



NSW GOVERNMENT

S. Chalker

MARINE ESTATE MANAGEMENT AUTHORITY

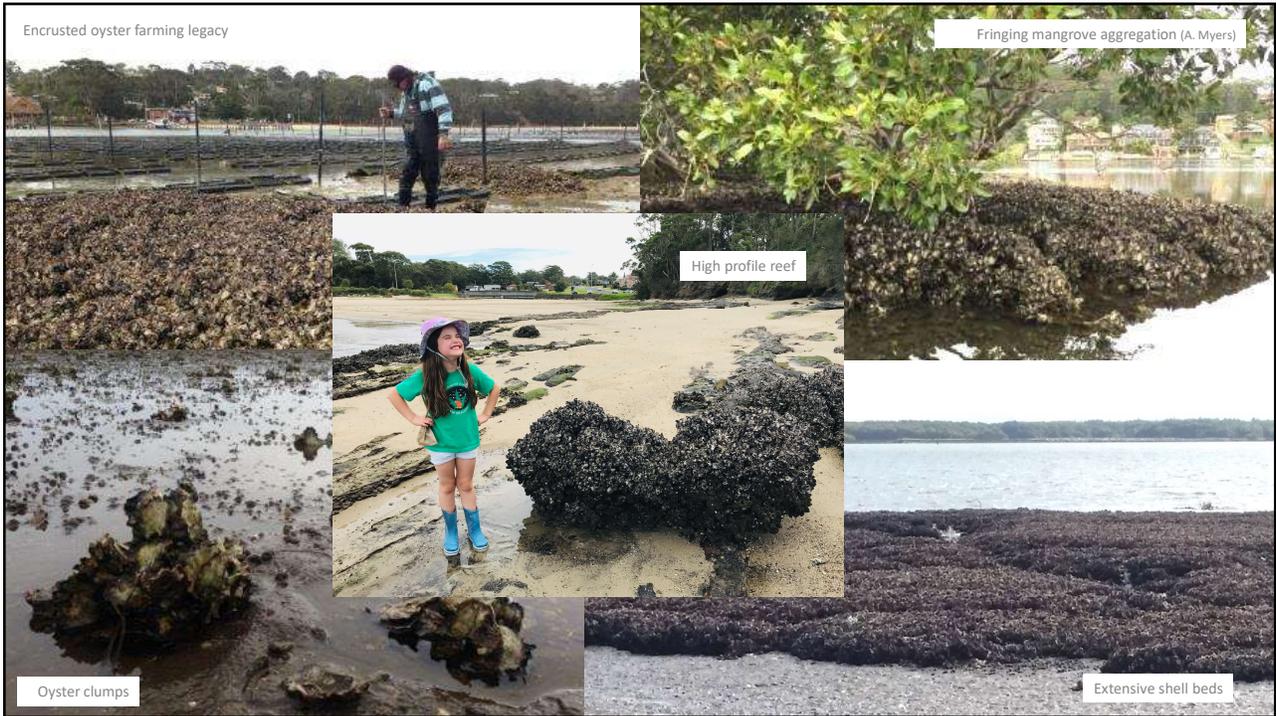
Where there's a WILS there's a way! Innovative coastal management in action

Jillian Keating, Charlotte Jenkins and Kylie Russell – NSW DPI Fisheries



NSW OYSTER REEF RESTORATION PROJECT

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Why are they important? Little creature BIG impact

Protect shorelines **Store carbon** **Clean and filter water** **Absorb nutrients** **Provide food and shelter**

On average a wild oyster filters 2 litres of water an hour. That's nearly 50 litres a day!

Reefs filtering ~7.5 million litres of water AN HOUR **3 Olympic-sized swimming pools**

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What happened to our oyster reefs?

Former extent of shellfish reefs **Former extent of shellfish reefs**

Great Barrier Reef **Great Barrier Reef**

99% of oyster reefs are functionally extinct in Australia. 1% remaining.

Shellfish reefs: Australia's untold environmental disaster

Virtually all of Australia's shellfish reefs have disappeared, making them the country's most threatened and important marine habitats, scientists said Thursday, calling for more in...

- Overharvesting
- Habitat destruction
- Catchment clearing
- Disease
- Land fill
- Water pollution

The loss of our Great Australian Oyster Reefs has been likened to losing the Great Barrier Reef today. Many people are unaware of this loss or the many benefits oyster reefs once provided.

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What is oyster reef restoration?



- Reintroduction of hard substrate
- Known good levels of natural spat-fall (usually)
- Formation of a self-sustaining complex ecosystem forms and ecological function

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What is happening in NSW?

- **Large-scale shellfish reef restoration trials** – different areas, techniques, species
- **Addressing the knowledge gap** – regulatory pathway, science, mapping, history, cultural value, community
- **Engaging the community** and building social licence
- **Building capacity of future practitioners** – Guidelines, “How to” factsheets for CMPs, mapping



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NSW's largest restored oyster reef – Port Stephens



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NSW's largest restored oyster reef – Port Stephens

RESULTS STAGE 1&2: December 2019 – December 2021

Marine Estate Management Strategy

Port Stephens Shellfish Reef Restoration

Delivering the first large-scale shellfish reef restoration project in NSW

Located in two remote parts of the Port Stephens-Great Lakes Marine Park in the traditional lands of the Worimi people, the shellfish reef restoration project aims to restore natural shellfish reef habitat, enhance water quality and boost local fish numbers.

Over **55 Million** BABY OYSTERS naturally recruited in the first **2** years

Oyster recruits **3/4** the size of wild adult oysters after only **22** months

34 DIFFERENT FISH SPECIES

Equal to that seen of natural reefs

Reefs filtering **~ 7.5 million litres** of water AN HOUR

50 X more JUVENILE FISH of NEW REEFS compared to bare sand habitat

New habitat for over **8 Million** crabs and other invertebrates

Nearly \$1.5M* total project delivery

7.5 ha or **11** soccer pitches of SYDNEY ROCK OYSTER REEF created

159 days reef construction

5+ LOCAL construction positions created by the project

35+ STAKEHOLDERS DIRECTLY and **75,000+** INDIRECTLY ENGAGED in the project

3,215+ hours of MONITORING the new reefs and analysing the results

Brent Hancock
Local recreational fisher and tackle store owner

Don Burgoyne
Local oyster farmer

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*This shellfish reef restoration project was funded by the NSW Marine Estate Management Strategy in partnership with the Australian Government's Reef Builder initiative which aims to protect and restore 13 shellfish reefs across Australia.
Rings and Bridge image: Jay Mearns. All other images, football and pool icons: NSW DPI. All other icons: iStock.com
Reference: 01/22/2024

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NSW's largest restored oyster reef – Port Stephens



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Wagonga Inlet Living Shorelines (WILS)



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Wagonga Inlet Living Shorelines (WILS)



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WILS – Intertidal reef & First subtidal reef for NSW!

INTERTIDAL OYSTER REEF

- Species: Sydney Rock Oyster
- Depth: intertidal
- Area: ~0.3ha total
- Patches of reef to be interspersed with seagrass

SUBTIDAL OYSTER REEF

- Species: Angasi Oyster
- Depth: subtidal (~7m)
- Area: ~0.1ha total area
- 6 patches with terracotta pipes for juvenile Black Rock Cod habitat

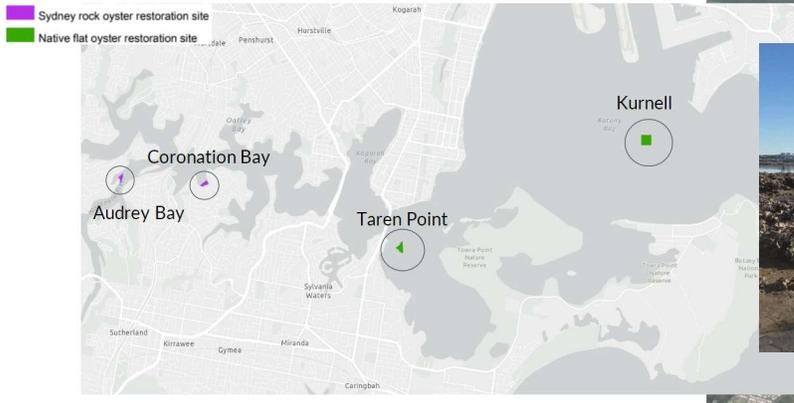


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Botany Bay

RESTORATION SITES



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Hastings and Richmond Rivers

HASTINGS

- OWA leading with support from LLS
- DA to be submitted to Port Macquarie Hastings Council
- DPI – monitoring & evaluation

RICHMOND

- OzFish leading
- DA to be submitted to Ballina Council

Sandfly Alley - Riverside NSW 2444
31°24'16.2"S 152°53'20.1"E



Legend
 - - - - - Erosion Control
 Riparian Restoration Area
 Oyster Reef



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Knowledge gathering – research, mapping, community & industry

Shellfish Reef Reporter - NSW

Department of Primary Industries

Have you seen shellfish reefs in NSW?
 The NSW Shellfish Reefs Program (NSW Shellfish Reefs Program) is a collaborative effort between the NSW Government and the shellfish industry to create and maintain shellfish reefs. The program aims to improve the health and productivity of shellfish reefs and to provide a sustainable source of shellfish for the NSW shellfish industry.

Where did you see the shellfish reef?
 Please select the location of the reef. You can also select the location of the reef on the map. Please select the location of the reef on the map.

Where is the reef located in the estuary?
 Please select the location of the reef in the estuary.

Wagonga Inlet

OBJECTID	2
Estuary	Wagonga Inlet
Region	Southern
Source	NSW aerial 20/01/2010 (east) 08/01/2014 (west)
Scale	1:500
Verified	JK 2020
Comments	
Reef Type	high profile 0.15-0.5m
Estuary	independent (island)
Location	
Settlement	unknown
Substrate	
Zoom to	

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Knowledge gathering – Historical information & Cultural values



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Engaging the community, building social licence & practitioner capacity



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What's next in NSW?



- Trial other on-ground works - WILS 'living shoreline', new techniques & species e.g. leaf oyster
- Expand research & policy e.g. new research collaborations, projects
- Further integration of cultural connection to oyster reefs
- More community education & awareness e.g. citizen science, Museum and Aquarium exhibits

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Thank you for your time!



Questions?



NSW OYSTER REEF
RESTORATION PROJECT

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marine.nsw.gov.au/projects/oyster-reef-restoration

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