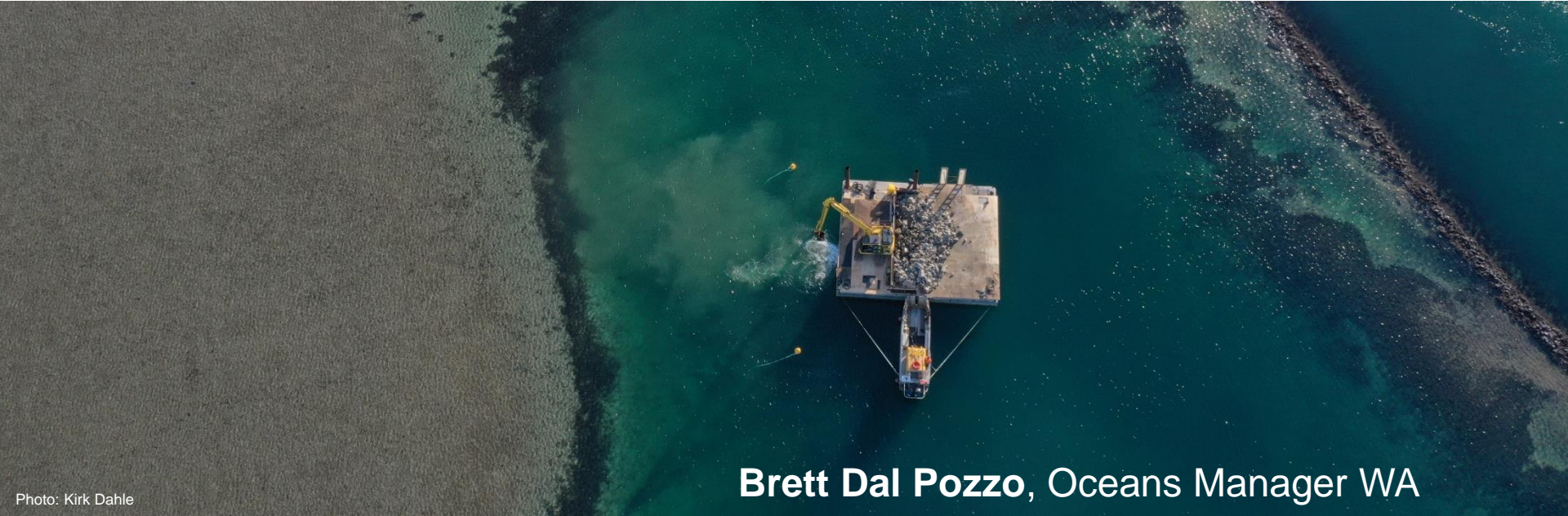


REEF BUILDER

A BOLD PLAN TO RECOVER CRITICALLY ENDANGERED SHELLFISH REEF ECOSYSTEMS



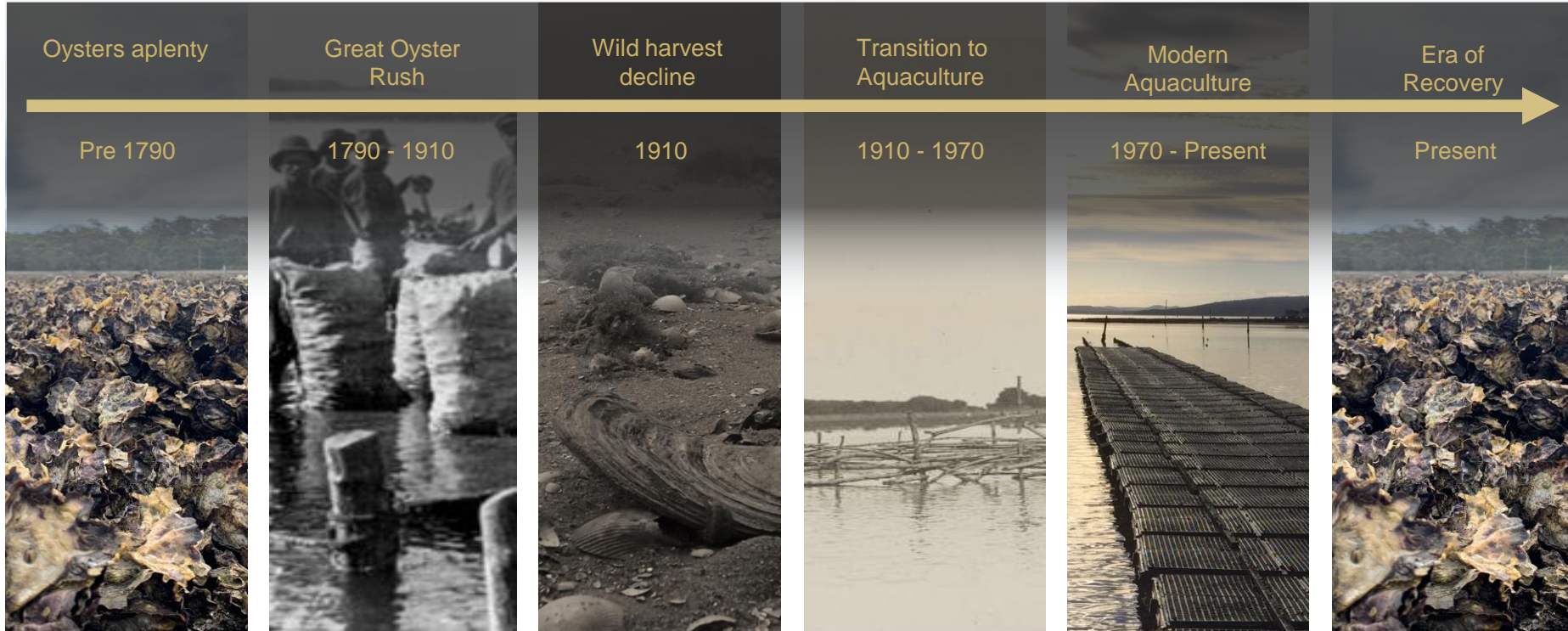
Brett Dal Pozzo, Oceans Manager WA

Reef Builder

- Australia's largest marine restoration initiative
- Goal of shellfish reef restoration at **60 locations** across Australia by 2030
- Bringing shellfish reefs **back from the brink** of extinction to benefit people and nature

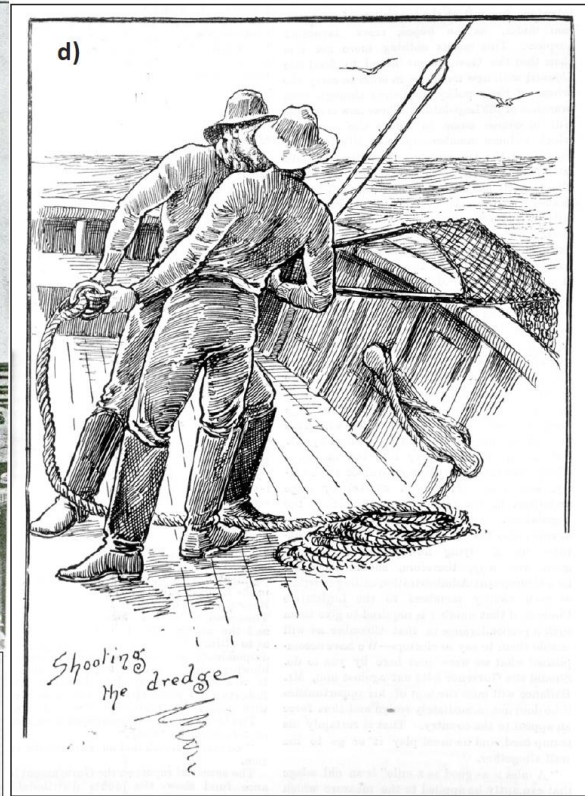
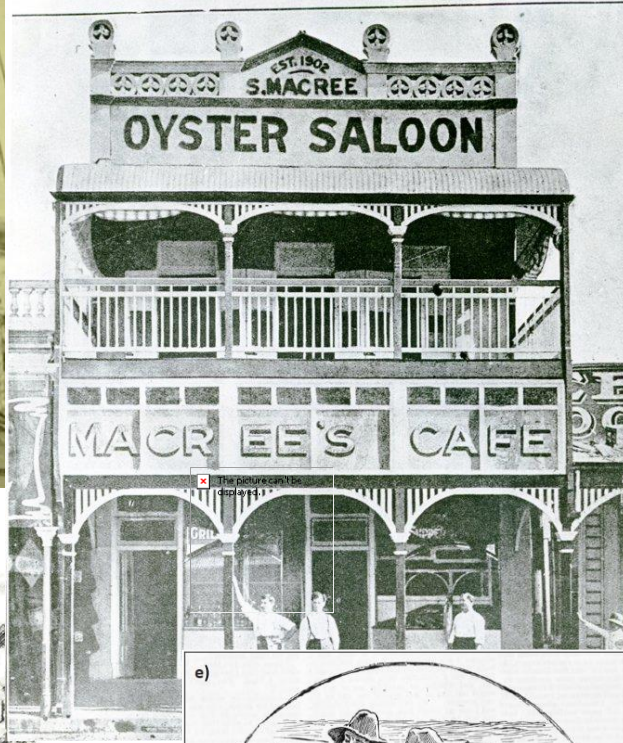
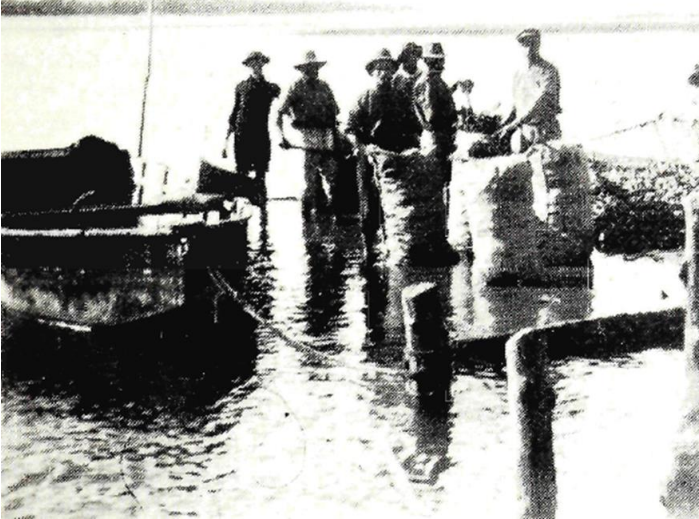


Loss and Recovery



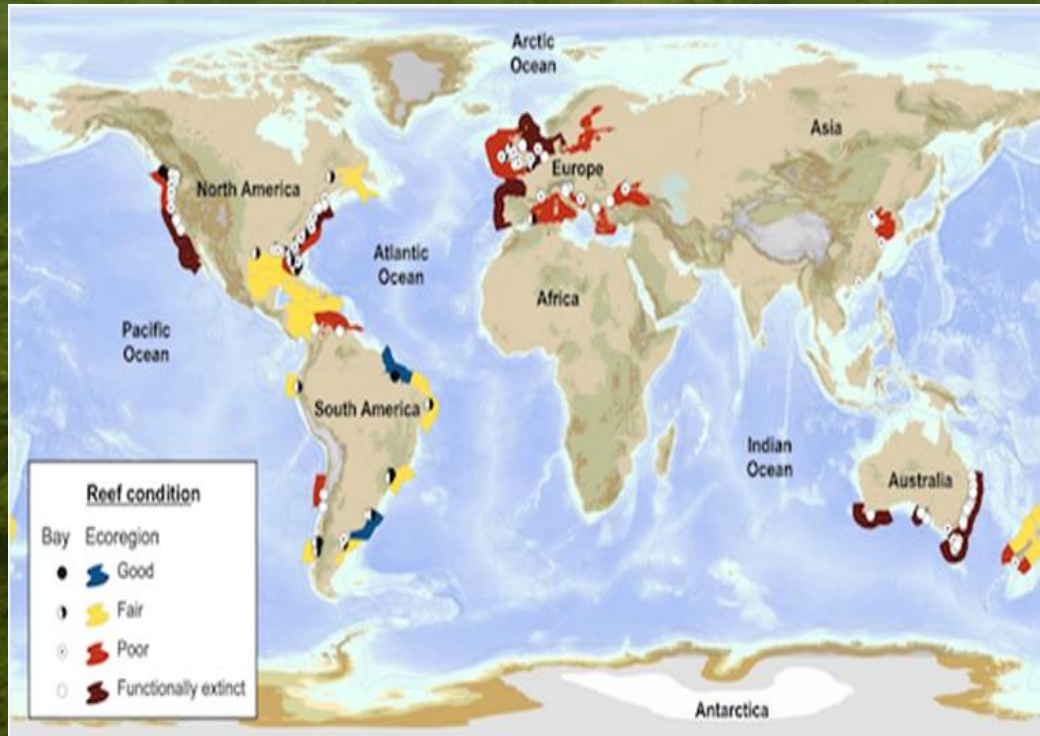


Bagging oysters C 1910. Pumicestone Passage. JW Clark



Images from Alleway *et al*, 2015; Ford and Hammer, 2016.

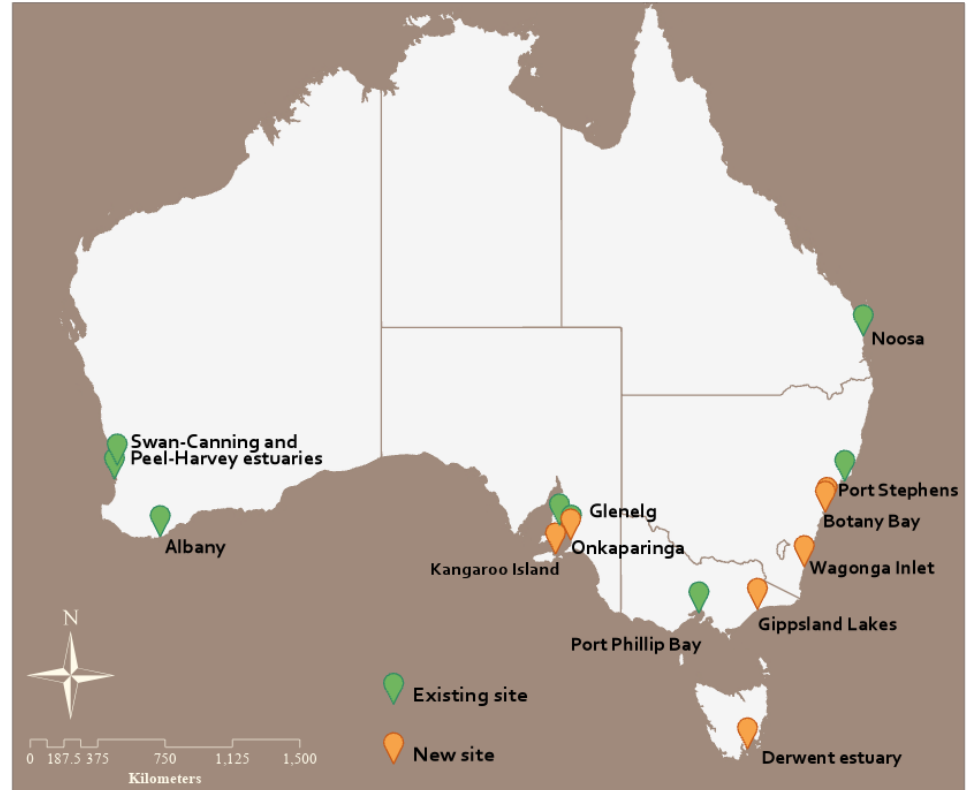
THE LOST HABITAT



- In Australia greater than 90% of shellfish reefs impacted or lost.
- Only 1 remnant Flat Oyster Reef exists in Australia
- One of the most threatened marine ecosystems.

Reef Builder 1.0

- Partnership with the Australian Government since 2021
- Shellfish reef restoration at **13 sites** around Australia
- Economic stimulus post-COVID and 2019 bushfires recovery funds



Australian Government



THE “ENGINEERS”



Saccostrea glomerata,
Sydney rock oyster



Ostrea angasi,
Native flat oyster

Every hectare of oyster reef (per year) would



FILTER

2.7 billion

litres of seawater



KG

REMOVE 225

Kilograms

of nitrogen and phosphate

PRODUCE



375kg

of new fish
to catch and eat

PROVIDE NEW HOMES FOR OVER

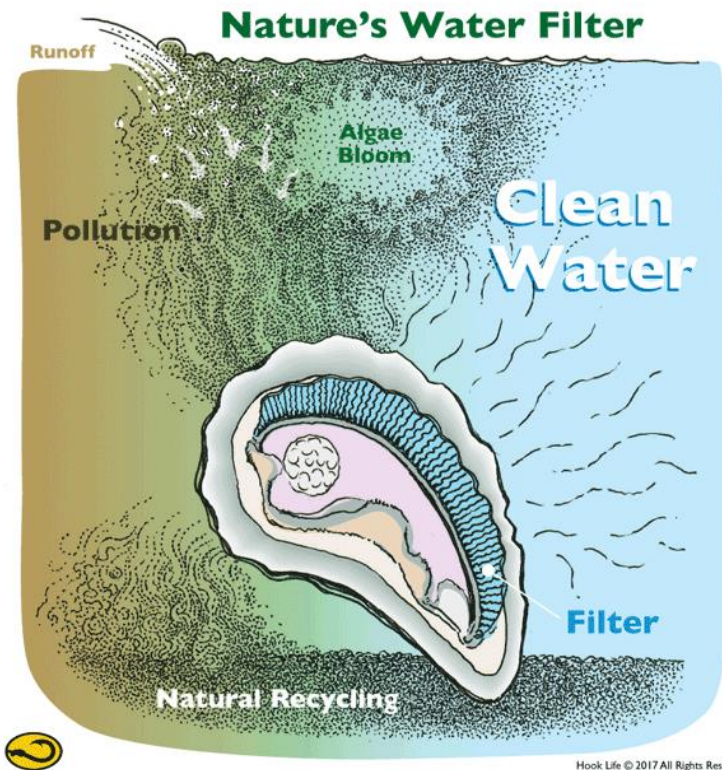


100

marine
species



7,000m³ of used shell, preventing it
from entering local landfill

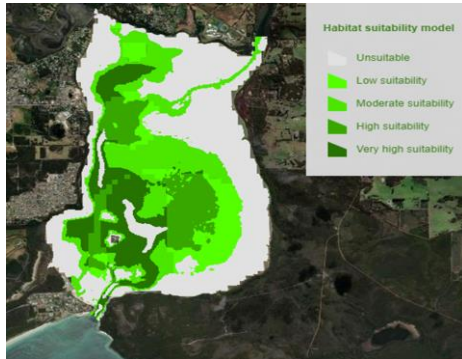


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HOW ARE REEFS RESTORED?

FIRST, WE 
Identify

SUITABLE SITES FOR
RESTORATION



NEXT, WE 
Construct

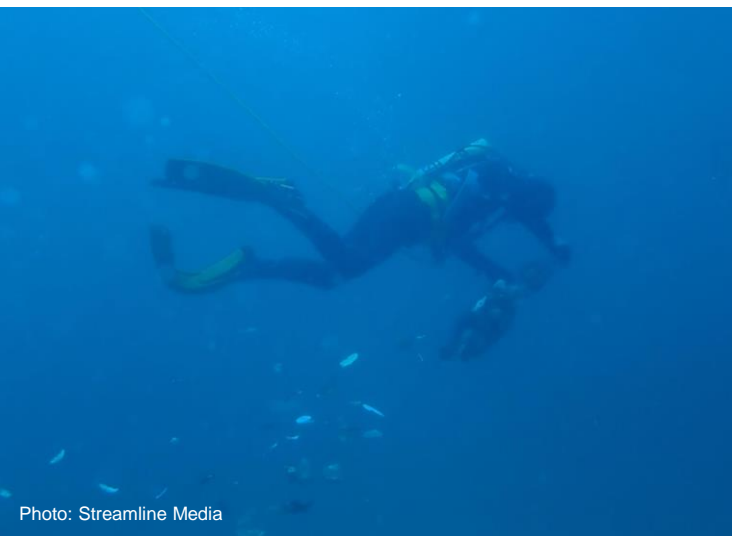
A REEF BASE USING
NATURAL MATERIALS

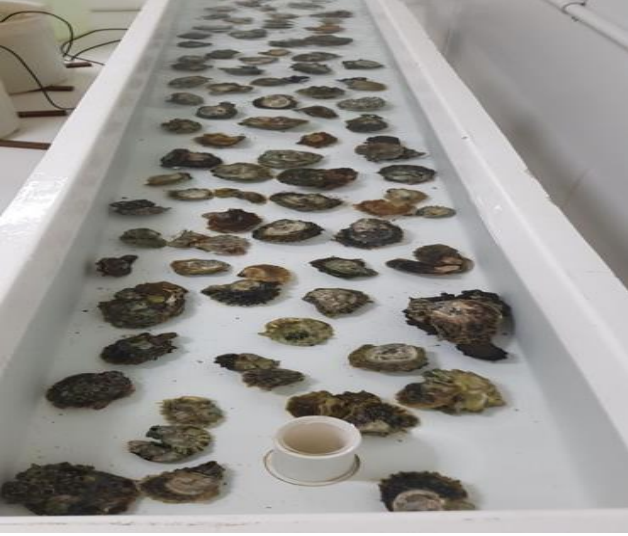


LASTLY, WE 
Seed

THE REEF BASE WITH
MILLIONS OF OYSTERS
AND MUSSELS











NATIVE FLAT OYSTER REEF



What we've achieved since 2021



32

Hectares of reef restored



86

Tonnes of recycled shell used



18

Million shellfish seeded on reefs



638

Diving hours



68

Volunteers involved



618

Volunteer hours



36

Thousand employment hours



44

SMEs engaged





Photo: Simon Reeves

Community Engagement and Citizen Science





Photos: Roz D'Raine

Challenges

- Regulatory approvals pathways across multiple jurisdictions
- Liability
- Predation and disease
- Complexity of marine environment
- Contractor and rock availability
- Climate variability



By mid-2023

- Build additional 20+ hectares of reef
- Seed the reefs with millions more shellfish
- Continue citizen science and community engagement activities
- Post-construction monitoring
- Build an understanding of socio-economic benefits of reef restoration



RESTORATION GUIDELINES FOR SHELLFISH REEFS

<https://www.natureaustralia.org.au/what-we-do/our-insights/scientific-papers/shellfish-reef-restoration-guidelines/>

QUESTIONS?

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