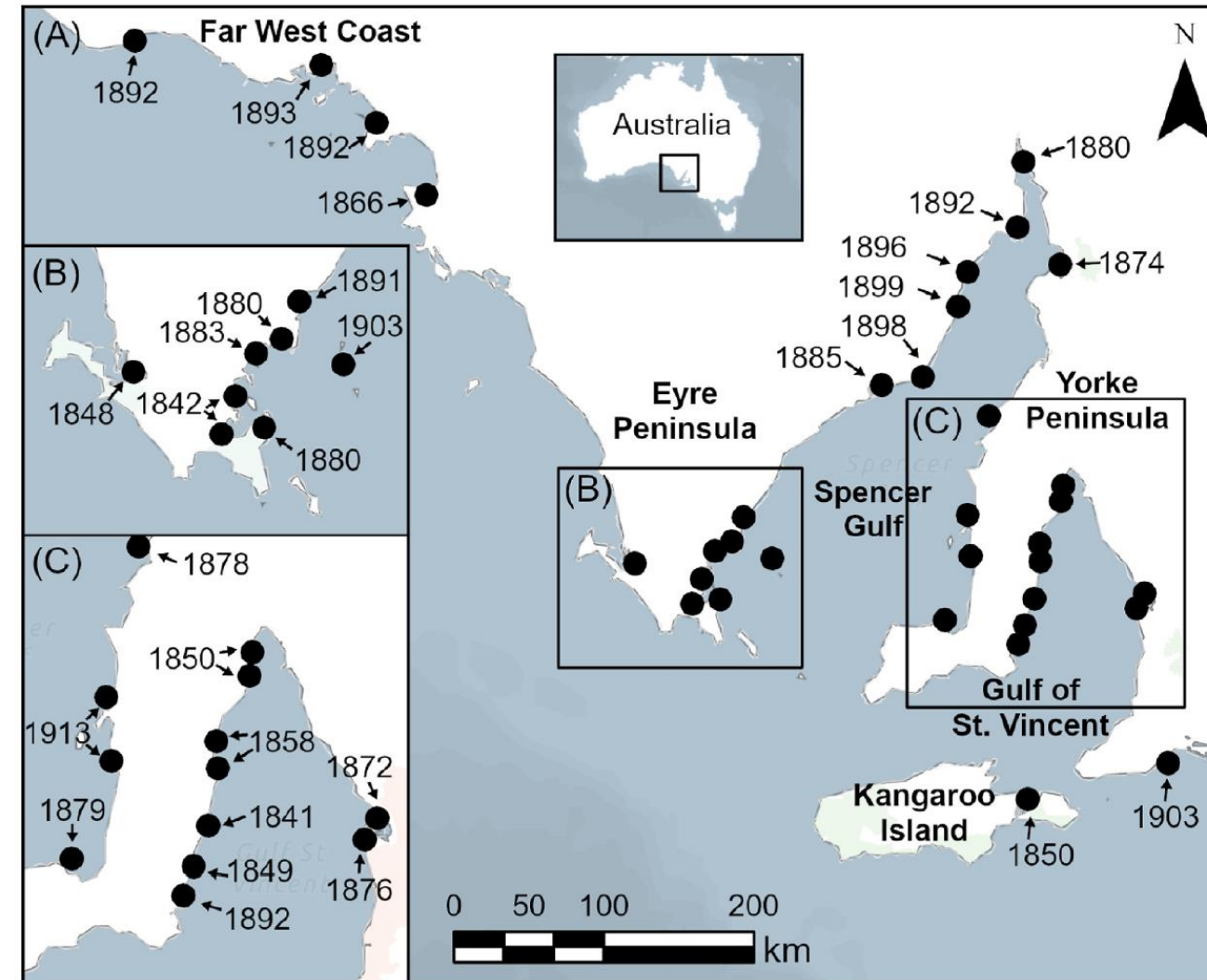
Contents lists available at ScienceDirect

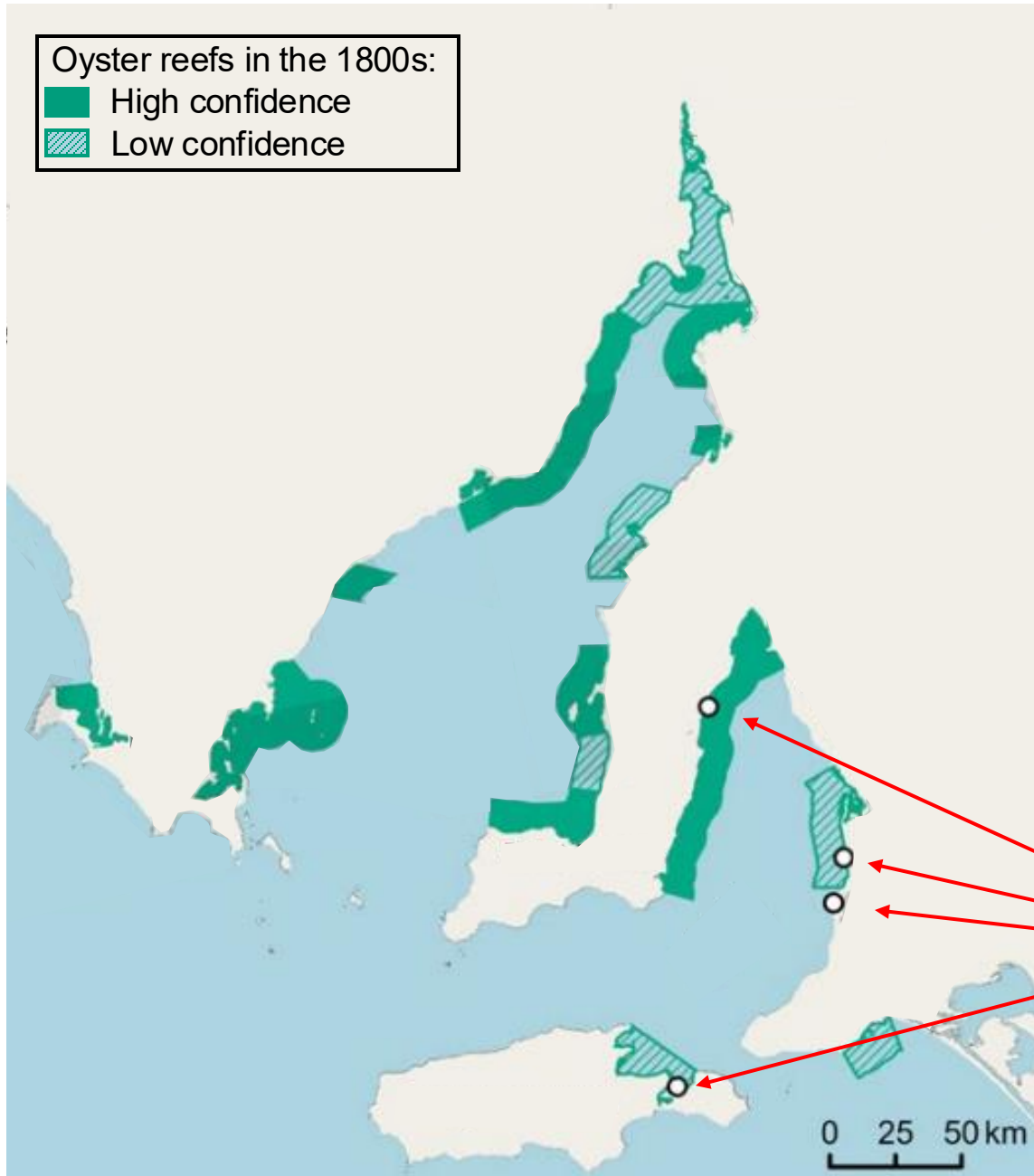
Ocean and Coastal Management

journal homepage: www.elsevier.com/locate/ocecoaman

Reviving shellfish reef socio-ecological histories for modern management and restoration

Brad Martin^{a,*}, Charlie Huveneers^a, Simon Reeves^{a,b}, Ryan Baring^a





Georges Bay, Tasmania



Windara Reef construction



Glenelg Shellfish Reef Restoration

2020



2023





This includes \$20.6 million for environmental restoration, such as:

- ✓ Constructing new limestone native oyster reefs along the coast, creating an environment where native oysters can grow into a natural reef.
- ✓ Creating additional community recycled oyster reefs – bringing the total number to 25 projects around the state
- ✓ Funding seagrass and blue carbon research in Gulf St Vincent – where seagrass can help filter excess nutrients from the water, providing a food source for bacteria that inhibit algal growth
- ✓ Supporting breeding programs for vulnerable marine species.

OFFICIAL

The Nature Conservancy
Australia

1 x 16 ha limestone boulder reef

Adelaide University

25 x 1 ha shell bag reefs

fish
POWERED BY BCF

1 x 1 ha shell gabion reef



RECFISH SA
Concrete reef modules



Early engagement on site selection & co-designed participation

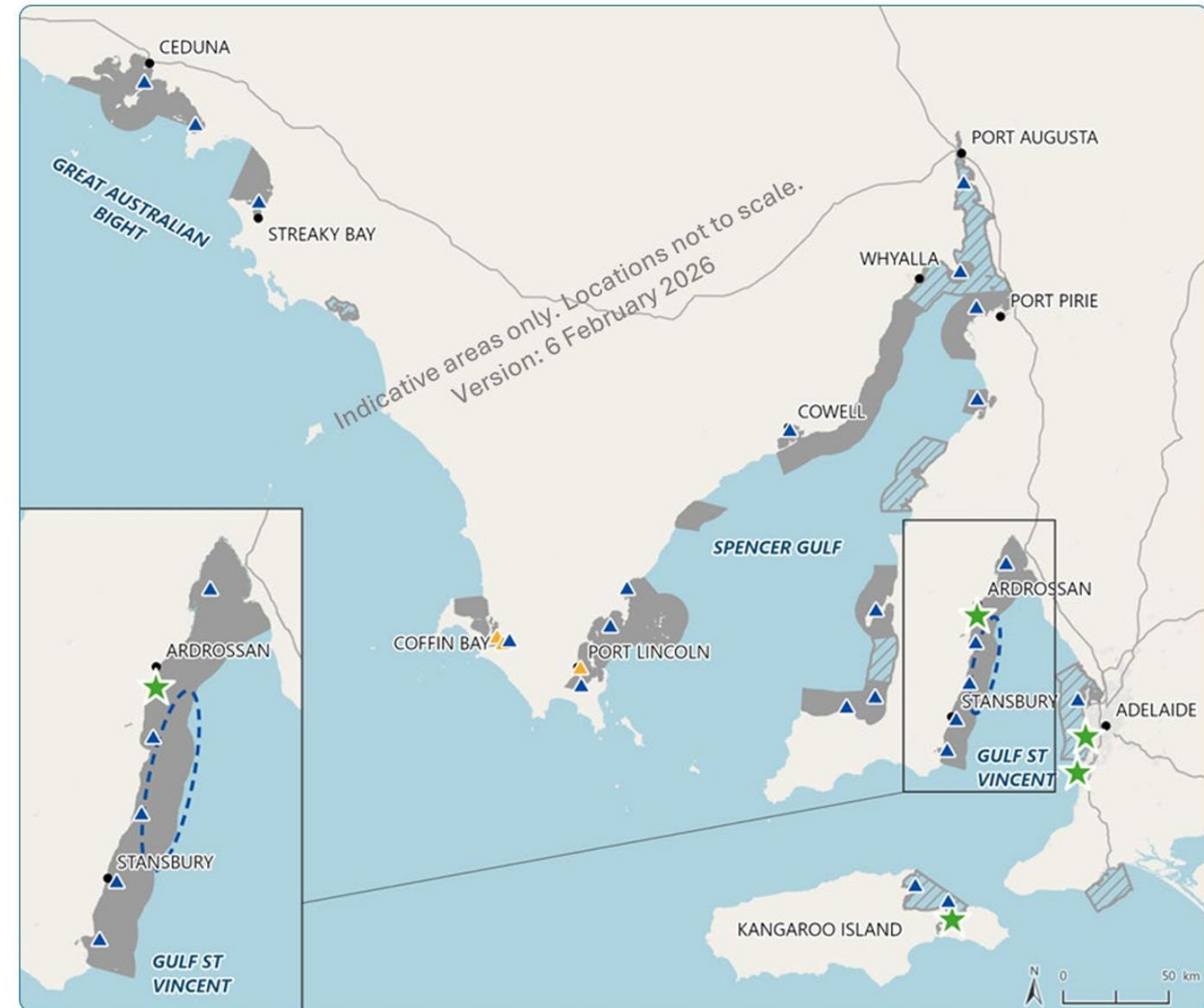
- Aboriginal Corporations
- Oyster farmers
- Commercial fisheries
- Landscape Boards
- Community forums
- Local schools



Yorke Peninsula Country Times, 12.05.26

Rebuilding South Australia's lost shellfish reefs

Map of potential shellfish reef restoration locations - Indicative areas only (6 February 2026)

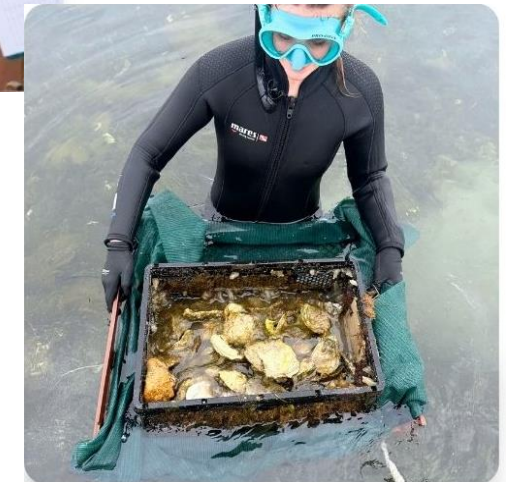
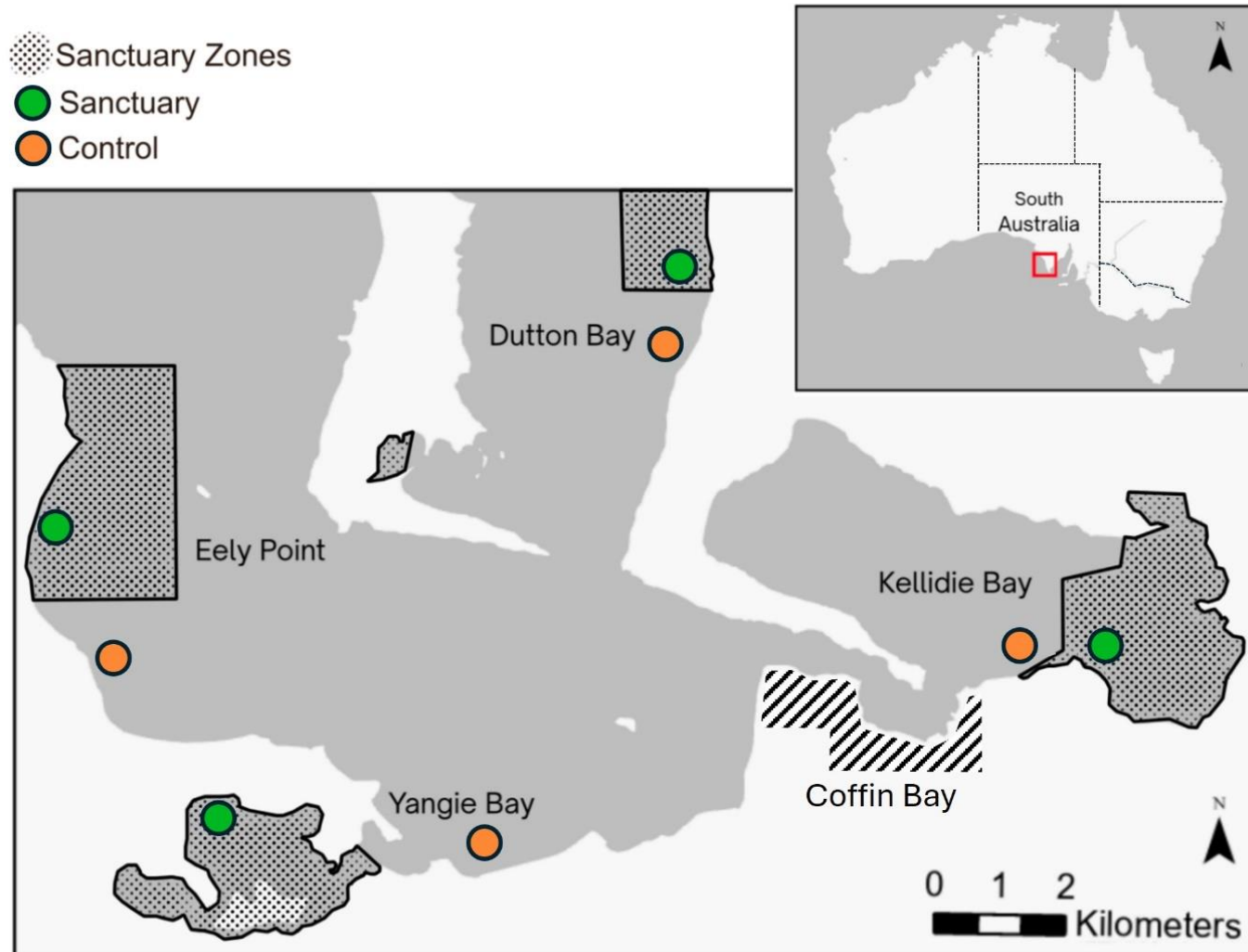


RESEARCH ARTICLE

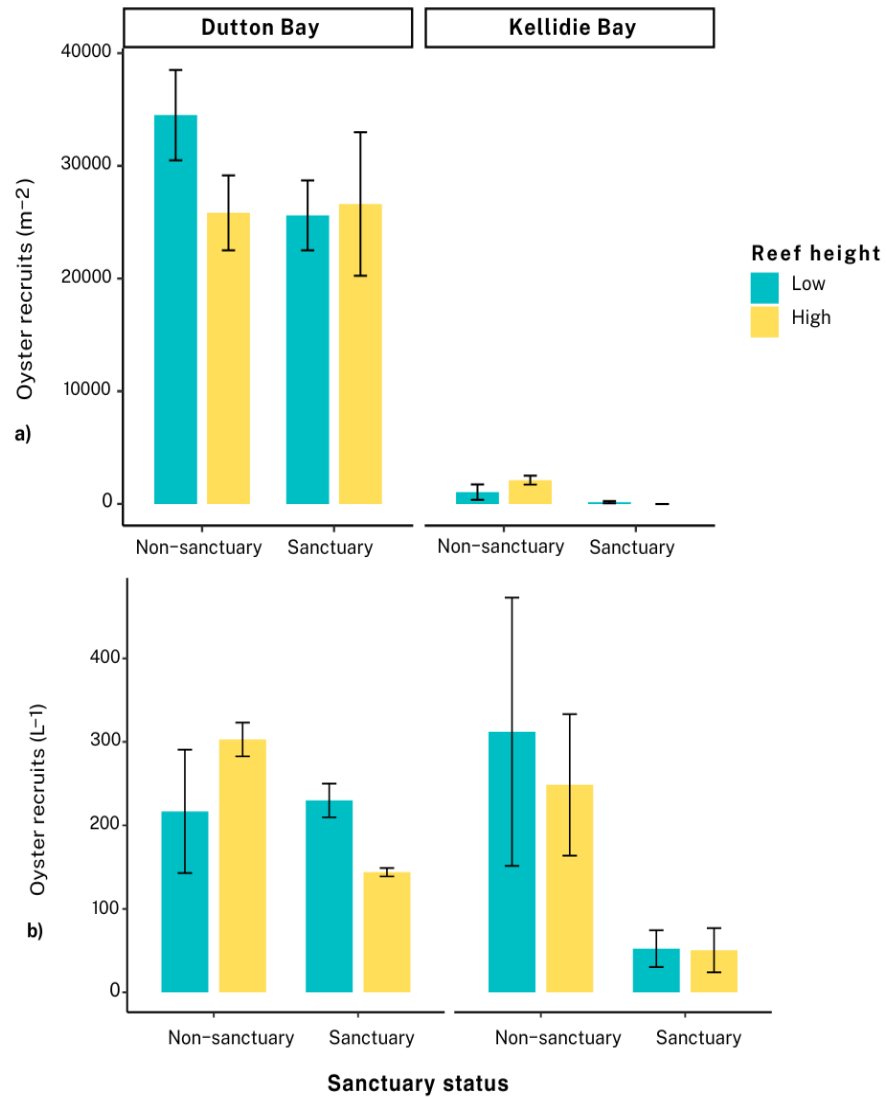


Community-based marine restoration to generate social licence and ecological knowledge for upscaling oyster reef restoration

Nichole Lindsey¹ | Sean D. Connell^{1,2} | Emmanuel Katz³ | Dominic McAfee^{1,2}



Ecological and social responses



Flat oyster (*Ostrea angasi*) recruitment across bays, sanctuary status, and reef height.



82%
surprised
by results

91%
want more
oyster reef
restoration



“

“Do it! We need them to clean the bay.”

October 2024

Share ● Connect ● Build



82%

surprised by results

91%

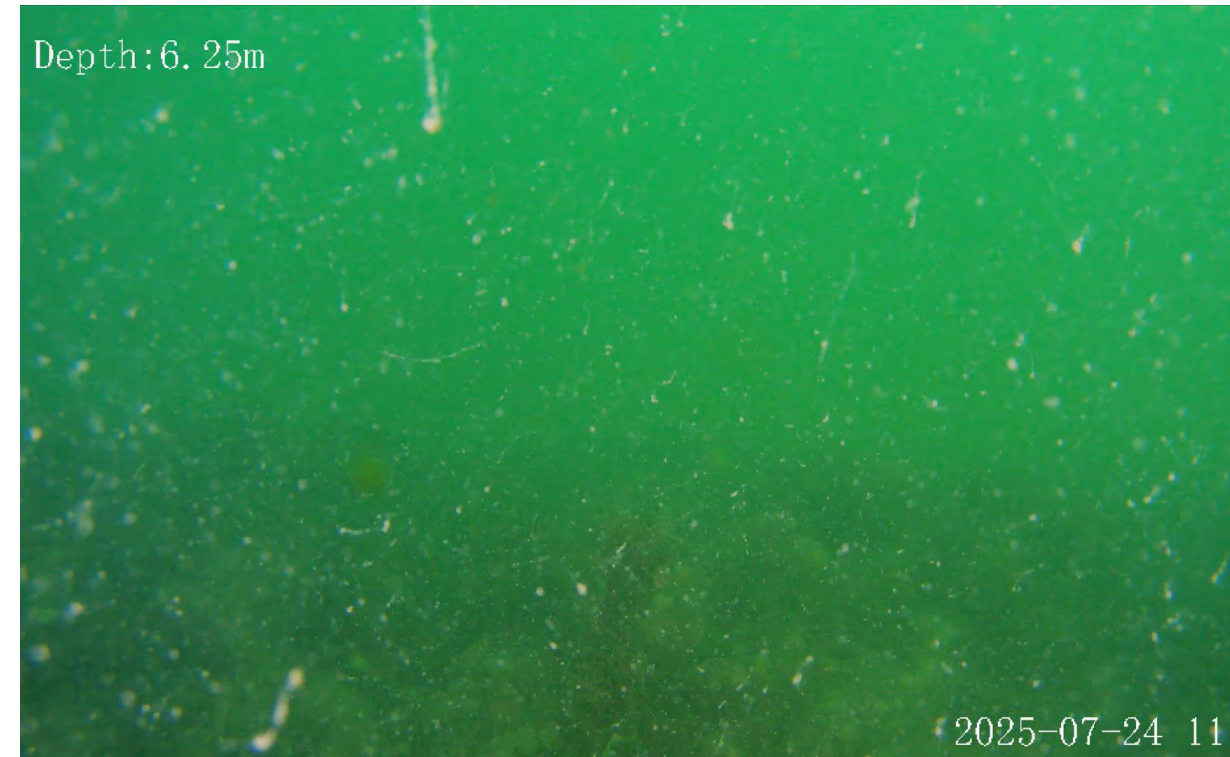
want more oyster reef restoration



Glenelg Shellfish Reef Restoration



May 2025



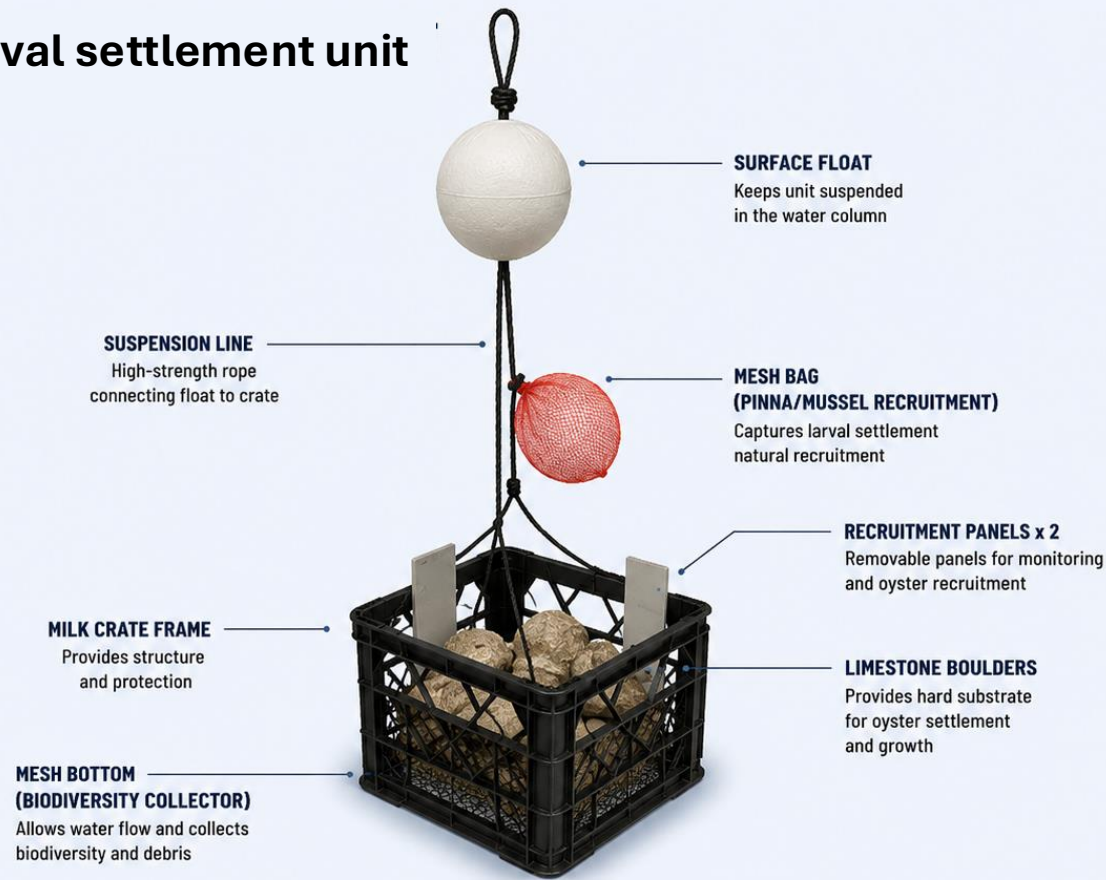
July 2025

OFFICIAL



Larval settlement unit

OFFICIAL



TOP VIEW



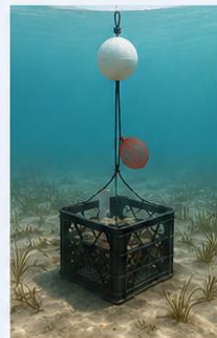
SIDE VIEW



FRONT VIEW

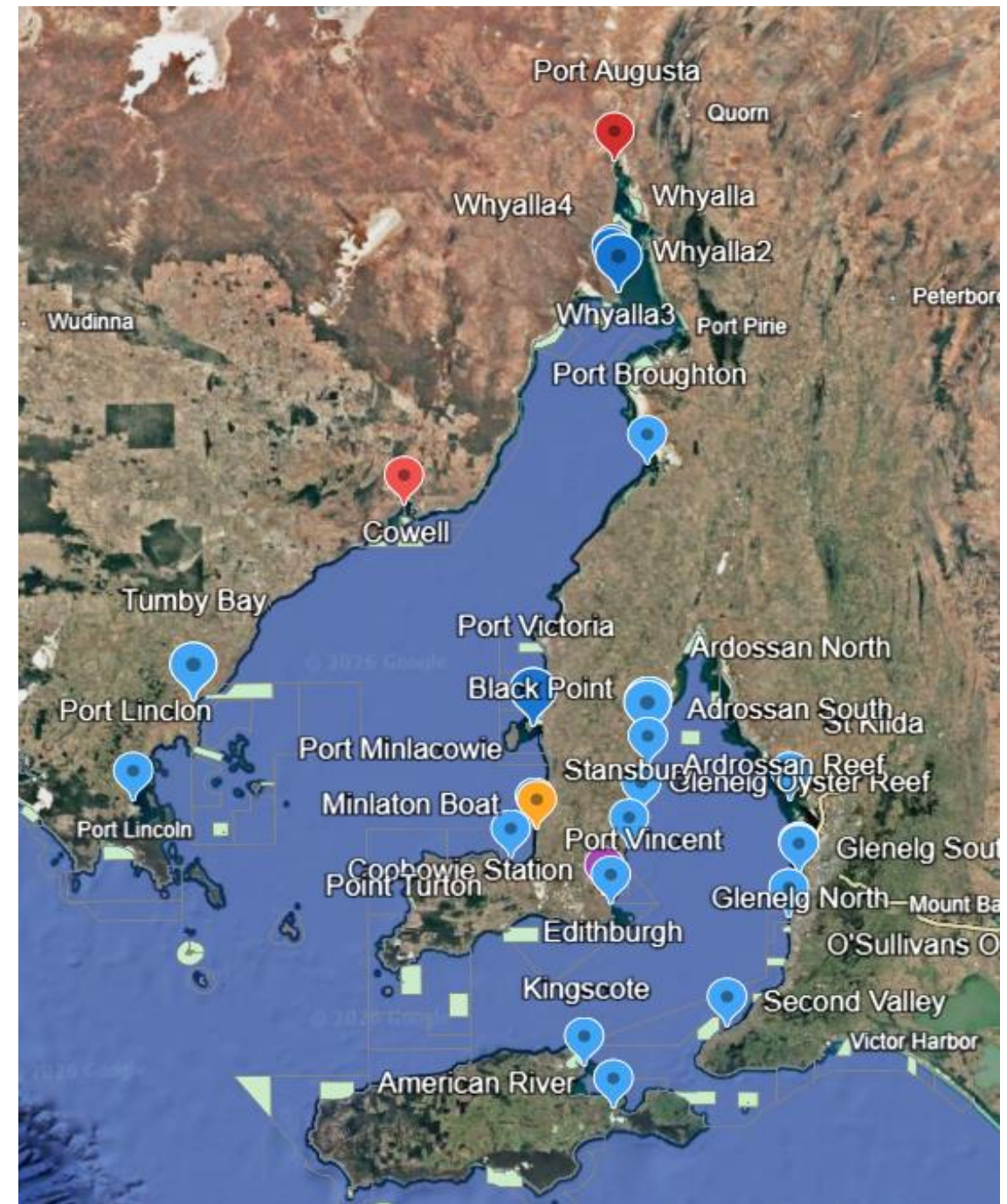


IN-WATER VIEW



UNIT SPECIFICATIONS

- Designed for 4 month deployment cycles
- Supports oyster recruitment and biodiversity
- Modular and scalable for monitoring
- Deployed in marine environments across South Australia



Glenelg Reef:

$2,989 \pm 623$ oysters m^{-2}

Port Vincent:

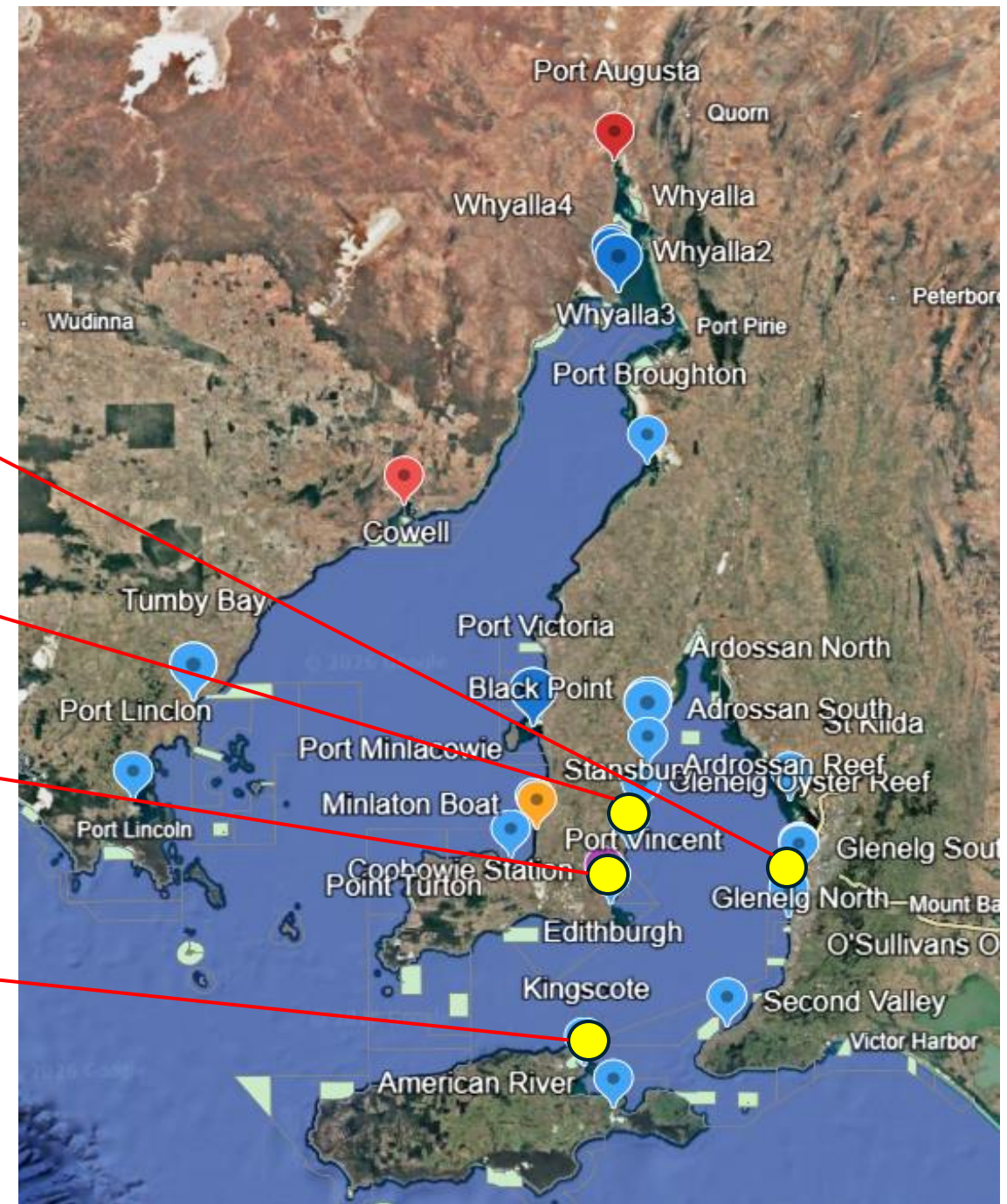
161 ± 83 oysters m^{-2}

Stansbury:

333 ± 67 oysters m^{-2}

Kingscote:

$2,778 \pm 422$ oysters m^{-2}



FISH:

- *Gymnapister marmoratus* – South Australian cobbler
- *Genypterus tigerinus* – rock ling
- *Cristiceps australis* – southern crested weedfish
- Genus *Aspasmogaster* – clingfish
- *Parapercis haackei* – wavy grubfish
- *Parablennius tasmanianus* – Tasmanian blenny
- *Ophiclinus antarcticus* – dusky snake blenny
- *Neogobius green* – twin bar goby
- *Vincentia conspersa* – southern cardinal fish
- *Alabes dorsalis* – common shore eel
- *Favonigobius lateralis* – sand goby
- *Pseudogobius olorum* – bluespot goby
- Genus *meuschenia* - leather jacket



CRABS:

- *Pagurixus handrecki* – small hermit crab
- *Portunus armatus* – blue swimmer crab
- *Actaea calculosa* – faceted crab
- *Litocheira bispinosa* – flat-face crab
- *Megametope rotundifrons*
- Genus *Halicarcinus* – pillbox crab
- *Nectocarcinus integrifrons* – rock crab
- *Schizophrys rufescens* – spider crab
- *Pinnotheres pisum* – pea crab
- *Brachynotus spinosus* – little shore crab
- *Leptomithrax gaimardii* – great spider crab
- *Pilumnus tomentosus* – common hairy crab
- *Elamena abrolhensis* – blunt-nose sea-spider
- *Halicarcinus ovatus* – three-pronged sea spider
- Genus *Ebalia* – purse crab family (Leucosiidae)
- Crab Sp. A - Spider crab to ID

Other CRUSTACEANS:

- *Alpheus novaezealandiae*
- *Alpheus villosus* – hairy pistol prawn
- *Acutigebia simsoni* – sand borer
- *Palaemon serenus* – red-handed shrimp
- Glass shrimp
- *Alpheus villosus* – red shrimp
- *Galathea australiensis* – squat lobster
- *Zuzara venosa* – marine pill bug
- *Euidotea peronii* – sea centipede
- Tanaidacea
- Leptostraca – sea flea
- *Lepas pectinata* – goose barnacle
- *Ceradocus rubromaculatus*



MOLLUSCS:

- *Hiatella australis*
- *Solemya australis*
- *Electroma georgiana*
- *Cellana tramoserica*
- *Haliotis cyclobates*
- *Bembicium vittatum*
- *Conus anemone*
- *Katelsia rhytiphora*
- *Nerita atramentosa*
- *Stomatella impertusa*
- *Semipallium aktinos*
- *Ischnochiton variegatus*
- *Astraliu squamiferum* / *Bellastraea squamifera*

CRABS:**ECHINODERMS**

- *Ophiomyxa australis* – brittlestar
- *Allostichaster polyplax* – many-armed starfish
- *Uniophora granifera* – granular sea star
- *Meridiastra gunnii* – six-armed star
- *Antedon incommoda* – feather star

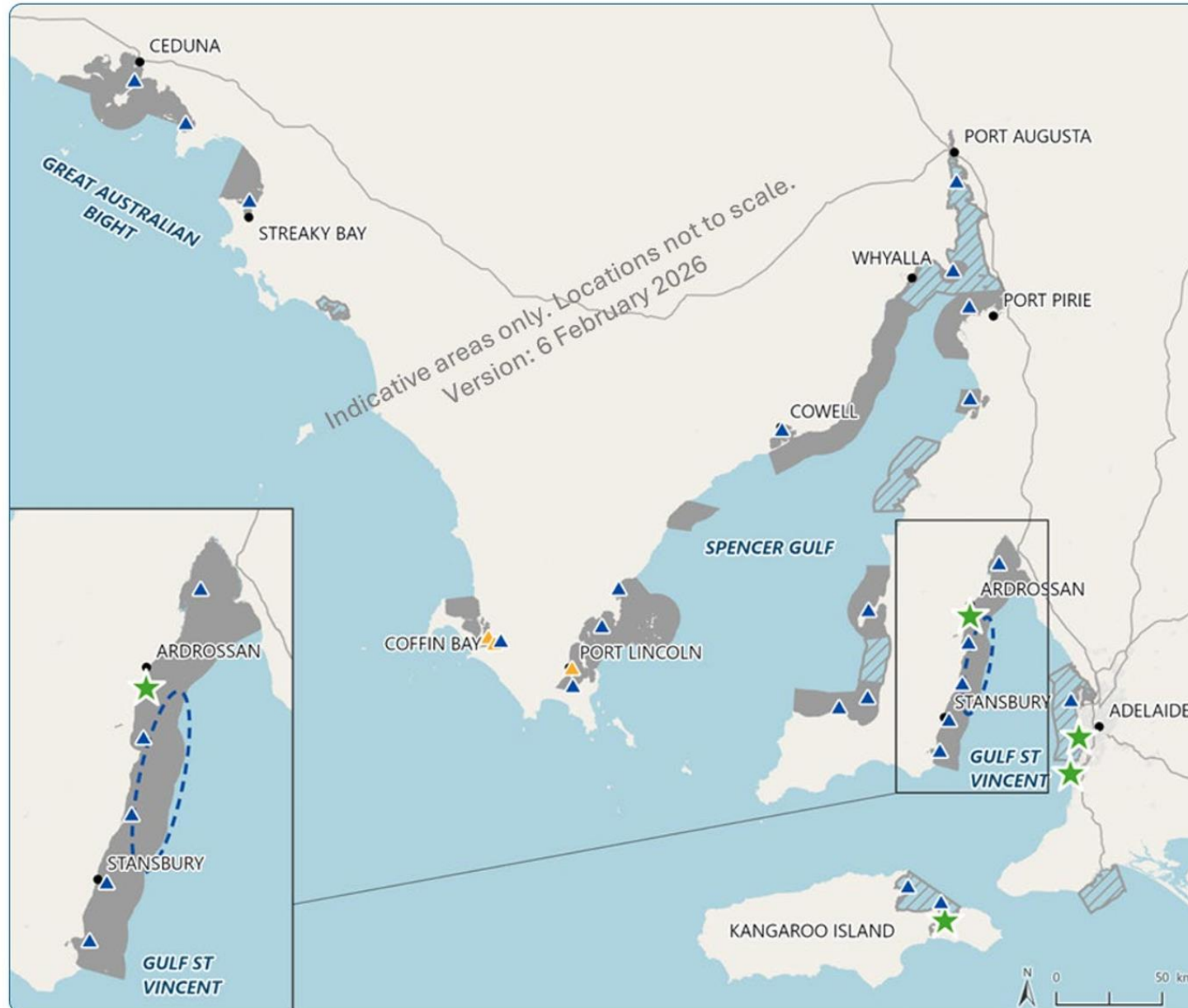
**POLYCHAETA:**

- *Pectinaria antipoda* – trumpet worm
- *Baseodiscus delineatus* – ribbon worm
- Family Terebellidae – spaghetti worm

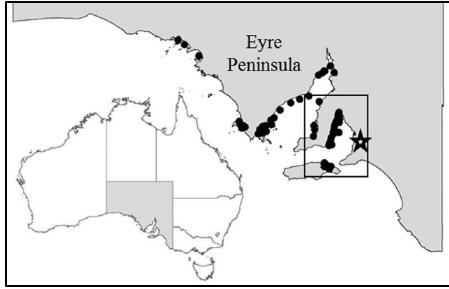


Rebuilding South Australia's lost shellfish reefs

Map of potential shellfish reef restoration locations - Indicative areas only (6 February 2026)



Site selection for 25 sites



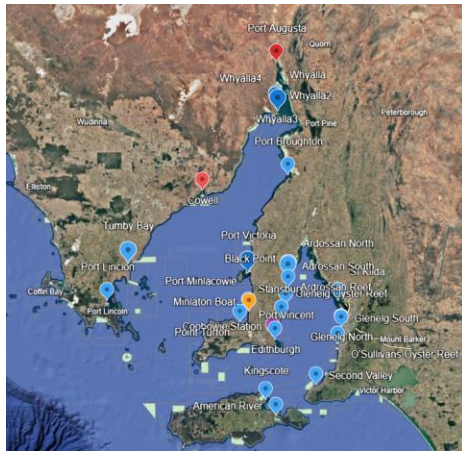
Historical
ecology

Contemporary
data

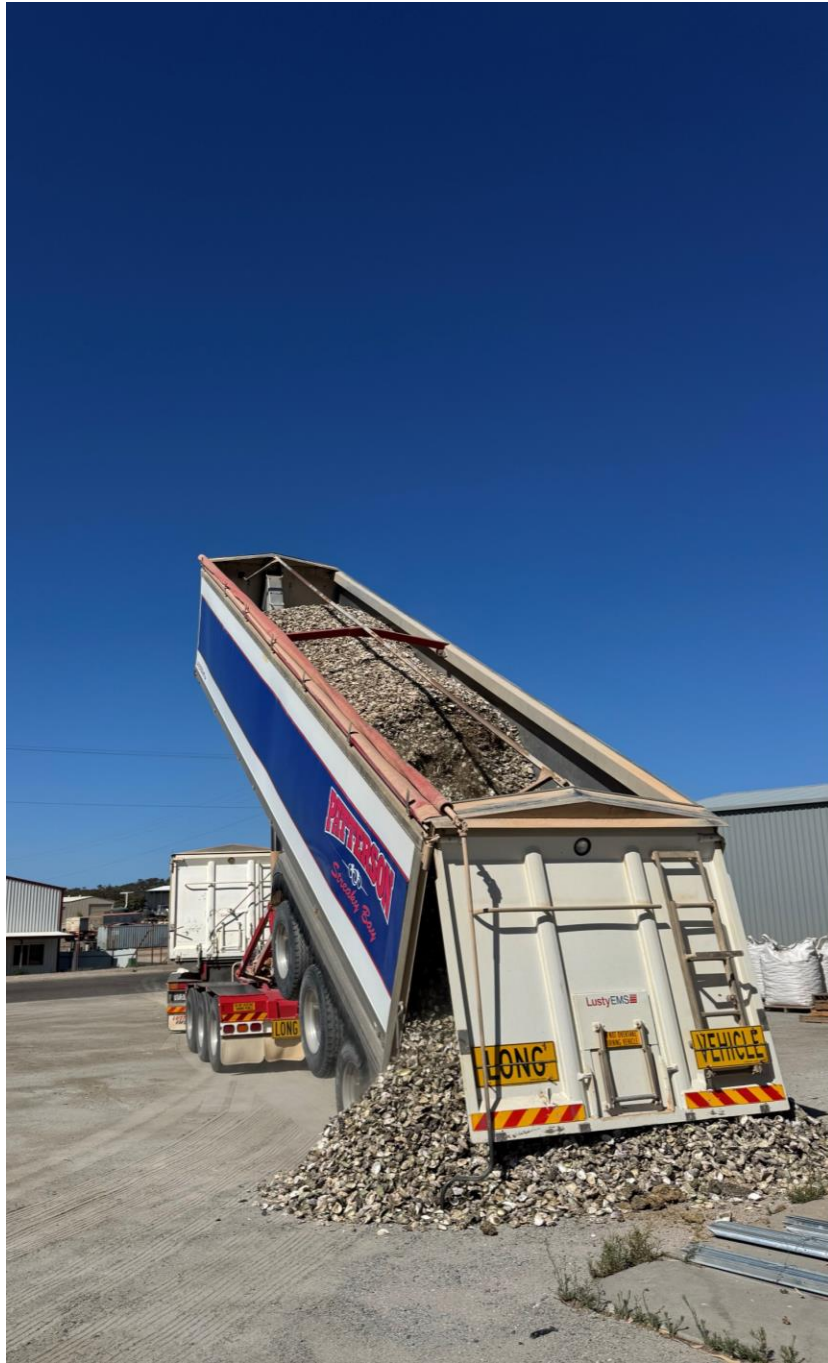
Avoiding SZ &
other habitats

Community
support

Fisheries &
aquaculture



OFFICIAL





TUNA RAMA FESTIVAL

OFFICIAL



Port Lincoln Reef:

- 400 shell bags deployed in January
- Natural recruitment = 698 ± 125 oysters per bag
- Recruits across reef = ~279,600 after 5 months
- Max. oyster size: 33 mm

**Future research questions**

- **Reef design** – height, breadth, undulation
- **Seascape connectivity** – habitat linkages
- **Sensory ecology** – acoustic & olfactory signals

Rebuilding South Australia's lost shellfish reefs

Map of potential shellfish reef restoration locations - Indicative areas only (6 February 2026)

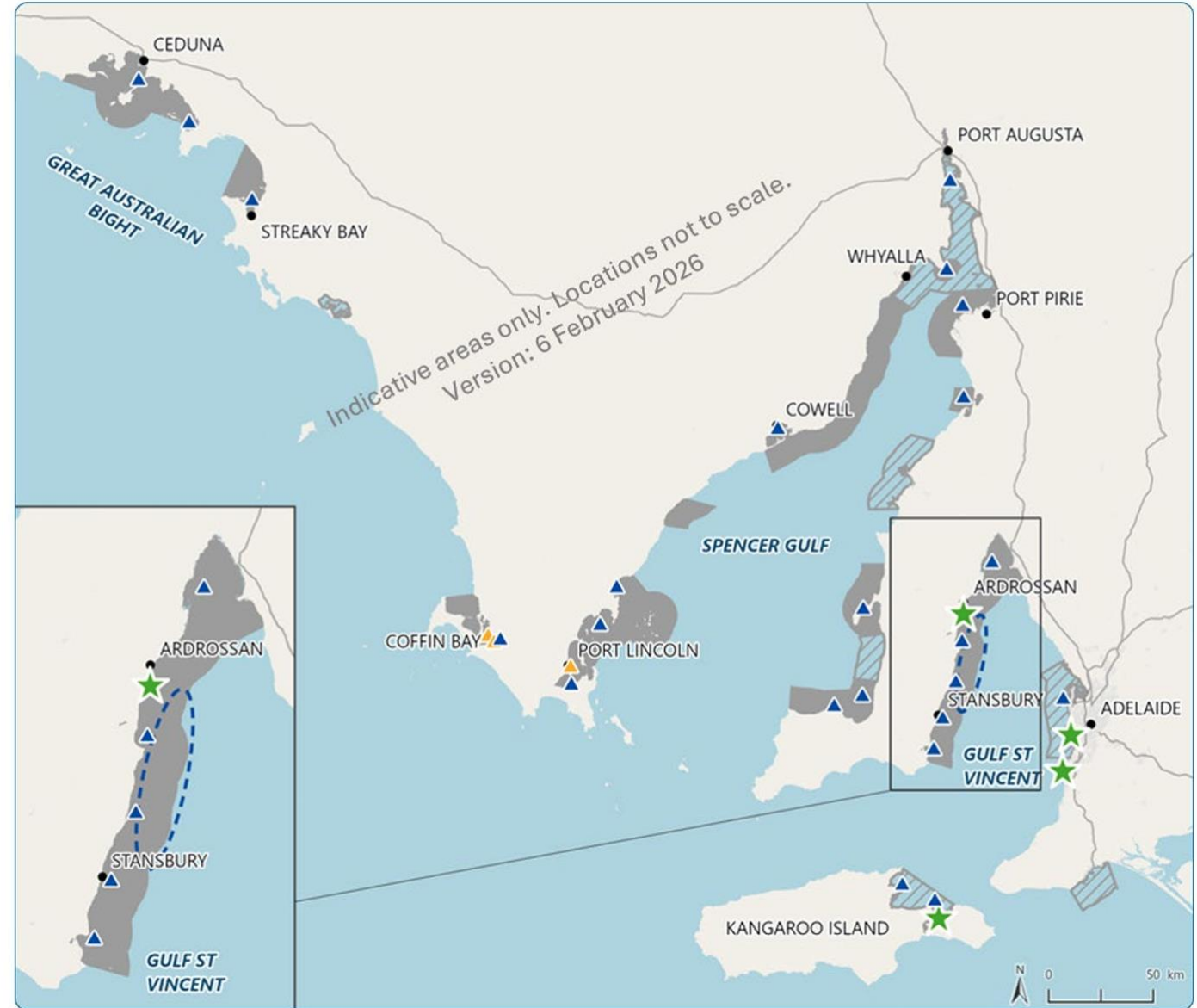
Local people



Local shell



Co-design



Project mailing list for updates:
shellfishreefs@adelaide.edu.au

dominic.mcafee@adelaide.edu.au



Image: Stefan Andrews