

Making modern middens.

Queenslands first Oyster Recycling Initiative.



Ben Diggle (DigsFish Services)

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www.digfish.com

What is Oyster Recycling?

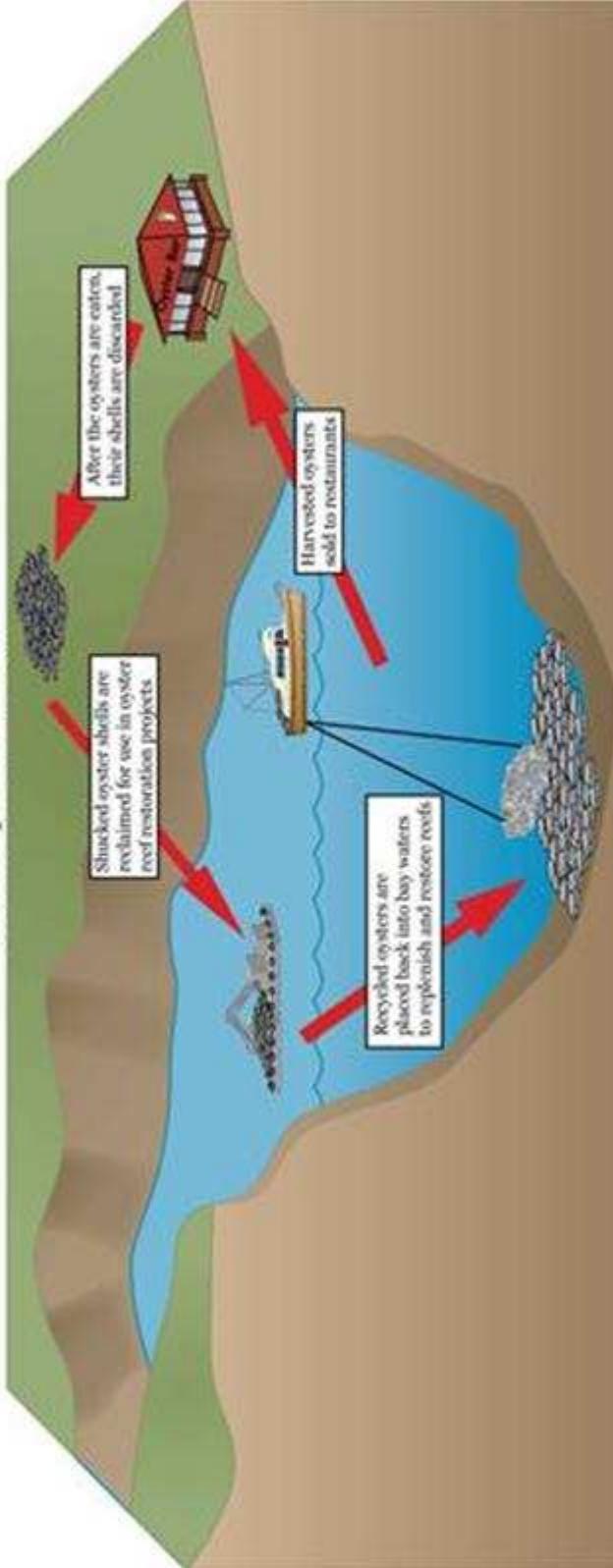
- Used overseas to help generate shellfish substrate for shellfish reef restoration
- Intercept oyster shells from landfill – place in sun to dry out / kill pathogens / epibota
- After >3 months, pressure wash/clean
- Bag up and move out onto restored reefs
- Planktonic oyster spat attach and restart reef



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What is Oyster Recycling?

Oyster shell recycling:
How the process works



Oyster shell collection bins, such as this one at Wrightsville Beach in New Hanover County, are used where shells are collected in amounts

CLOS

Oyster recycling in QLD

- Recycling oyster shell has been done for thousands of years by indigenous groups and oyster farmers to regenerate oyster growth.
- Dried shells placed back in water at right time of year attract planktonic oyster spat which settle on clean oyster shells (via chemical signalling).
- However, the process of recycling oyster shells was made illegal in QLD under the Waste Reduction and Recycling Act 2011.
- Example of “unintended consequences” as legislation was drawn up to control coal seam gas fracking water (amongst other things).

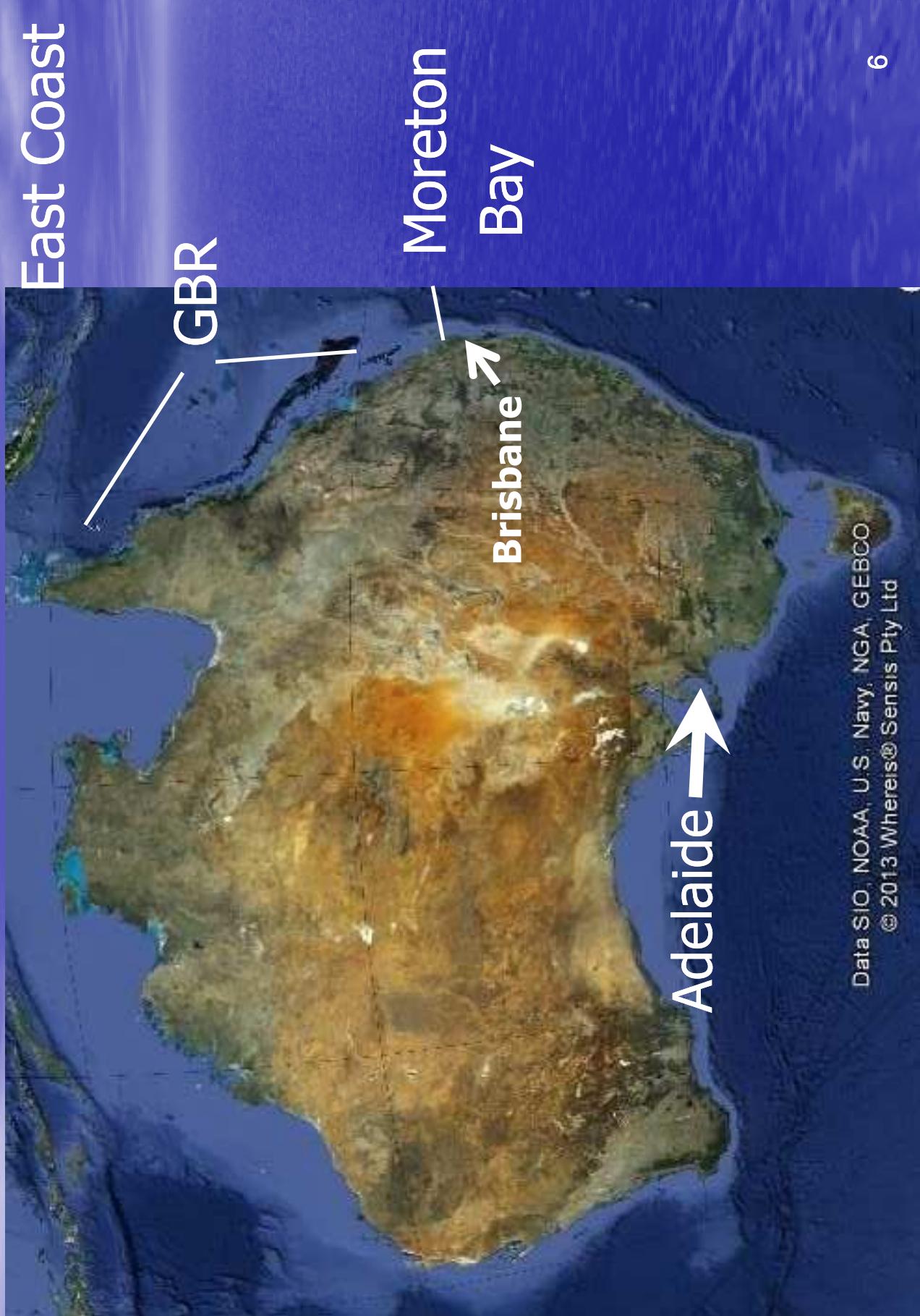


Oyster recycling in QLD

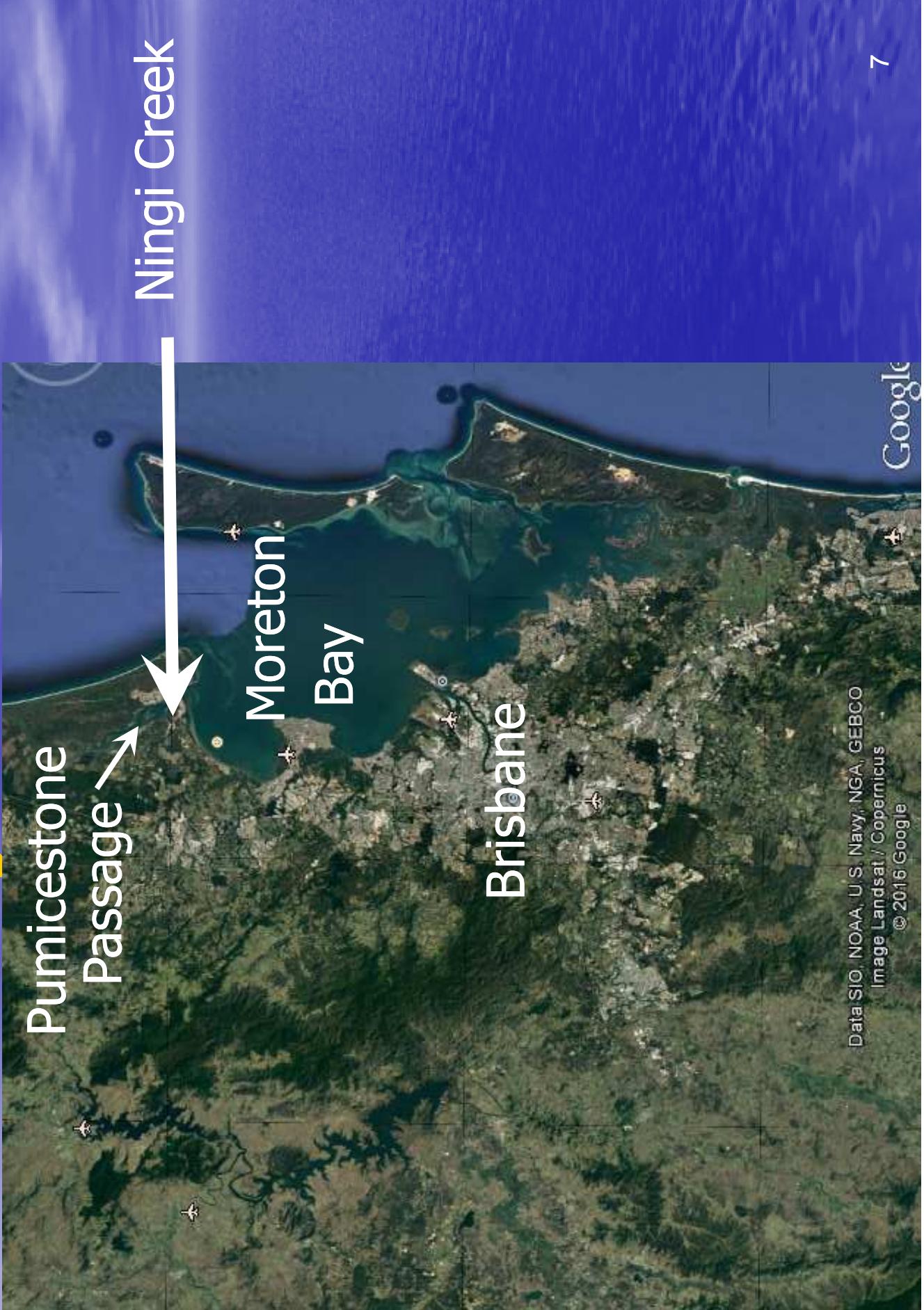
- “Beneficial use application” needed to be developed to allow oyster shells to be recycled.
- Application process started July 2016, \$2500 fee paid, process completed December 2016, \$2500 fee reimbursed.
- Site for recycling centre identified at Ningi Transfer Station. Lease and support provided by MBRCC.
- Ningi Ningi = Aboriginal word for “place of plenty of oysters”
- Ningi appears an entirely appropriate place to re-establish “modern middens”



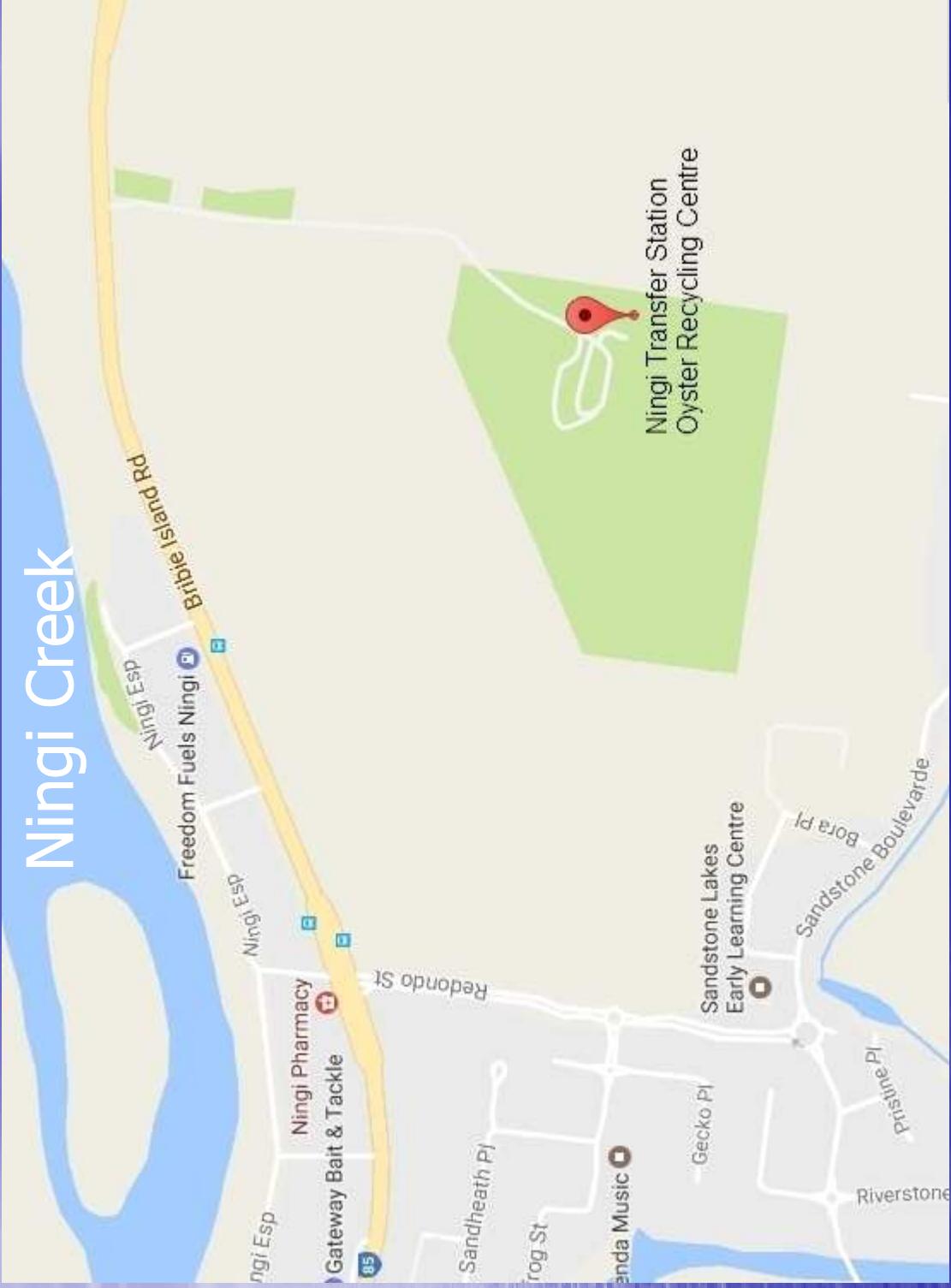
Ningi Transfer Station – Moreton Bay



Ningi Transfer Station



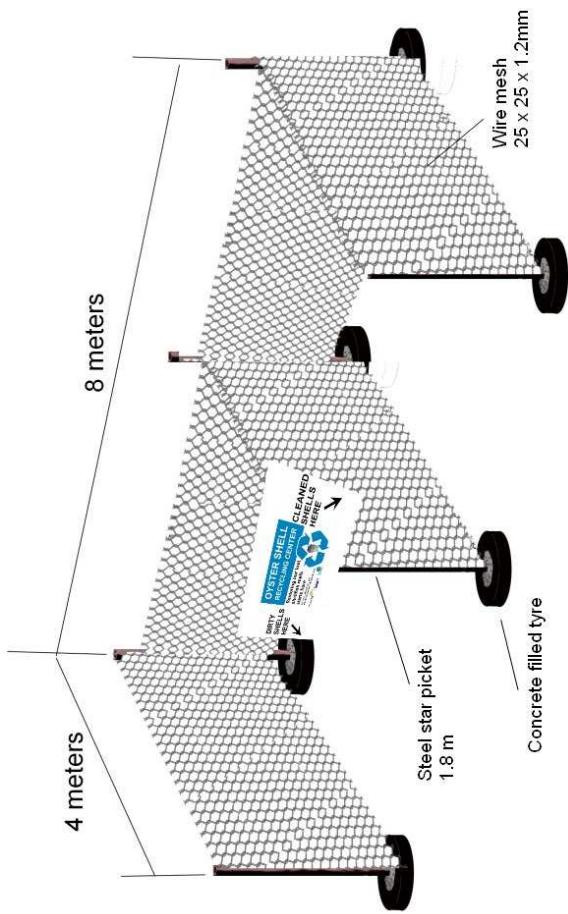
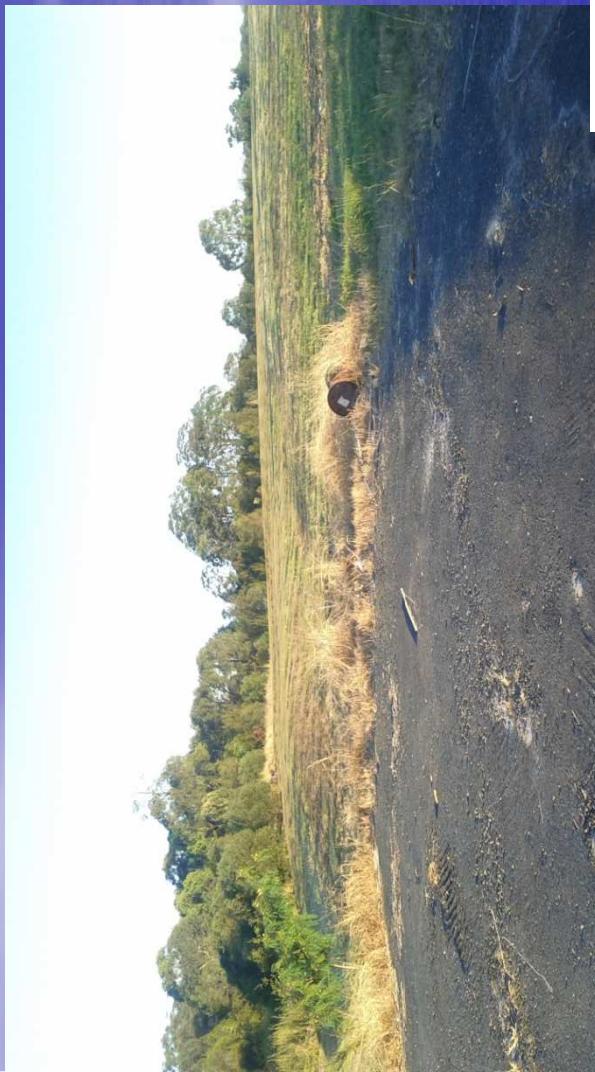
Ningi Transfer Station



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Ningi Transfer Station - Timeline

← 30 May 2016

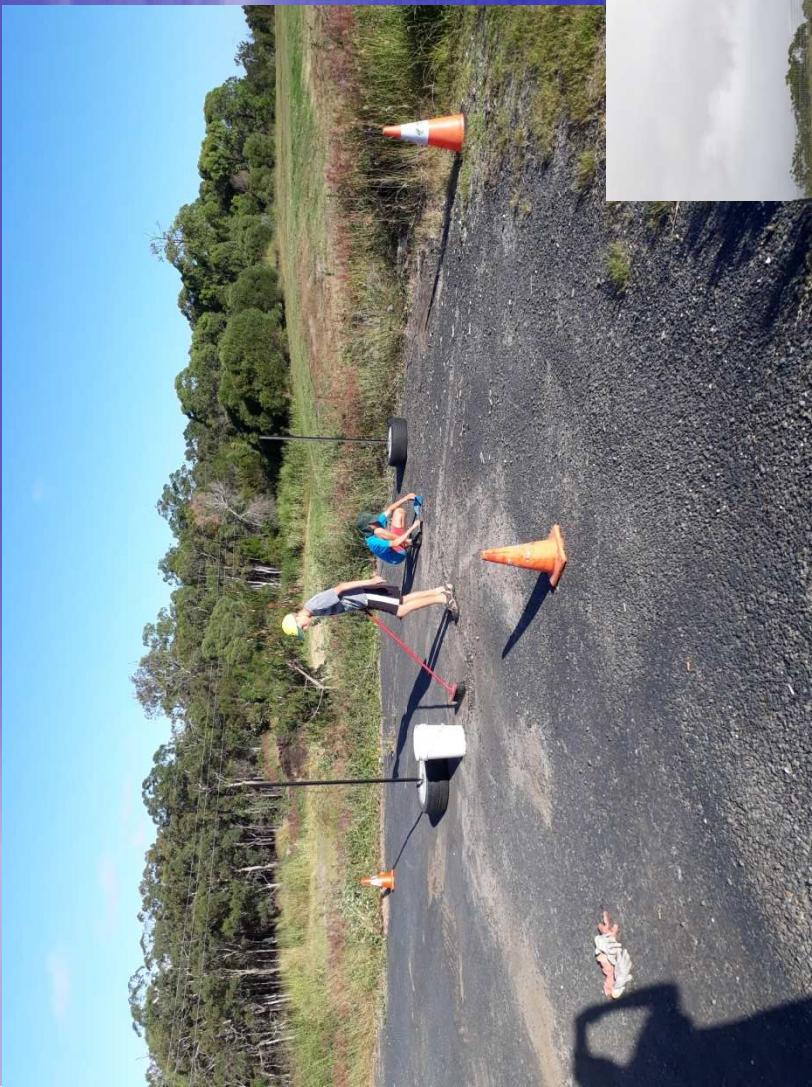


Design June 2016 →

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SER

Ningi Transfer Station - Timeline

← 6 May 2017



→ 13 May 2017

D_s

Ningi Transfer Station - Timeline



← 18 May 2017



26 May 2017 → D

Shell recycling – engage local community Signage



Shell recycling – engage local community

bribeweekly.com.au Friday, July 1, 2011

New life for oyster shells

Recycling program a first for Qld

MORETON BAY region is set to become home to Queensland's first shell recycling program.

Bribie residents can now drop off oyster shells at Savigne's Seafood, Sylvan Beach Seafood Cafe or the Sandstone Point Hotel, as well as directly to the recycling centre at Ningaloo Transfer Station.

Marine biologist and project manager Ben Diggles is working with local restaurants to help roll out the project.

"This new plan aims to decrease and possibly eliminate the threat of transferring pacific oyster mortality syndrome into the region's shellfish populations.

Dr Diggles said it was a highly contagious herpes-like virus that could infect not only oysters but also scallops, clams and mussels.

"The virus multiplies and causes mass mortalities once water temperatures increase above 20 degrees from winter lows," he said. Dr Diggles said the oyster



PHOTO: CONTRIBUTED

can get started with actual restoration.

"Each oyster shell recycled and placed back into the water at an appropriate location at the right time of year can form a new home for up to 10 new baby oysters."

everyone can contribute to restoration of a critical missing link in the local marine environment," he said.

"The more people who help, the faster we can accumulate shells for reef substrate and the sooner we

"They will then be pressure-washed with fresh water to clean them before being bagged and readied for placement back into the water."

Dr Diggles said the help of local residents was critical.

"Through shell recycling, shell recycling program was the only way to remove the threat of the virus.

"They are dried out first in the sun and rain for a couple of months, which kills off any diseases or pests that may be on or in the shells," he said.

HELPING HANDS: Jy Raleigh, Jamie Diggles and Harvey Sheppard show that oyster recycling is something the whole community can get behind.

Shell recycling – engage local community

Oyster
collection
roster –
OzFish
Unlimited
volunteers



Shell recycling – engage local community

Modern middens



Indigenous elder
Fred Palin

Shell recycling – engage local community

People will buy in



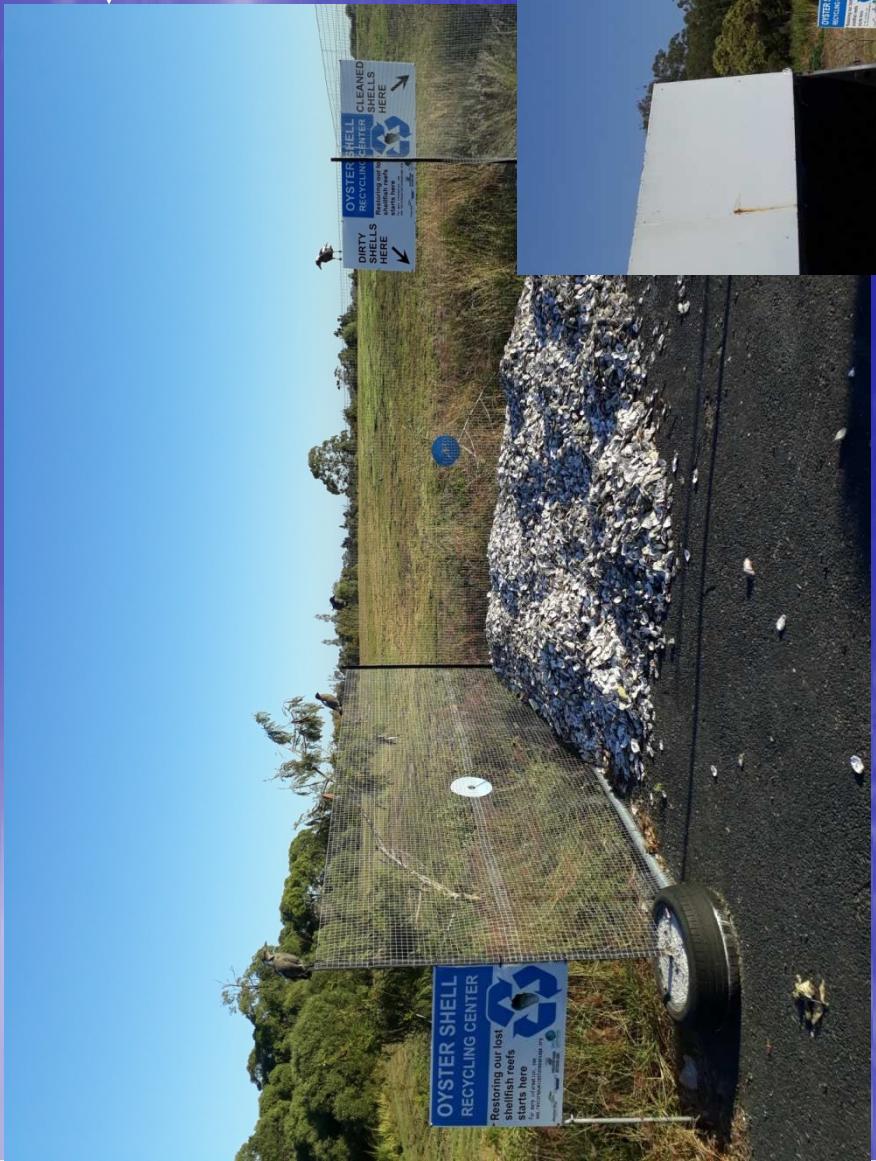
Open your facility

← 9 July 2017 →



Collect your shells

← 30 July 2017



22 August 2017 →

D_S



Collect your shells

31 Oct 2017



16 Nov 2017 →

Biosecurity – Shell Turnover

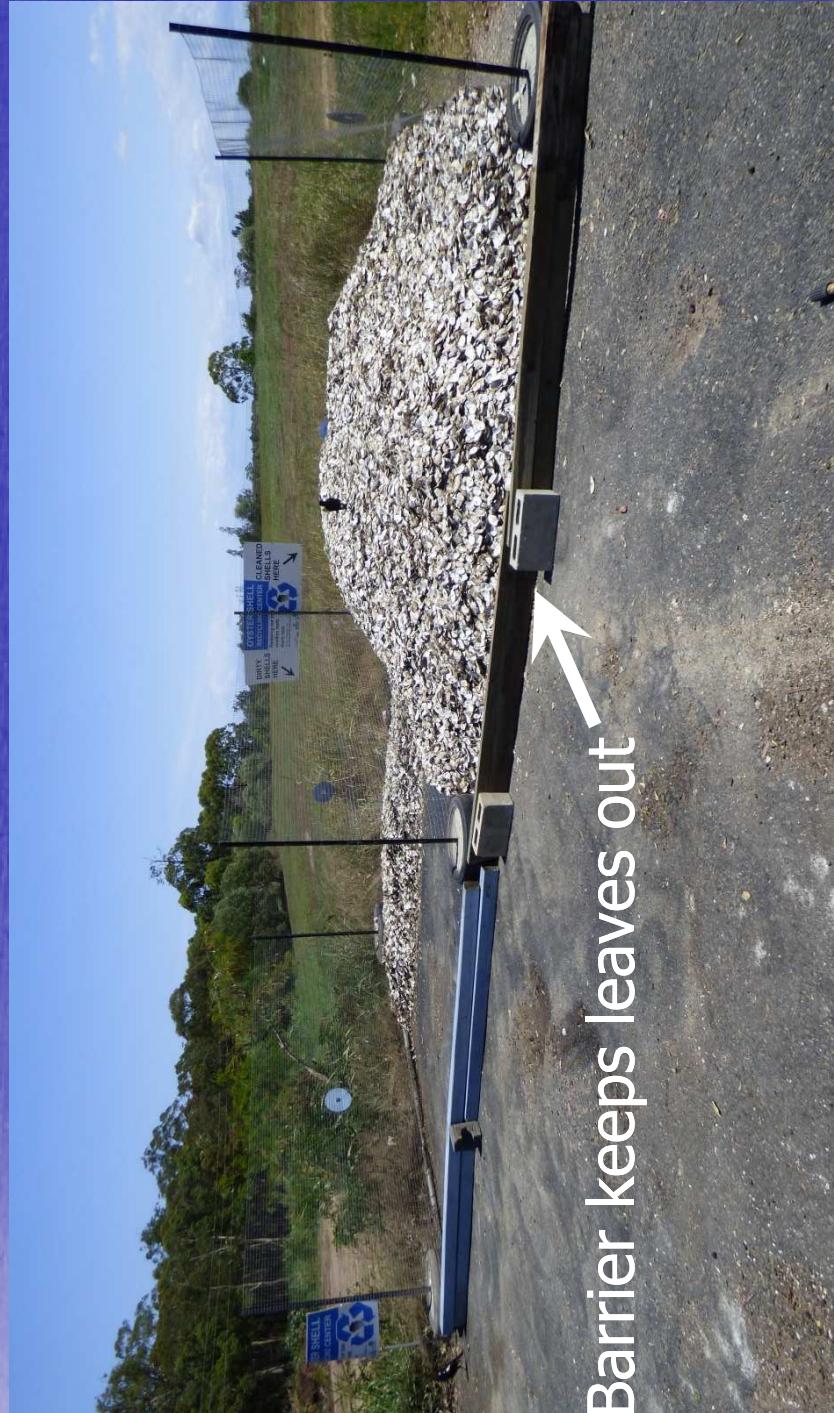
◀ 16 Nov 2017



16 Nov 2017 →

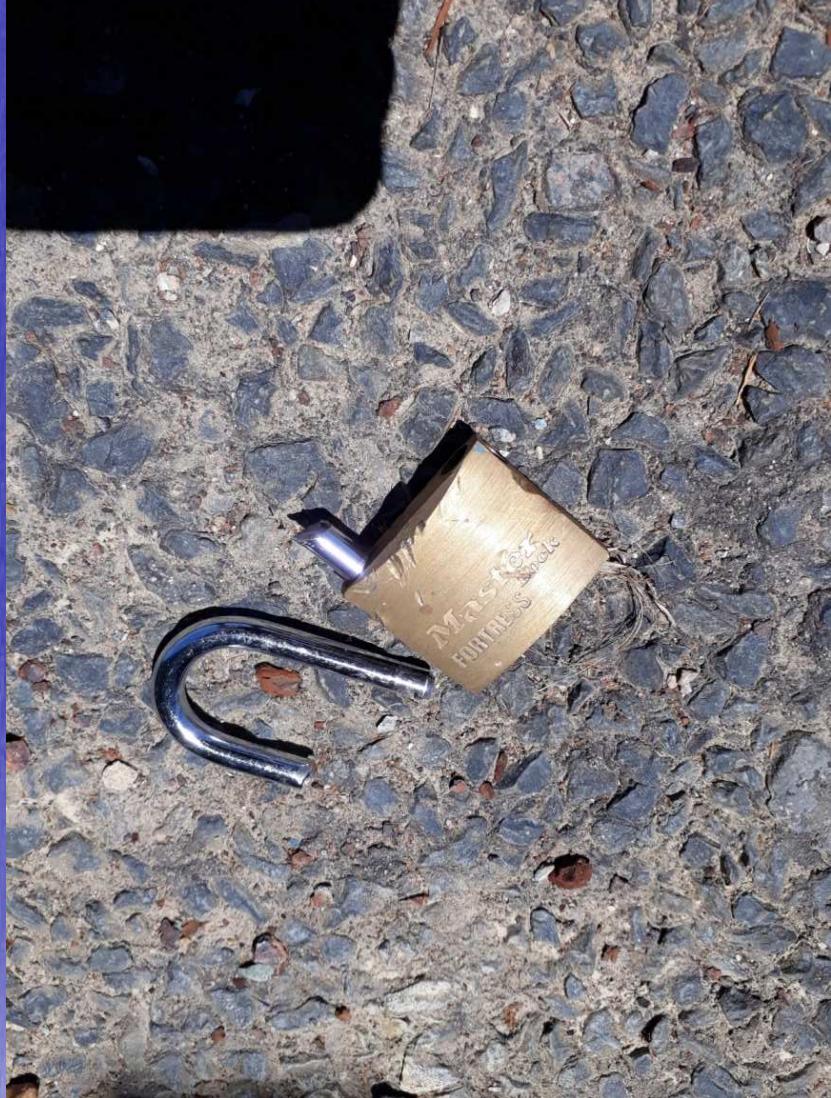
Biosecurity – Shell Turnover (QLD)

- minimum 3 months drying in sun required to eliminate all known pathogens and pests
- Turn over shell >once and high pressure wash
- Keep dirty shell separated from clean shell



Other types of security

- Use of public spaces (dumps, recycling centres) useful to minimise smell/vermin
- However, theft/break-ins can be problematic
- Use high quality locks on storage facilities



Prepare shell for deployment

7 Dec 2017



7 Dec 2017

Deploy your shell !

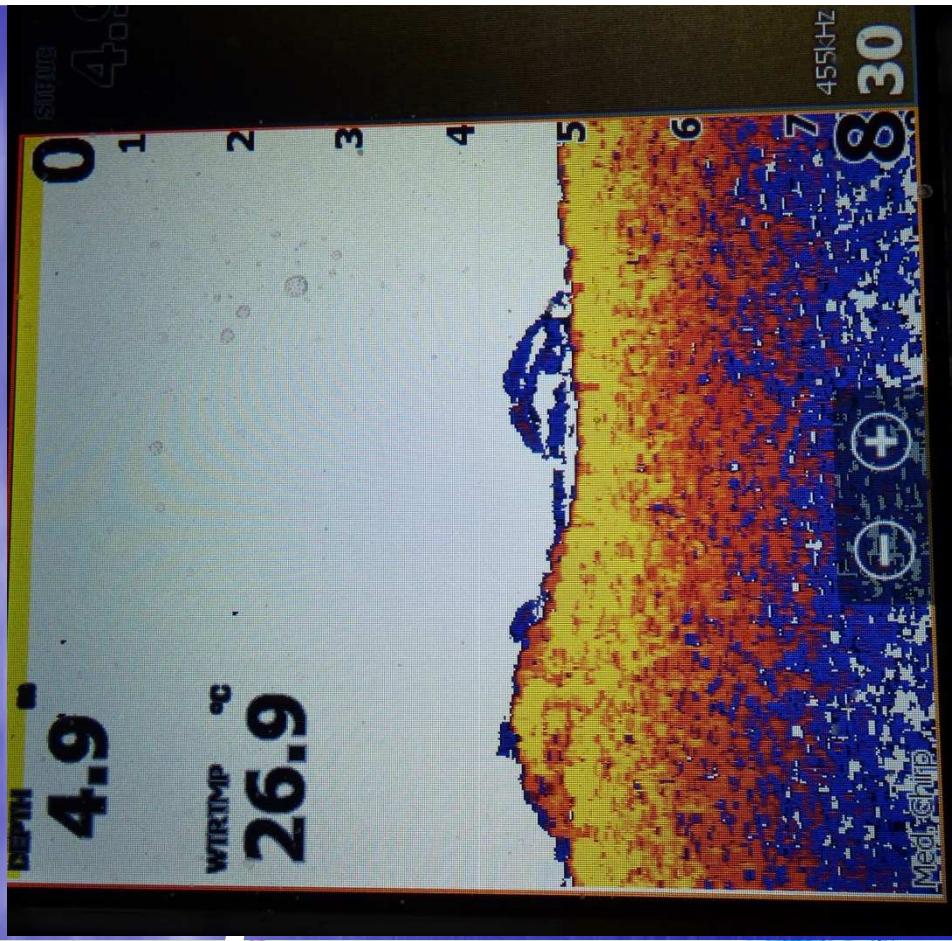
→ 12 Dec 2017



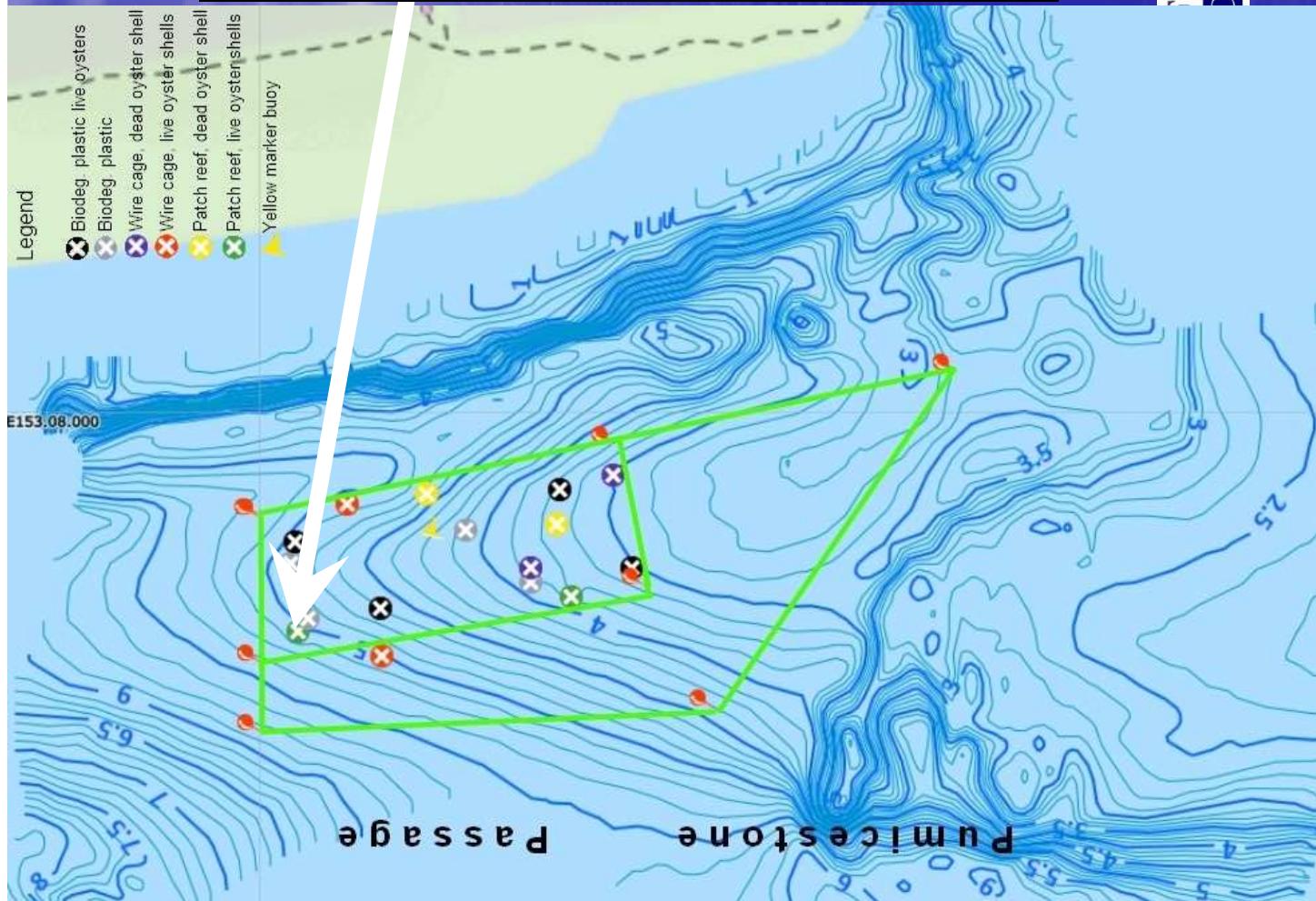
12 Dec 2017 →



Monitor your shell!



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Enjoy your shell !

Healthy Oyster Reefs = Happy Fishermen

Fully functional underwater marine habitats associated with healthy oyster reefs lead to higher yields of fish and crab for commercial and recreational fisheries.

#oysterlove



Data Source: Journal of Applied Ecology

Questions?



Thanks to:

Pumicestone Passage Fish Restocking Association
Moreton Bay Regional Council
OzFish Unlimited volunteers