

OzFish Unlimited – Nature-Based Solutions



What is OzFish?

Riparian Planting & Weed Control



Seagrass Restoration



River Re-Snagging & Fish Hotels



Fish Safe Irrigation Screens & Fish Passage Barrier Removal



Millions of fish
are killed
every year
when sucked
into irrigation
systems like
this one



Fish Rescue Clean Ups Fishing Equipment Recycling



Saltmarsh & Mangrove Restoration



Shellfish Reefs Australia's most threatened marine ecosystem



Gladstone Harbour

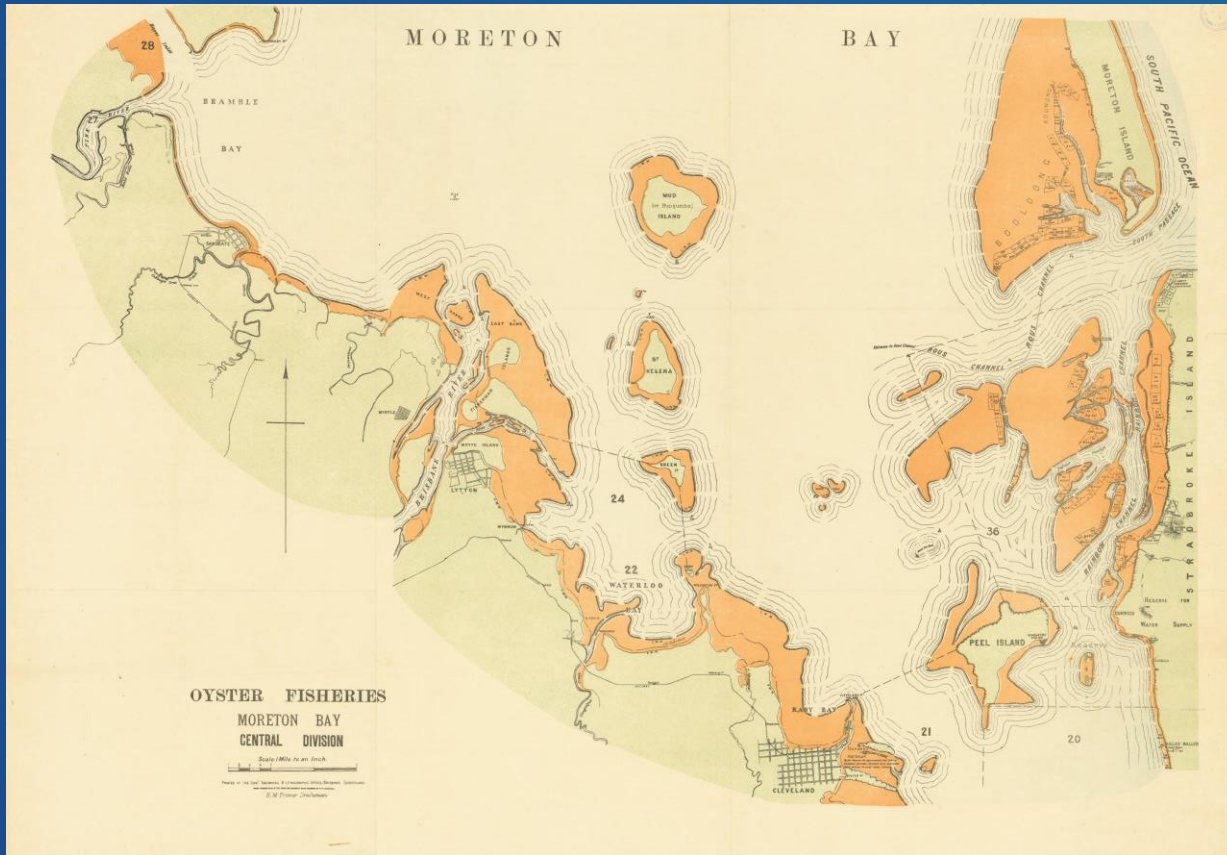


Turkey Beach

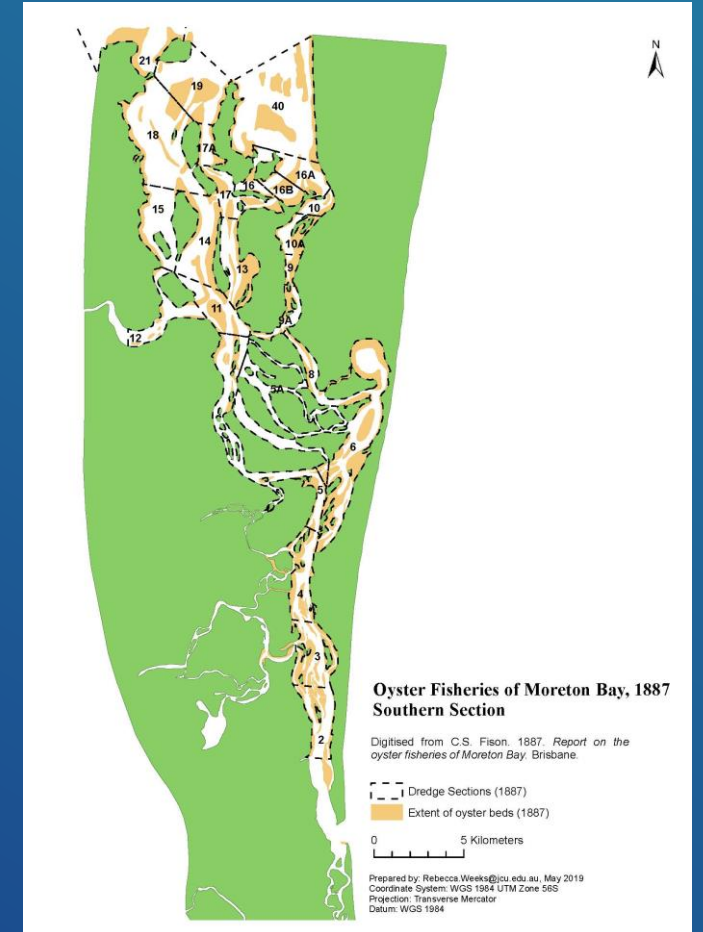
Shellfish Reefs



What we once had



Intertidal shellfish reefs



Subtidal shellfish reefs

Why did we lose them and why haven't they come back?

- Overfishing for food
- Over harvesting for lime
- Floods
- Pollution



Why do we what them back?

Water Filtration



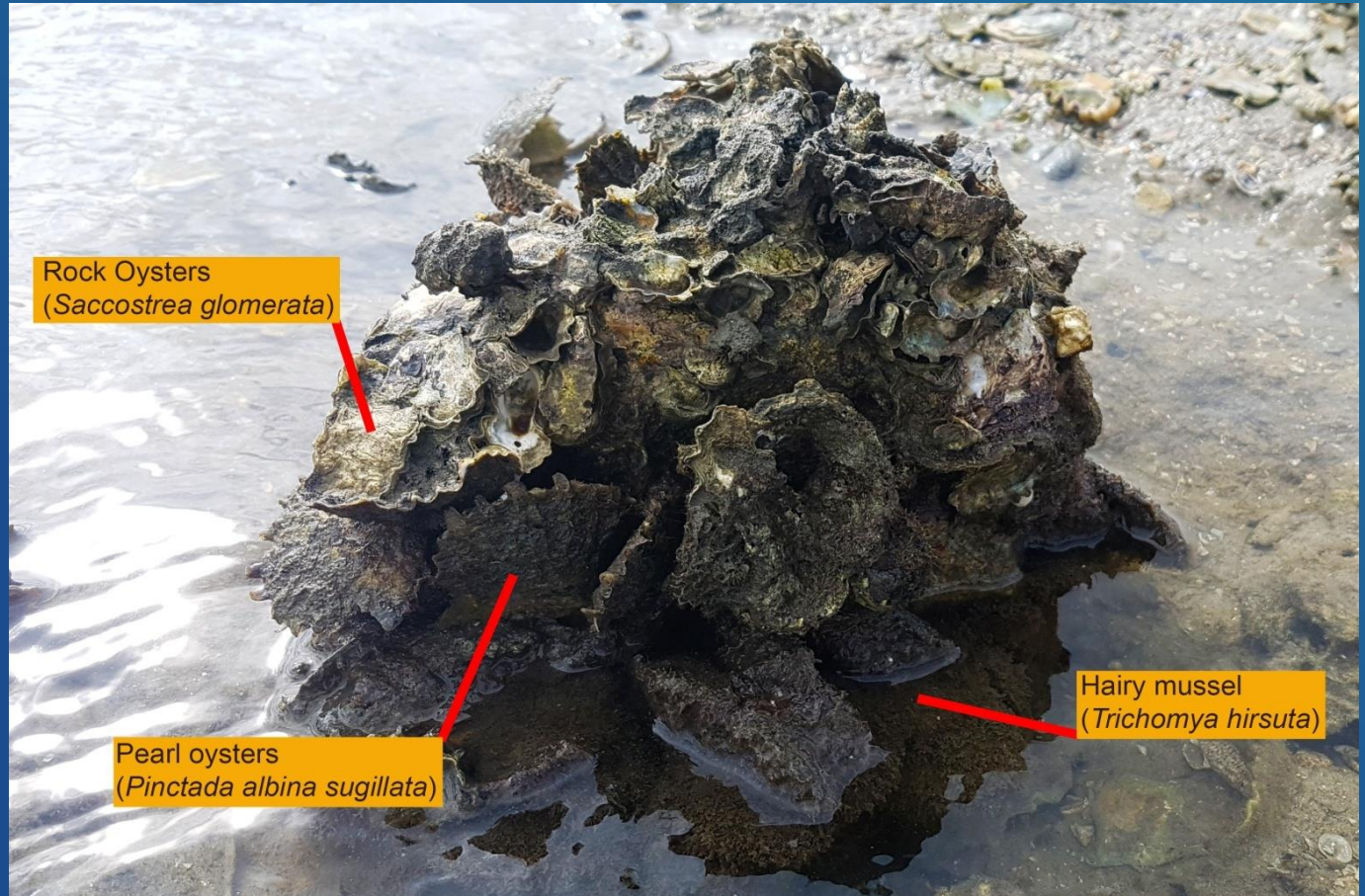
Biodiversity and Fish Production

Homes for millions of animals including crabs, worms, snails and prawns.

Fish making machines



Shellfish Species



Existing Reefs in Quandamooka (Moreton Bay)



Myora



Darling Point



Pumicestone Passage

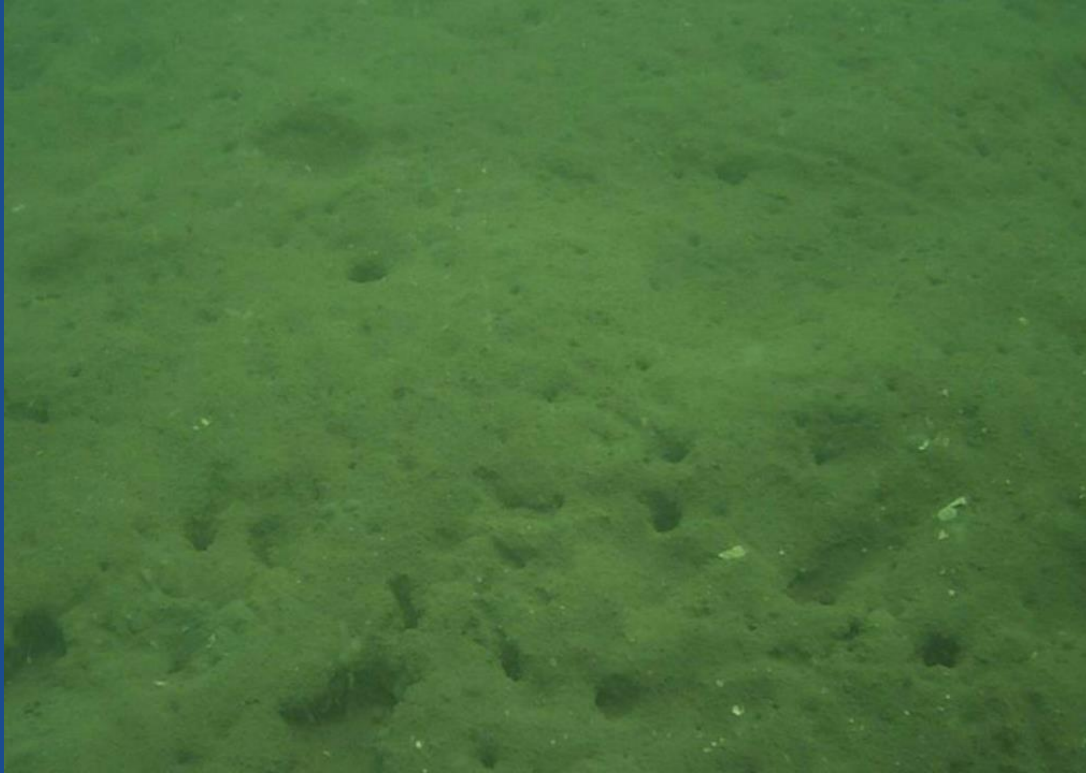


Oyster Point Wynnum



Green Island

How do we go
From This



To this?



Oyster Shell as Substrate

- Chemical signature
- Recycled material



How to use best use Oyster Shells?

- Inspiration came from seeing oysters clumping due to poor farming practices.
- Good clumps formed resembled existing and remnant reefs in Quandamooka



OzFish Delivery Methods

Robust Oyster Baskets ROBS
Quilted Oyster Doona – QOD
BESE Bags



ROB 400



BESE Bags



ROB 1,000



QOD

Robust Oyster BasketS – ROBs



Robust Oyster BasketS – ROBs



Robust Oyster BasketS – ROBs



Robust Oyster Baskets – ROBs

- First Nation inspired design
- Great reef-forming shellfish recruitment
- Basket holds until shells are cemented together
- Fast recruitment of other animals
- Wind and wave resistant
- Recycled shells give high complexity
- Good for community members to carry



Bese Bags – BESSIES



Quilted Oyster Doonas – QODs



SEQ Community Involvement

Volunteer hours – OzFish Central Moreton Chapter

2023 – (9 months only) **5,345**

2022 – 5,717 hrs

2021 – 5,733 hrs

2020 – 2,874 hrs

2019 – 2,008 hrs

2018 – 1,805 hrs

Total – 18,137 volunteer hours logged since 2018

Individuals Volunteers – 826

Reefs deployed – 6,465

Shell recycled – 650,000 kg



Volunteer made Reefs



IONA College



Community Built



TSS Marine Students

But... do they work?



Reef Comparison



Remnant Reef at Gladstone



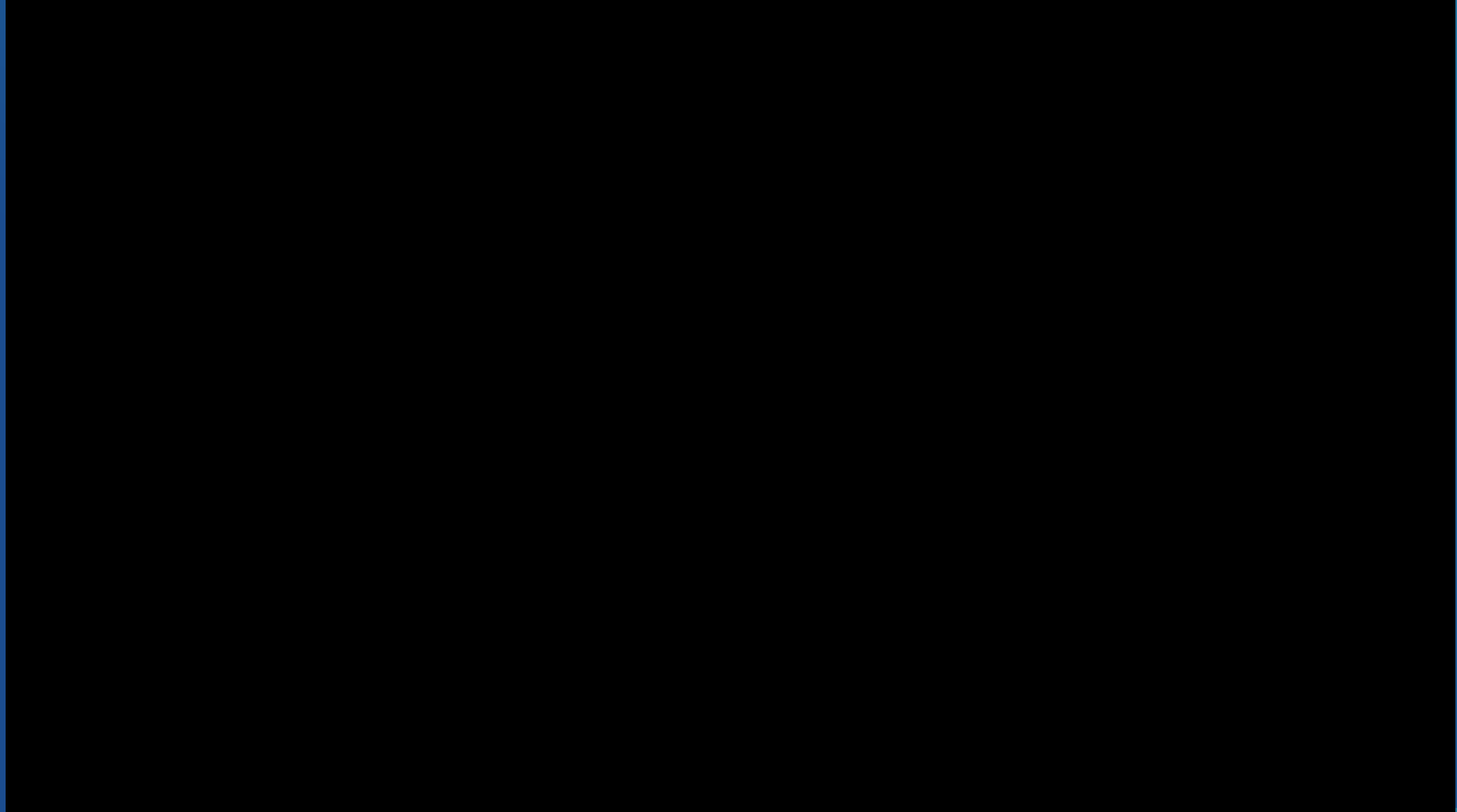
3-year-old OzFish Reef

Do they have the ecological functions of a shellfish reef?

- Habitat
- Filtration
- Shellfish species
- Mobile invertebrate species
- Benthic species
- Self sustaining
- Continued accretion



Proserpine River



Weipa



Mapoon



Fisher Science

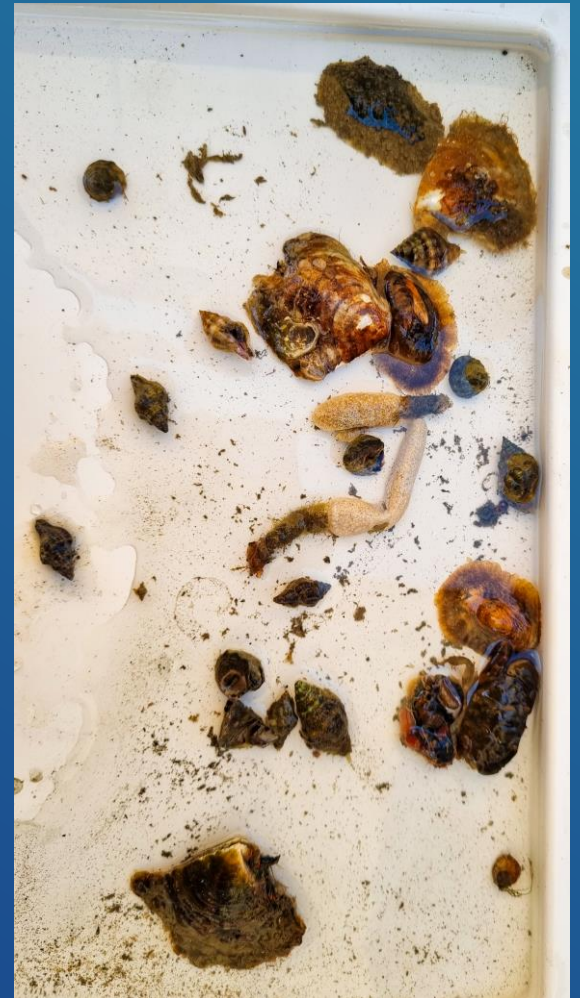


University Support

- Griffith
- UQ
- USC



Destructive Surveys



Griffith University ROB Destructive Survey

Number of shellfish per ROB (average):

Subtidal = 626

Intertidal = 2536

Number of other animals per ROB (average):

Subtidal = 1120

Intertidal = 748



Subtidal

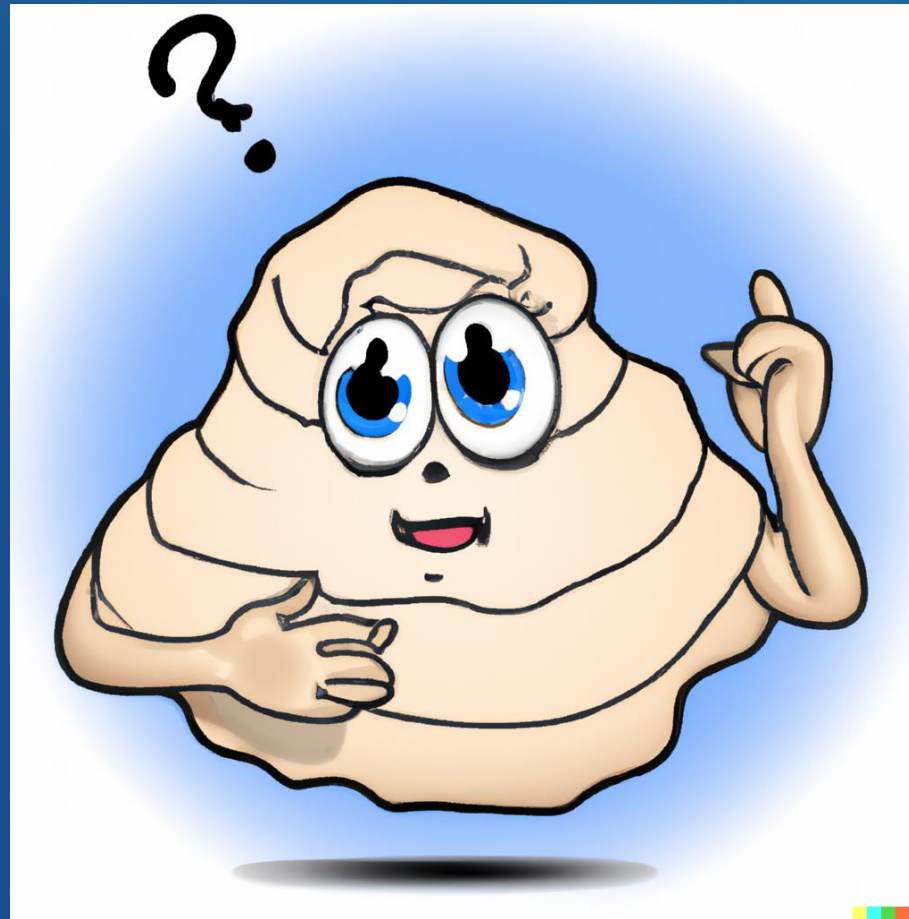
Intertidal

UQ Filtration Survey

2-year-old ROBs
filter
90 to 145 Litres of
water per Hour



So, what does that mean for biodiversity and water quality?



OzFish volunteers have deployed over 6,700 reefs in Moreton Bay



- 4.2 Million Additional Shellfish
- 7.5 Million Additional Invertebrates
- 181 Ton of additional biomass
- 775,100 Litres of Seawater filtered per Hour
That's 6.78 Billion Litres every Year
- 25 Tons of additional harvestable fish per year forever

Can OzFish provide nature-based solutions for your project?



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