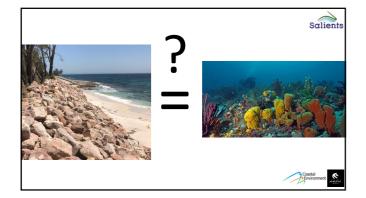Foreshore Rehabilitation: What's Best for the Ecology?
A Case Study of Pelican Beach, Lake Macquarie
Vincent Raoult, David Wainright, Troy Gaston
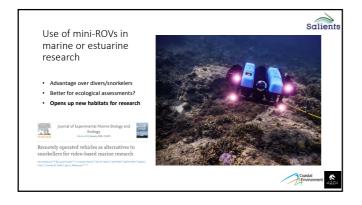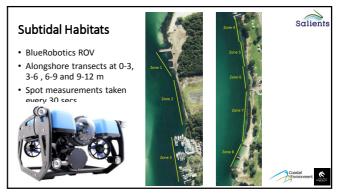
Use of mini-ROVs in marine or estuarine research

- Advantage over divers/snorkelers
- Better for ecological assessments?
- **Opens up new habitats for research**

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Remotely operated vehicles as alternatives to snorkellers for video-based marine research

Subtidal Habitats

- BlueRobotics ROV
- Alongshore transects at 0-3, 3-6 , 6-9 and 9-12 m
- Spot measurements taken every 30 secs

Element	Categories/Types				Notes
Substrate	Sand	Reef	Cobble	Mix	
Reef	Low profile (0-20cm)	Medium profile (20-40cm)	High profile (40+cm)		
Coverage	Sparse (0-25%)	Moderate (25-50%)	Dense (50-75%)	Very Dense (75-100%)	
Macrophytes	Brown	Red	Green	Seagrass	Give species (if possible)
Macrophytes	Sparse (0-25%)	Moderate (25-50%)	Dense (50-75%)	Very Dense (75-100%)	
Sponge/ascidians	Yes	No	Sparse – very dense		
Soft coral	Yes	No	Sparse – very dense		
Fish	none	Sparse (0-10)	Moderate (10-20)	Dense (20+)	Give species (if possible)
Species of note					

Zone 5

Zone 6

Zone 7

Preliminary results

- Full range of benthic habitats
  - Sand, cobble, reef (low, mid, high profile)
- Seaweed and seagrass (possibly depth-stratified)
- Soft corals and sponge (important habitats for juvenile commercial species)
- High species diversity
  - Fish – bream/tarwhine, luderick, wrasse, leatherjackets
  - Invertebrates – sponge, ascidian, soft coral, cuttlefish

Future directions

- What new habitats are you creating on short term?
- What habitats will be there in 5 or 10 years?
- Can stabilisation result in rocky-reef-like habitats?
- Do these then have flow-on benefits to estuaries?
- Can they be refuges for important/threatened species?

- Shift from 'let's protect the foreshore' to 'let's protect the foreshore AND benefit local ecology'