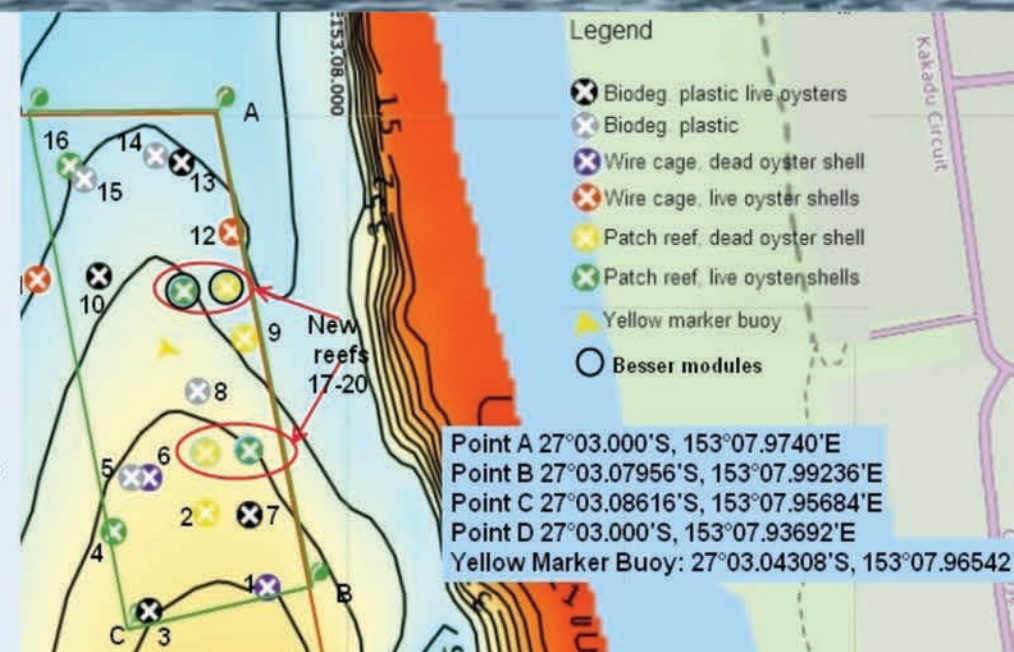


PUMICESTONE PASSAGE

Oyster reef restoration

WHY IS IT IMPORTANT?

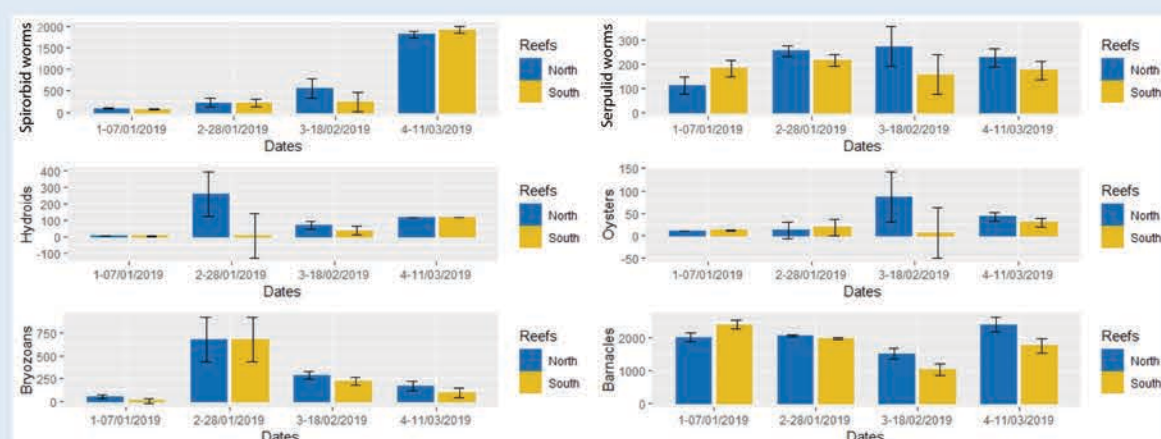
Historically, Pumicestone Passage contained extensive shellfish reefs. These reefs were an important food source for indigenous populations, and, later, for early colonists. However, overexploitation and increased sedimentation heavily impacted oyster populations, and almost no shellfish reefs exist in the passage today. The 'Restore Pumicestone Passage' project aims to restore some of these oyster reefs.



WHAT HAVE WE DONE?

Researchers from Griffith University and the University of Nottingham have joined forces with the 'Restore Pumicestone Passage' team to investigate what animals are settling on the artificial reefs. We evaluated invertebrate settlement on submerged besser bricks, and used genetic techniques to determine exactly which oyster species are being recruited.

SETTLEMENT TRENDS



Settlement trends of various invertebrate groups were generally similar on the northern and southern reefs.

WHAT DID WE FIND?

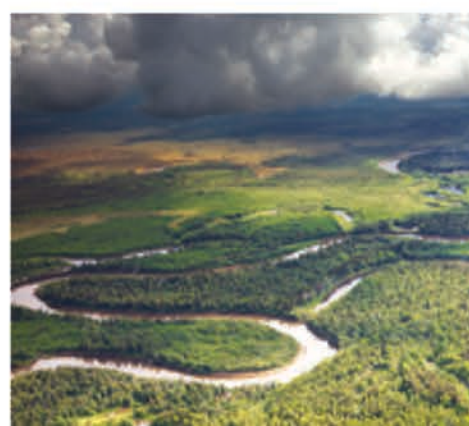
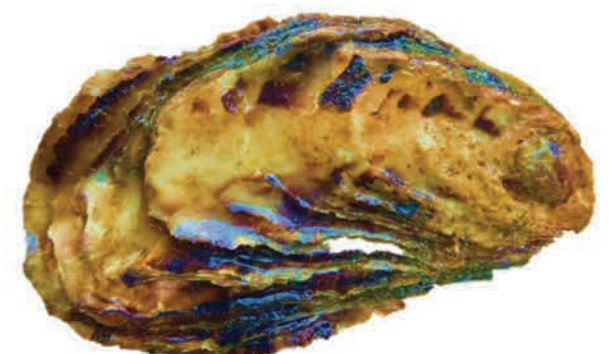
We expected to find settlement of Sydney rock oysters on the reefs, however DNA analysis revealed that the oysters that were settling were from three previously unreported species, despite Sydney rock oysters existing intertidally nearby. No DNA records currently exist for these species, so they may not have been previously described.

Crassostrea sp. ← **NEW OYSTERS FOUND** → *Ostrea* sp.
Dendostrea sp.

CONCLUSIONS AND FUTURE RESEARCH

- The detection of three oyster species that had not previously been sequenced or recognised as components of shellfish reefs highlights how little is known about the invertebrate biodiversity associated with these systems.
- Timing of peak settlement differs for different taxonomic groups.
- Extension of this analysis over a longer period of time and for more invertebrate groups will provide important information about settlement dynamics and the impact of shellfish reef restoration projects.
- Future assessments of shellfish reef biodiversity should include genetic analyses for more accurate species identification.

DANIEL RAMOS GONZALEZ
(Daniel.ramosgonzalez@nottingham.ac.uk)
DR.CARMEL MCDUGALL
(c.mcdougall@griffith.edu.au)
DR.BEN DIGGLES
(ben@digsfish.com)



AUSTRALIAN
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