

Seafood Industry adapting to change on the Mid North Coast of NSW

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Local Land
Services



Australian Government



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

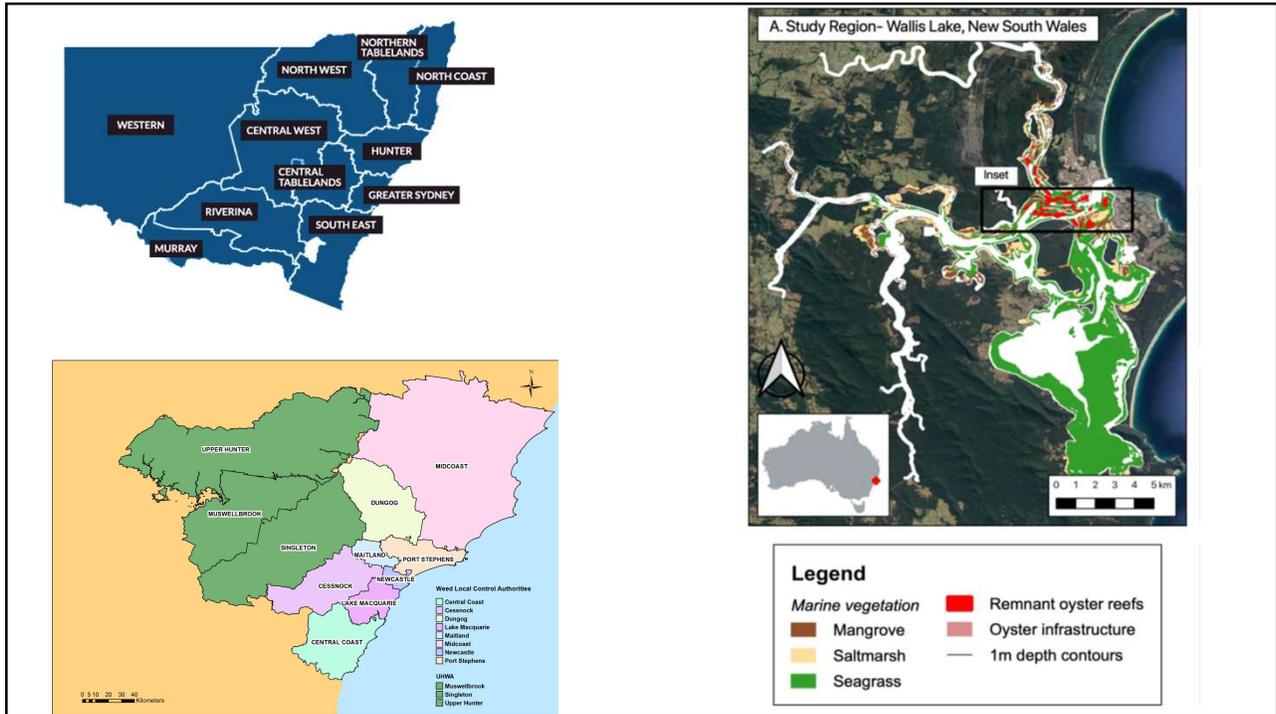
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Acknowledgements

- Worimi and Biripi traditional owners
- Oyster industry
- Fishing industry
- MidCoast Council \$\$
- Taree Indigenous Development and Employment (TIDE)
- Simon Rowe and Andy Myers, OceanWatch
- Ben Gilby, University of Sunshine Coast
- University of Newcastle, Macquarie Uni
- NSW DPI Fisheries
- Australian Govt – National Landcare Program \$\$



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Oral history project – Jo Kijas

WALLIS LAKE ORAL HISTORIES
 Stories FROM OYSTER AND FISHING INDUSTRIES



Oyster farmers and fishers were intertwined about changes in the Lake over the last 75 years with reports of:

- declining prawn and fish catches, and changing oyster farming techniques
- changes and loss of natural habitats such as seagrass in various parts of the Lake
- mass oyster mortalities in the 80s due to an extended period of low lake levels
- changes in tides, currents and sand movement
- a decline in some species (mussel) and increase in others (snail)

“YOU’VE GOT TO THINK LIKE A FISH: BE LIKE A FISH”
 DANNY ELLIOTT FISHER
 ABOUT WADING STRIPS TO BE A GOOD FISHER

“HARDLY A BLADE (LEFT)”
 DANNY ELLIOTT FISHER
 ABOUT THE LOSS OF SEAGRASS, WALLEYE SEALS, WILLIAMS BIRD

PHOTO (top) Fishing boat, add date and location. **PHOTO** (above left) James Stoney, Elliott, add date and location. **PHOTO** (above right) Danny Muller, Elliott checking his crab traps for a catch of blue swimmer, add date and location.

“40 crews INTO THE DRAW IN THE PAST, now [YOU’RE] BATTLING TO GET 6”
 NOEL GOOSELY FISHER
 ABOUT THE COLLAPSE IN PRAWN CATCHES

“KILLS ‘EM WITH HIS TEETH”

“[THE] TIDES WENT out AND DIDN’T come back FOR A MONTH”
 JOHN BAVELL
 OYSTER FARMER
 ABOUT A LARGE OYSTER KILL AND HOW LOW WATER LEVELS IN THE LAKE IN THE EARLY 1980s

“NO WEED LEFT - NOW GREEN SCOUTY MID”
 PETER BAGGIO FISHER
 ABOUT THE LOSS OF PRAMING AND HOW PRAMS ARE A RESULT OF HABIT LOSS

“ONCE YOU COULD JUMP OFF THE BRIDGE”
 JOHN BAVELL
 OYSTER FARMER
 ABOUT HOW MUCH SEEDMENT HAS MOVED OFFSHORE AROUND THE ENTRANCE

PHOTO (top) Fishing boat, add date and location. **PHOTO** (top) The sinking of the fleet, add date and location. **PHOTO** (top) A fish being about to eat a prawn. James, add date and location. **PHOTO** (top) James Stoney, Elliott using a long technique to lift traps out of lake. **PHOTO** (top) James photo of Wallis Lake entrance from the 1980s, photo for the related interview. For more information see ‘Wallis Lake Oyster and Fishery Oral History Project’ and ‘The Seaford Industry Adapting to Change in Wallis Lake’ Research Summary, or contact Hunter Local Land Services on 02 4551 8994.

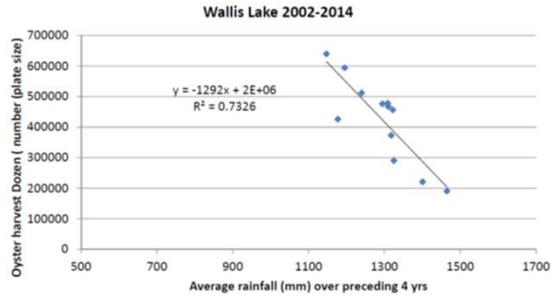
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2015: Wallis Lake industry was struggling
 - oyster production and prawn catches down

Wallis Lake average Annual Rainfall
 versus Oyster Harvest data (DPI)



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1952



2009

Courtesy of Lex Neilsen

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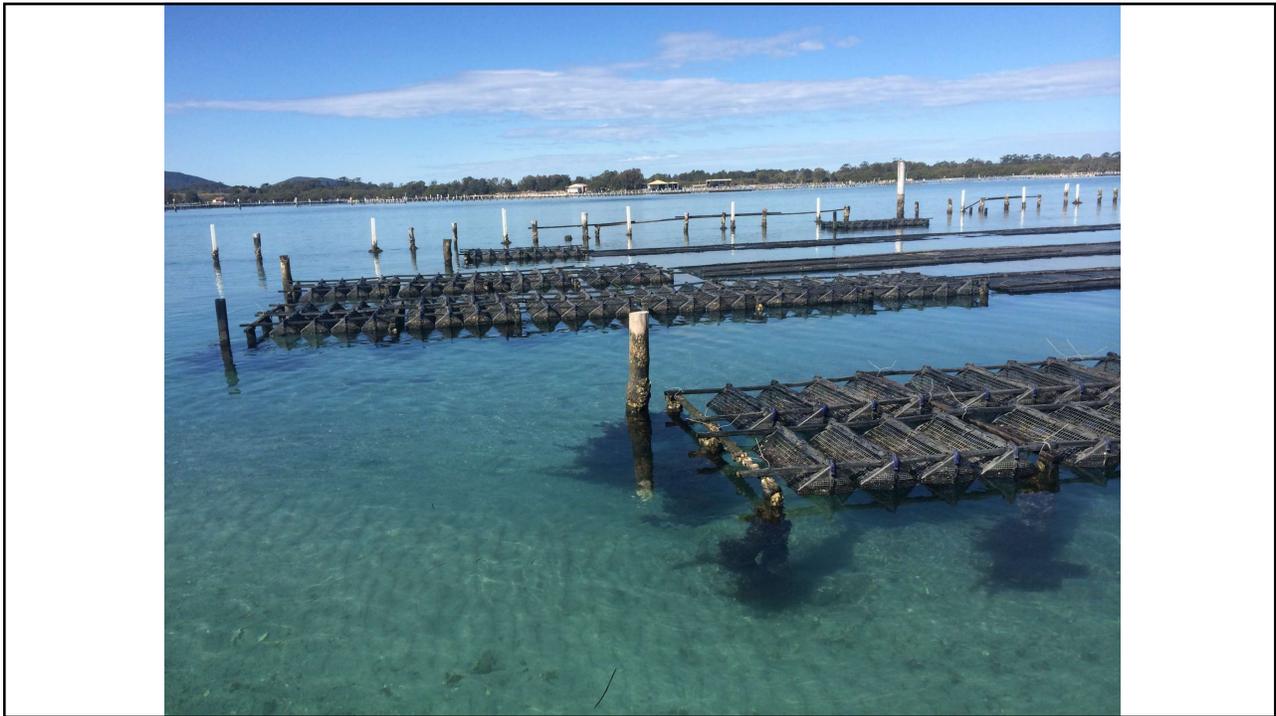
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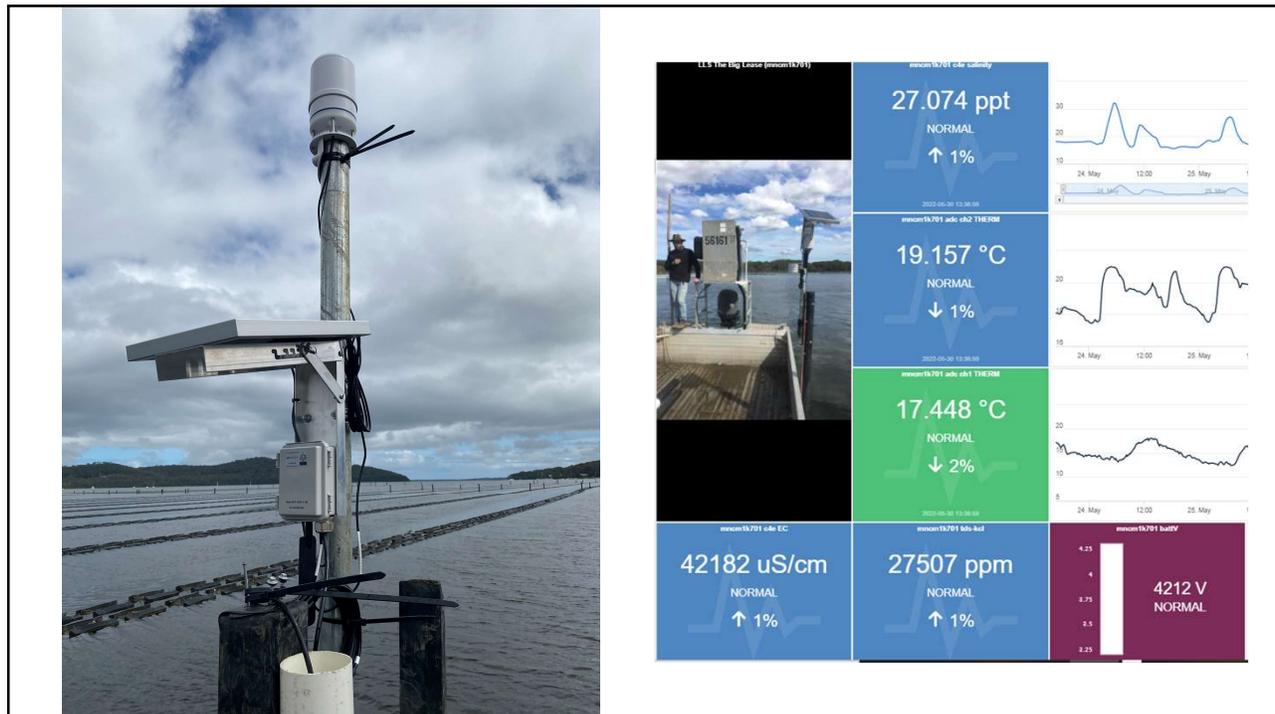
J&J Ravell Oysters		Details of Leases						
Site number	1	04/035	04/035	2	3	4	5	6
Lease #	04/035	04/035	08/008	10/010-1	10/010-1	10/010-2	57/214	60/216
Area (Ha)	0.7411	0.7411	0.864	0.6300	0.6300	0.1100	0.492	2.933
Location	Cable Point	continued	Point Road	Depot Point Shed	continued	Depot Point Shed	Jons Catching	Nursery
Production	Fattening	Fattening	Grow out	Catching spats			Catching spats	Holding
Status	Currently used	Currently used	Currently used	Currently used	Currently used	Never used	Previously used	Currently used
Lease used %	100%	100%	100%	100%	100%			100%
Time of year	all year		all year					
Max age (months)	36	36						12
Min age (months)	24	24						6
Depth of water (feet)	3'	3'	4'	5'	5'		5'	4'
Site conditions	Excellent	Excellent	Good					Good
Number of rows	4	4	4	3	2		3	4
Length of row	84	84	150	365	240		170	430
Technique used - method	Toollex aqua trays	Toollex aqua trays	Tarred timber trays plastic mesh	Tarred timber trays plastic mesh	Stick - tarred + concrete			Stick - tarred + concrete
number	350	350	600	1100	4800			20000
Posts/ anchors - method	Woodshield posts	DM Plastic Posts	Flumed posts - no tar	DM Plastic Posts	DM Plastic Posts		Flumed posts - no tar	DM Plastic Posts
number	450	450	800	1500	650		700	2300
Fixture/ float - method	Woodshield Batten	DM Sleeved timber	Fixed Poly rail - WITH stick	DM Sleeved timber	Fixed Poly rails - NO stick			Fixed Poly rails - NO stick
length (m)/ number	335	670	1200	2200	1000			3440
Fixture/ float - method	DM Sleeves							
length (m)/ number	335							
Approx year established	2003	2003	1995	2013	2013			2007
General condition	Excellent ->10 years to overhaul	Excellent ->10 years to overhaul	Moderate -<5 years to overhaul	Good ->5 years to overhaul	Good ->5 years to overhaul		Poor - needs overhaul now	Good ->5 years to overhaul
Maintenance needs			increasing					
REASONS for system used								Sheltered
CONSTRAINTS	Sand wash = erosion Large overcatch			Boat wash	Boat wash		Need pulling up	
Flag for poor =1, mod=2,	0	0	2	0	0		1	0
total length of rows number/ m	335 1.0	336 1.0	600 1.0	1095 1.0	480 10.0	0	510 0.0	1720 11.6
spacing of posts	1.5	1.5	1.5	1.5	1.5		1.5	1.5
m of flotation/ m row	2.0	2.0	2.0	2.0	2.1		0.0	2.0

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Environmental sensor network

- Oyster Transformation Project
 - Statewide
 - Reduce closures, HABs
- Oyster overcatch research project
 - improving drying regimes

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Sub-catchment
program in
Pelican Bay

Mitchell's Island
Manning River

- Stock fencing
- Tidal Barriers



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What's important to you?



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Changing infrastructure

- = Changing habitat values
- = Need co-adaptation



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Exerpts from *Historical Records of New South Wales. Vol. IV. Hunter and King. 1800, 1801, 1802. Edited by F.M. Bladen.* Sydney: Charles Potter, 1896 (pps. 414-416)

LIEUTENANT-COLONEL PATERSON TO GOVERNOR KING. (King Papers)

Hunter River, 25th June, 1801

“ ... the quantity of oyster shells on the beaches inland is **beyond conception** ; they are in some places for miles. These are four feet deep, without either sand or earth. Vessels might lay within a few yards of where they are found.”

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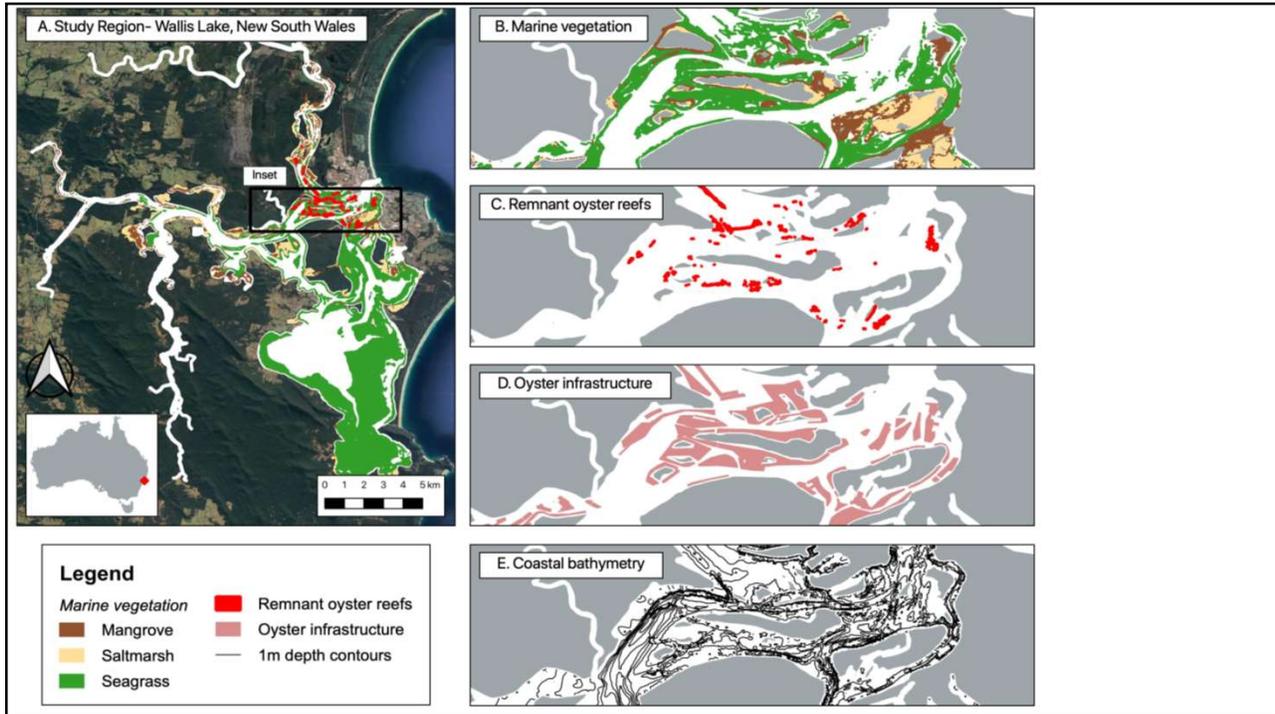
“More of anything? More of everything!”



Oyster Reef prioritisation

- Consider all estuarine habitats
 - Do we need oyster reefs? **YES**
 - Where will we get best fish habitat outcomes?
- Ben Gilby - University of the Sunshine Coast
- Wallis Lake with Manning River to follow

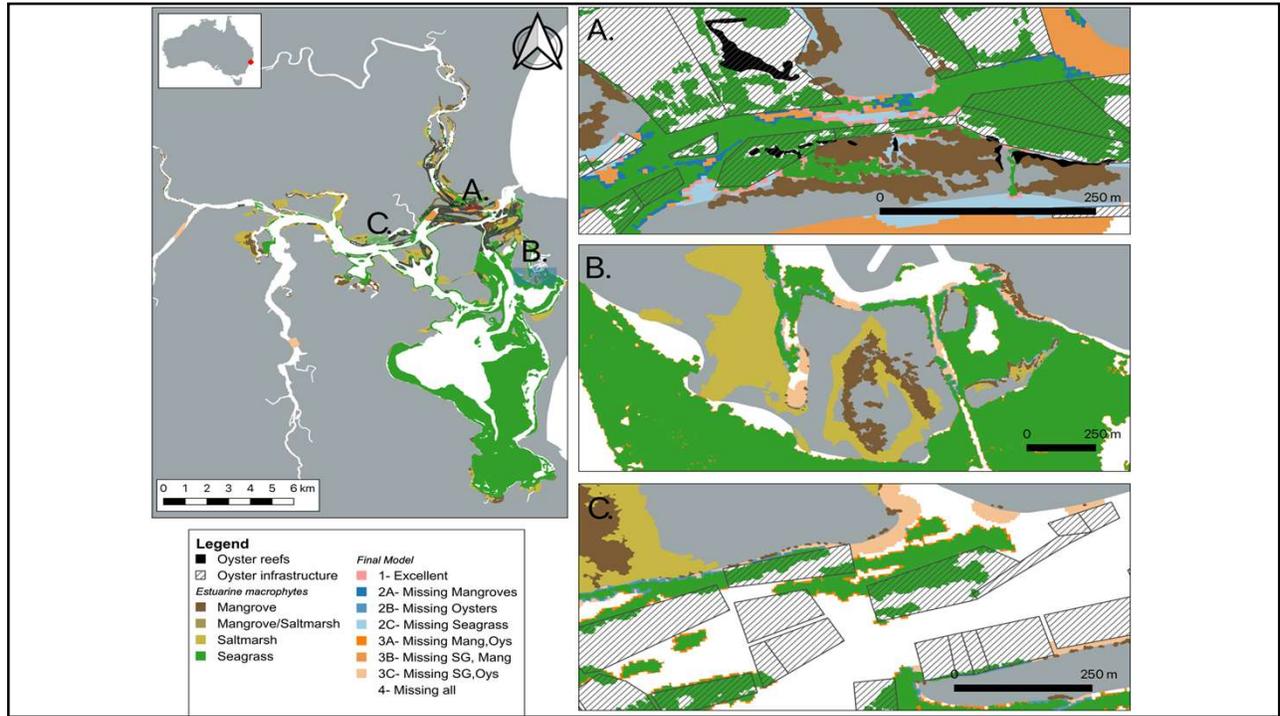
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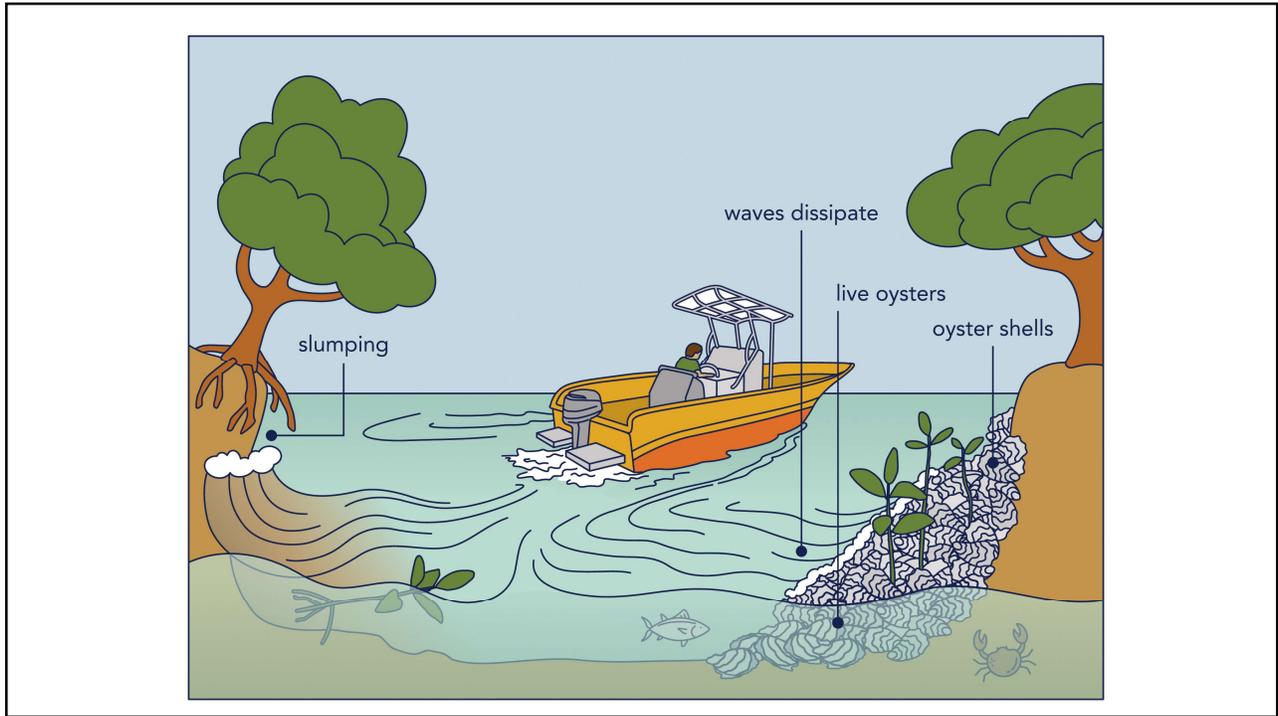
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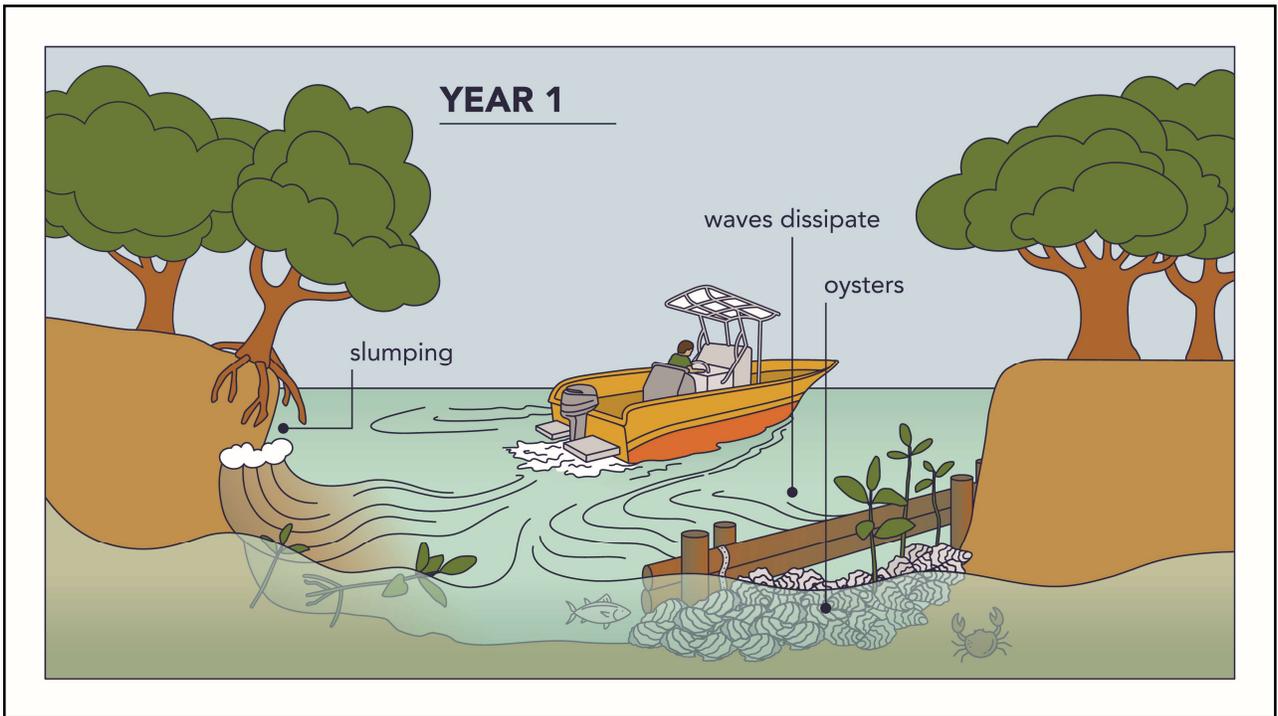
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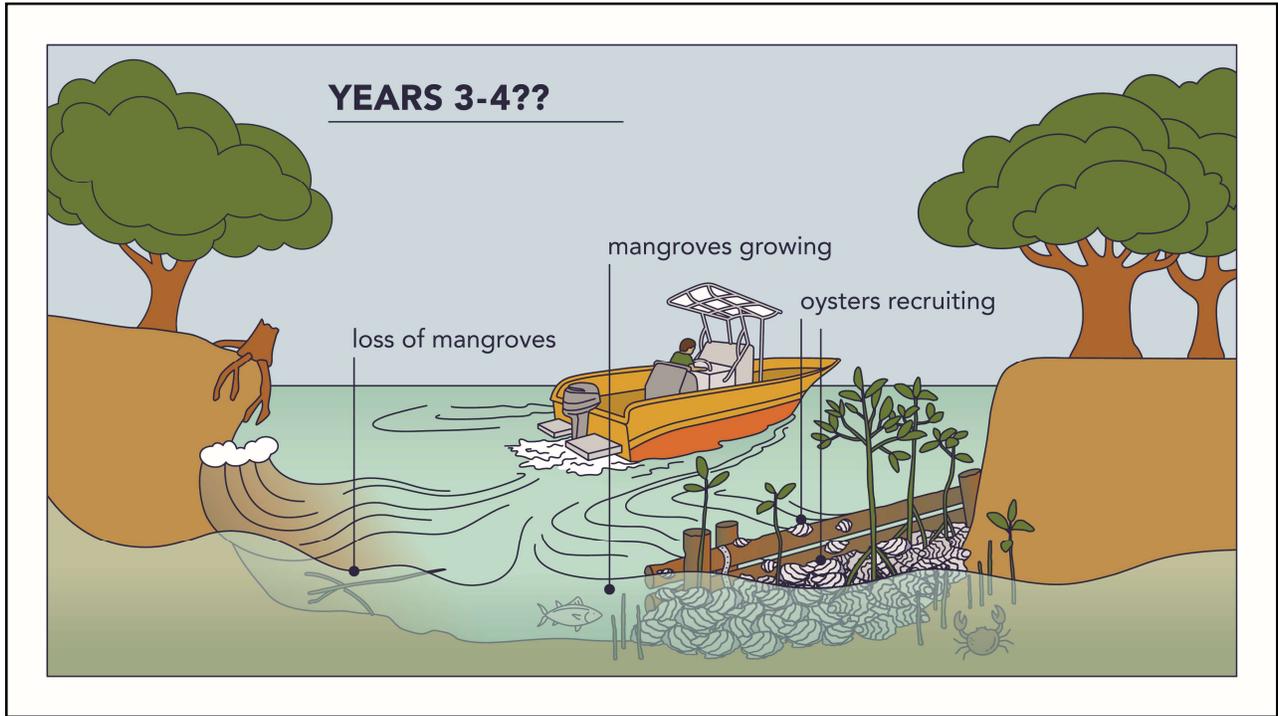
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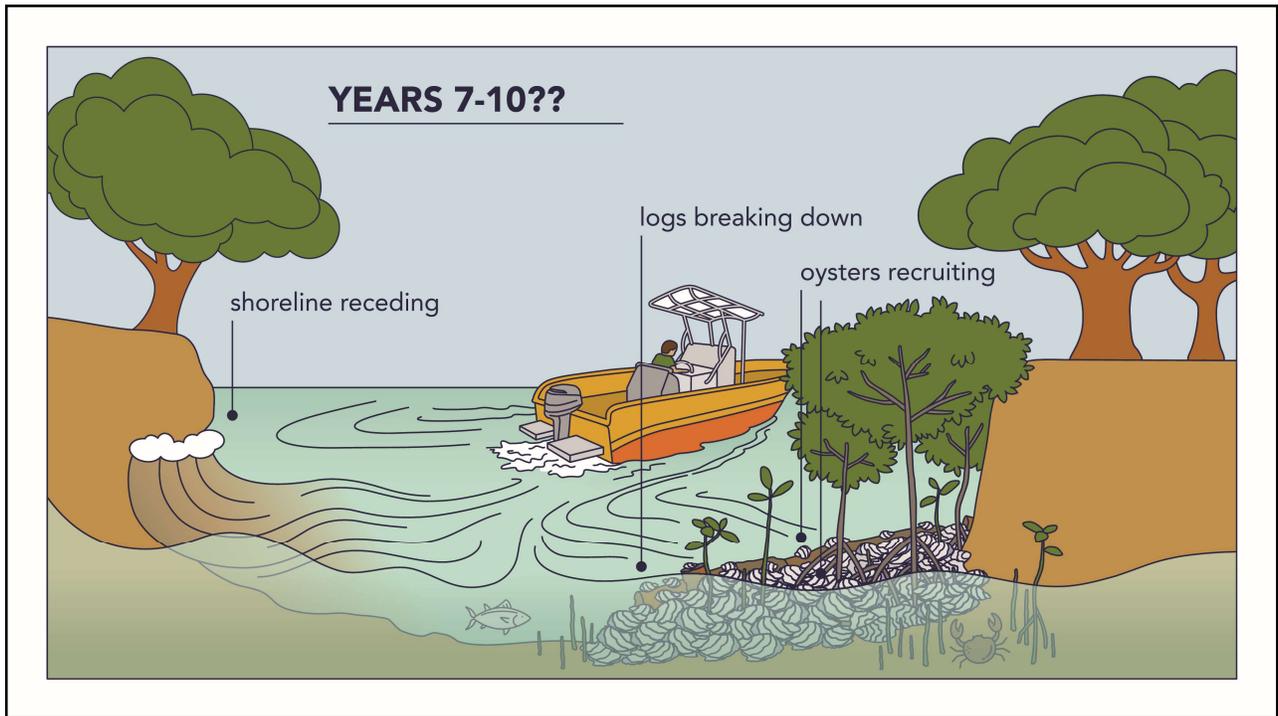
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More info

- <https://www.ils.nsw.gov.au/regions/hunter/projects-and-programs/climate-ready-aquaculture>
- Short video https://www.youtube.com/watch?v=OTBEs_p5Xhs
- Full-length video <https://www.youtube.com/watch?v=hnLWCJJYoMU&t=311s>

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