

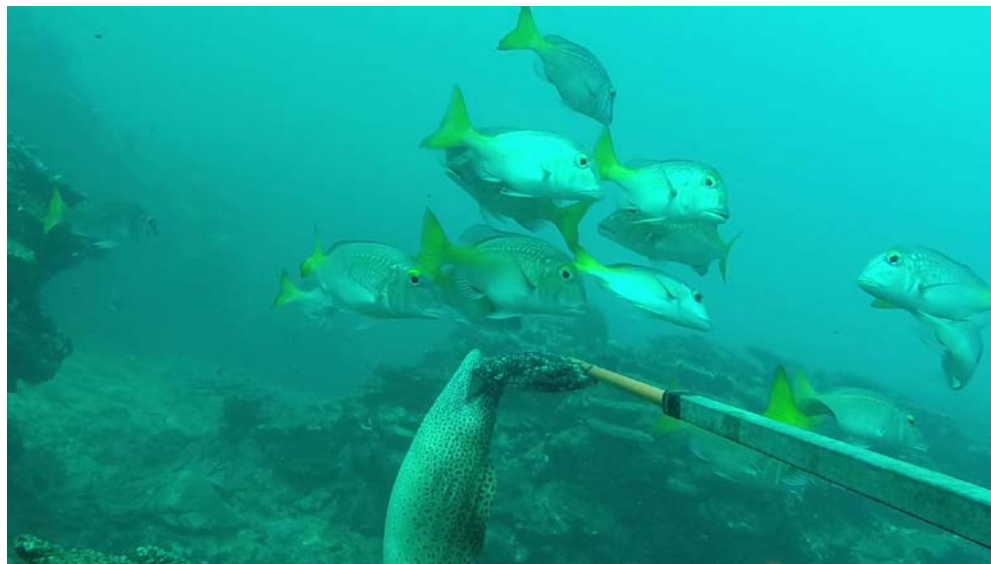


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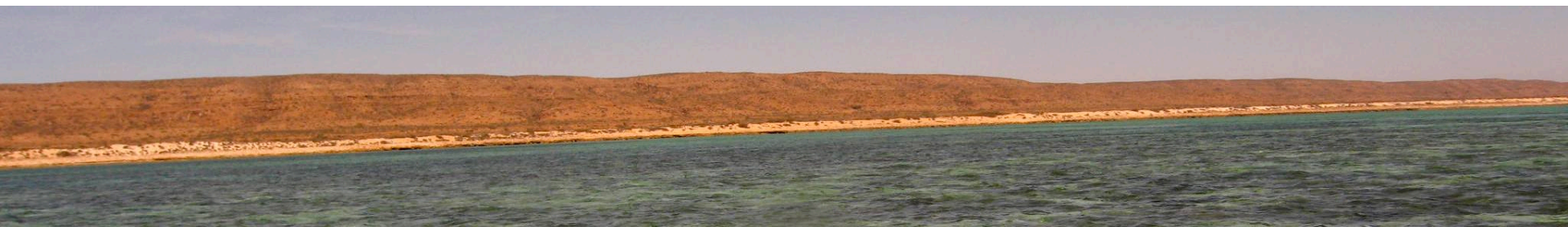
# PMCP Fish and Sharks

Dr Dianne McLean & Dr Tim Langlois



*Funded by the Gorgon Barrow Island Net Conservation Benefits Fund,  
administered by the WA Department of Parks and Wildlife.*

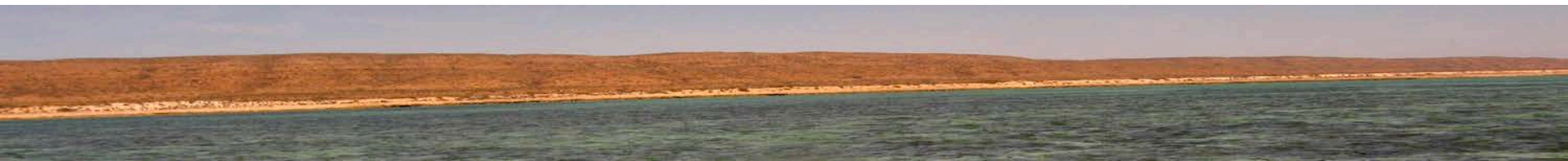
*Significant project support has also been received from DPaW and the Department of Fisheries, WA.*





# PMCP Fish and Sharks

1. Baselines across the region
2. Cross-shelf and regional variability in fish size-structure and assemblage composition
3. Drivers of fish distribution and abundance (habitat, environmental, fishing)

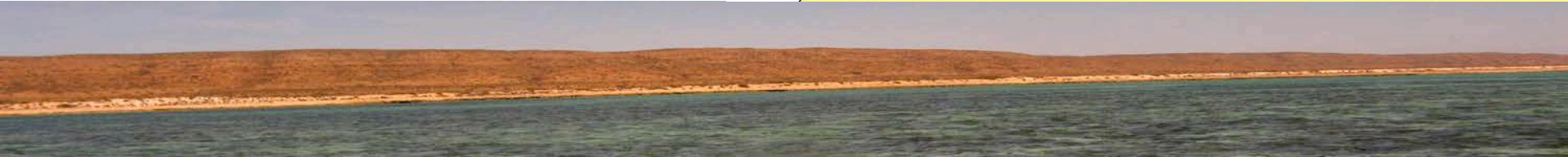
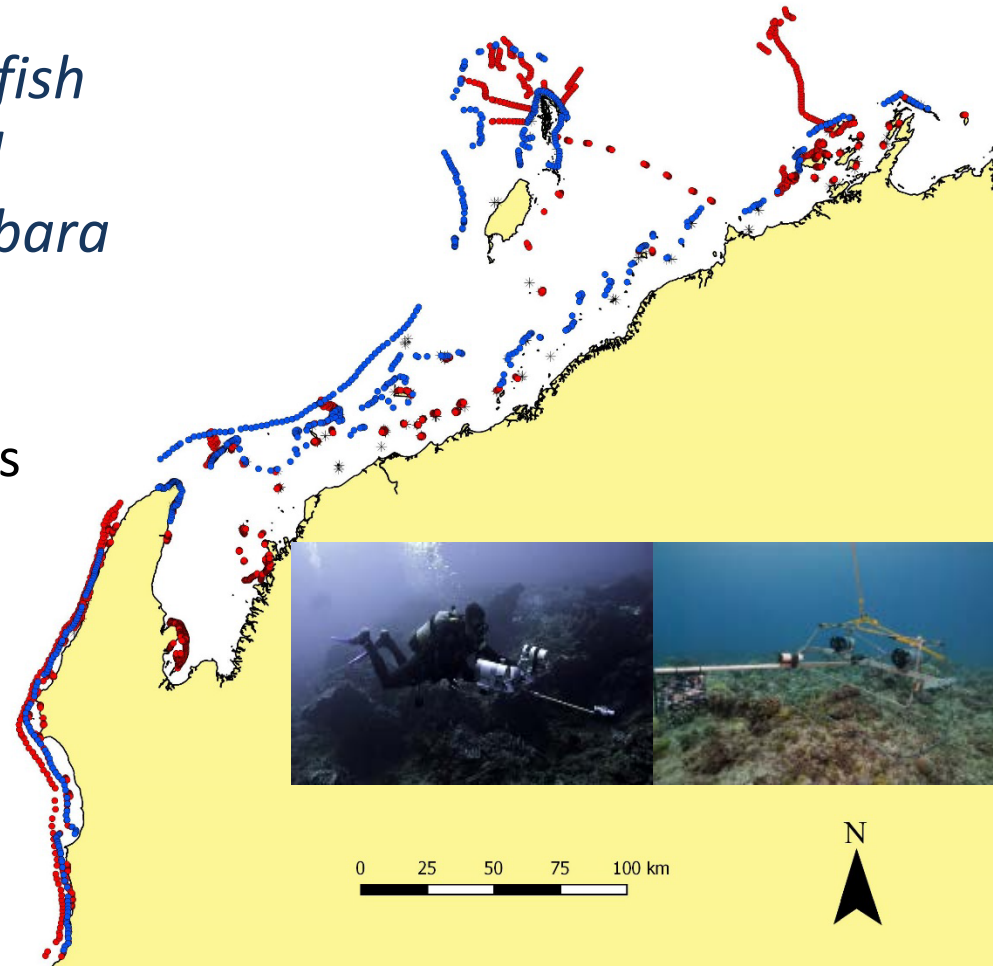




# PMCP Fish and Sharks

*Understanding the drivers of fish  
and shark distribution and  
abundance throughout the Pilbara*

- 1224 stereo-DOV transects
- 1891 stereo-BRUV deployments
- 1 → 70 m  
Coral Bay → Dampier  
(incl. offshore Islands)

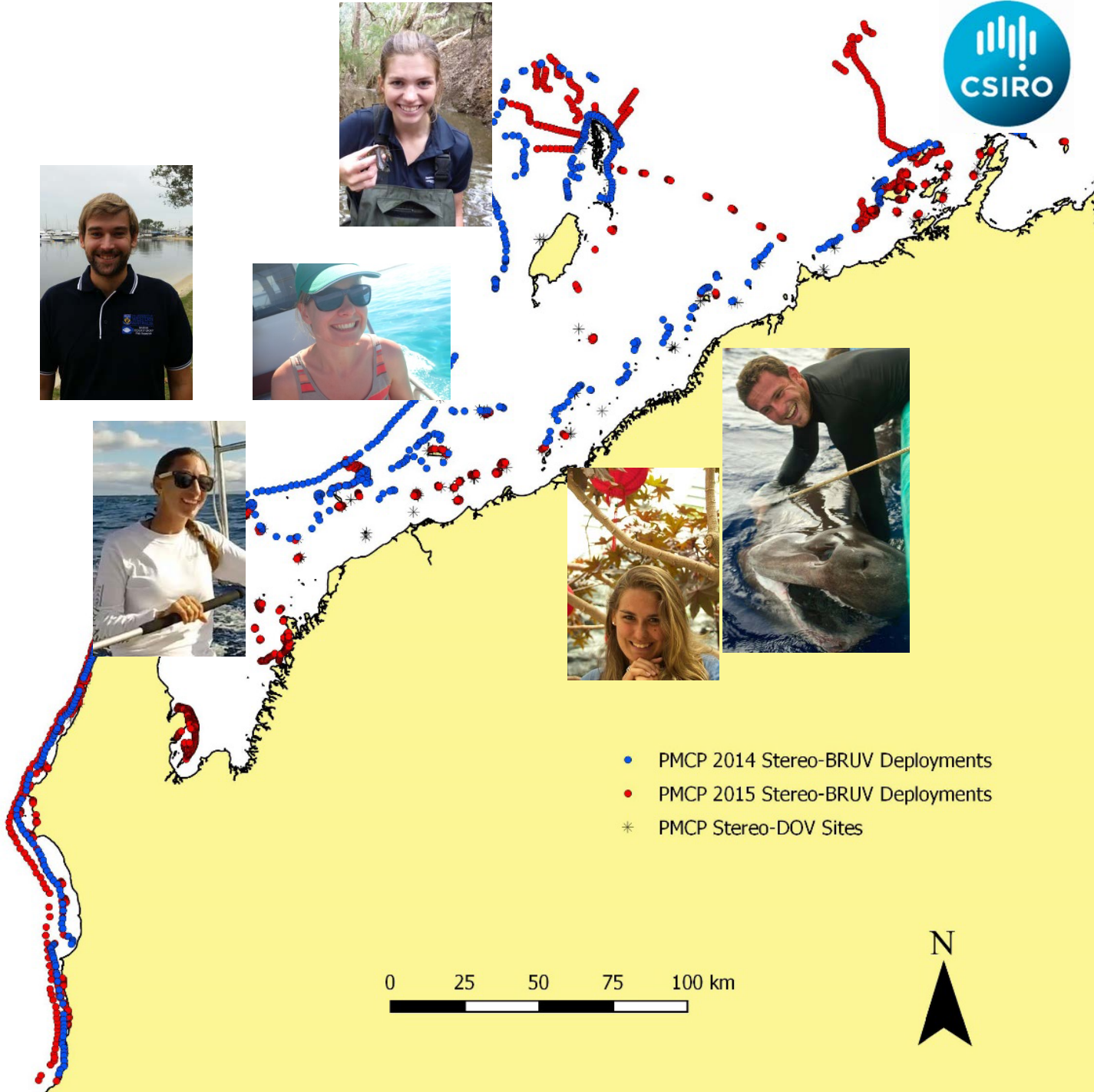
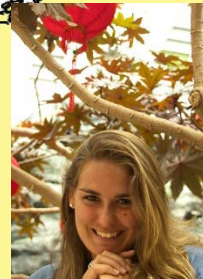








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- PMCP 2014 Stereo-BRUV Deployments
- PMCP 2015 Stereo-BRUV Deployments
- \* PMCP Stereo-DOV Sites

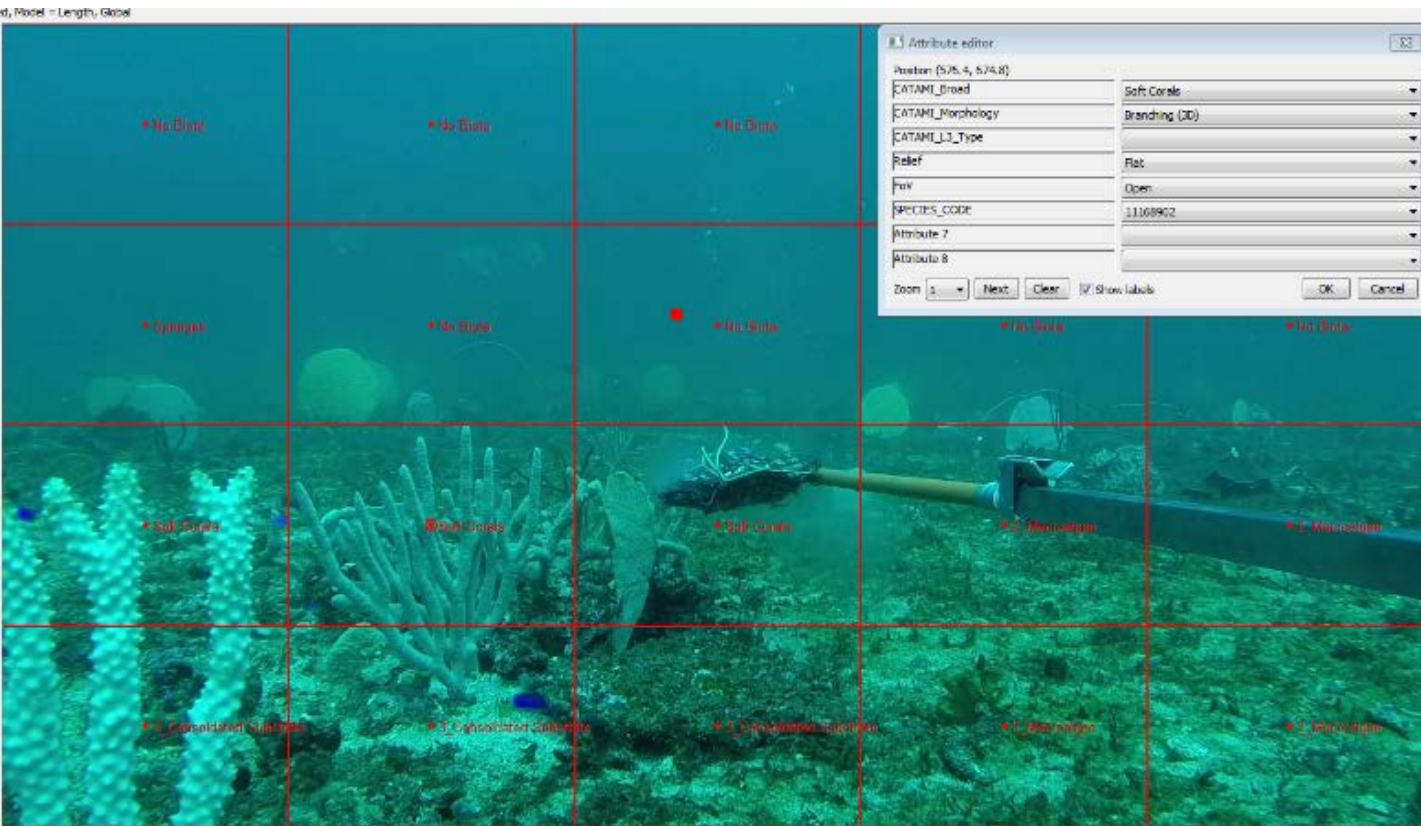
0 25 50 75 100 km







# Rapid & standardised assessment of fish-habitat associations



Relief & percent cover





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Light-weight  
&  
cost-effective



Collaboration

DoF

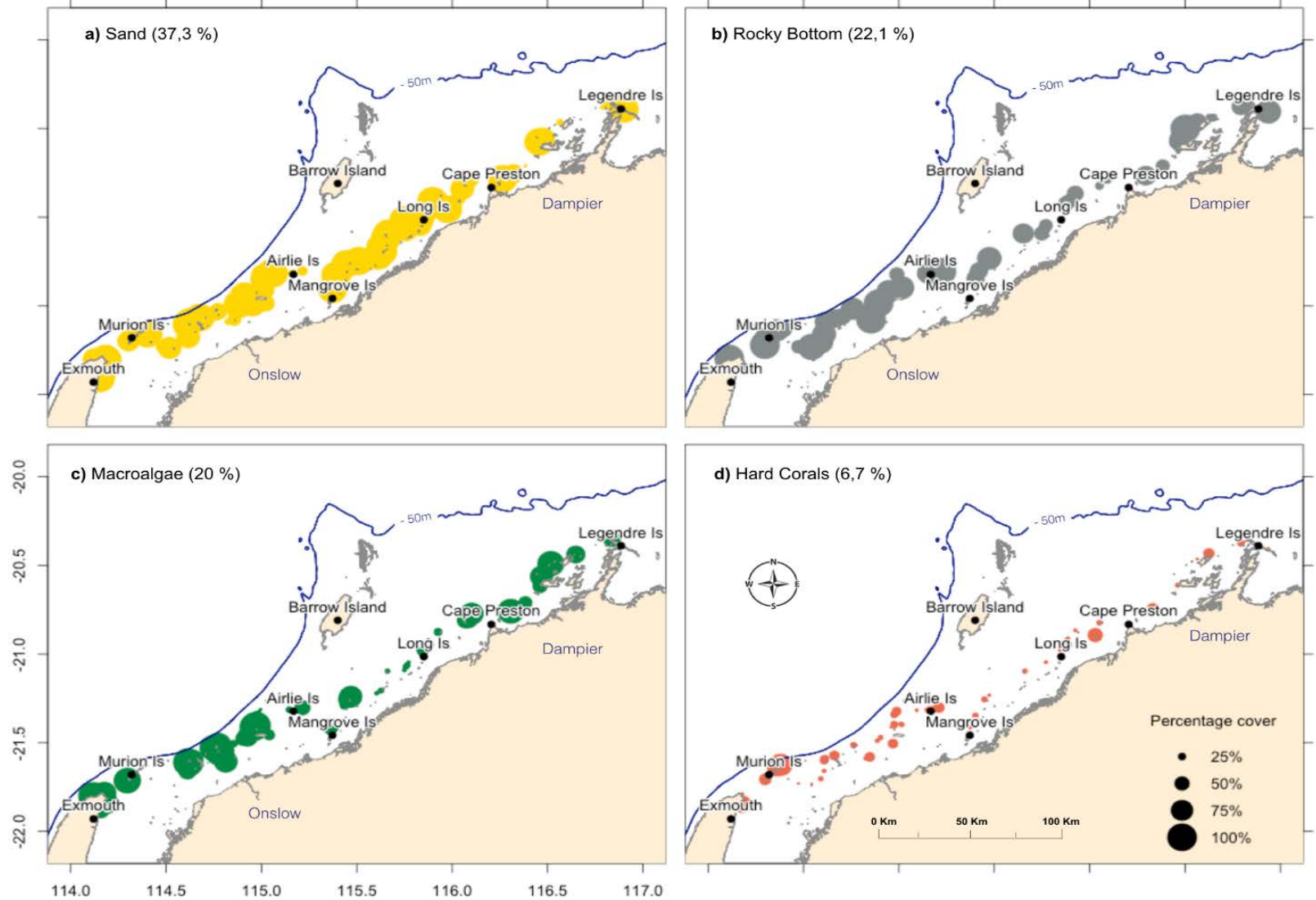
Curtin

Bond et al. in prep



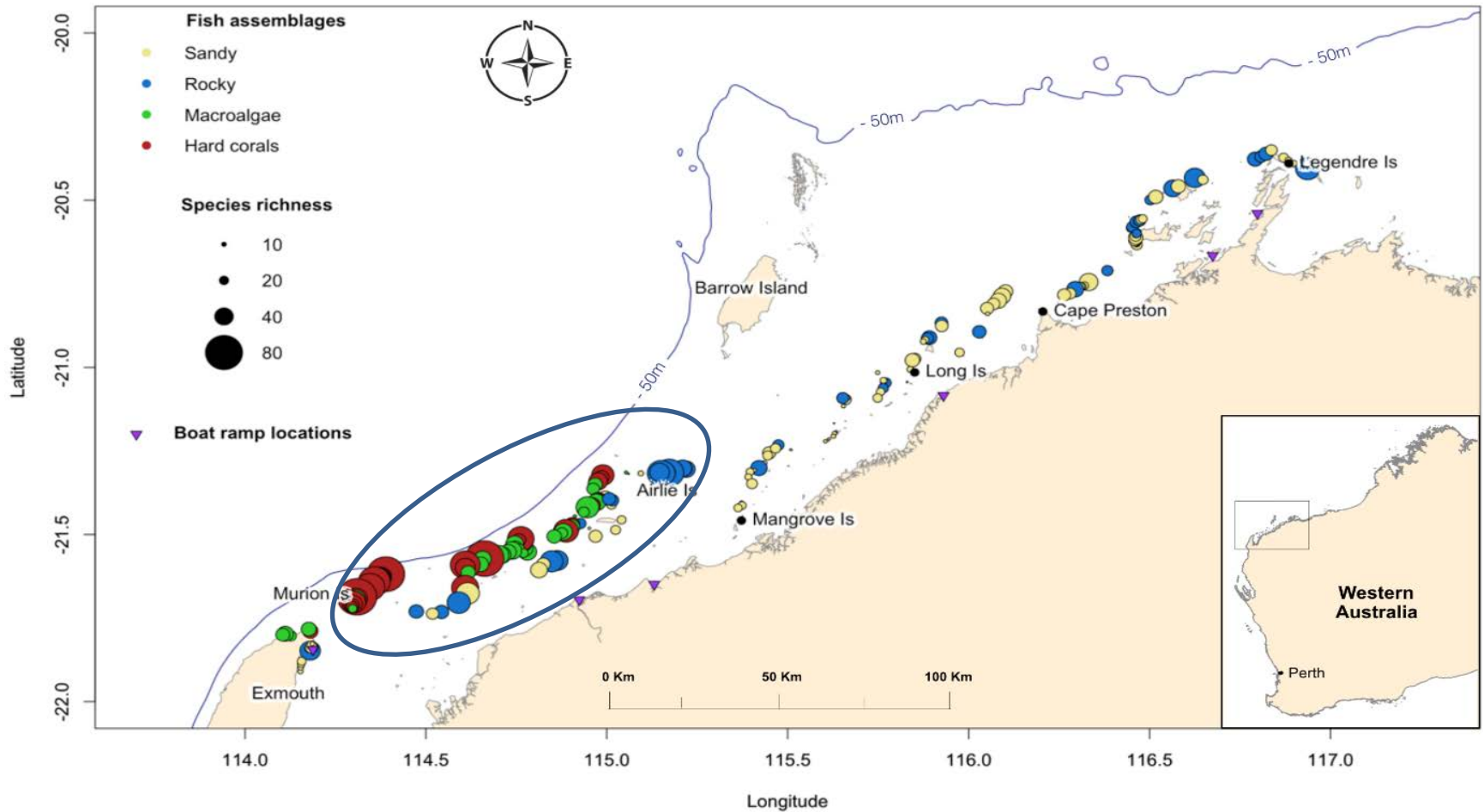
# Nearshore habitats

Pittino et al. in prep.





# Nearshore fish assemblages

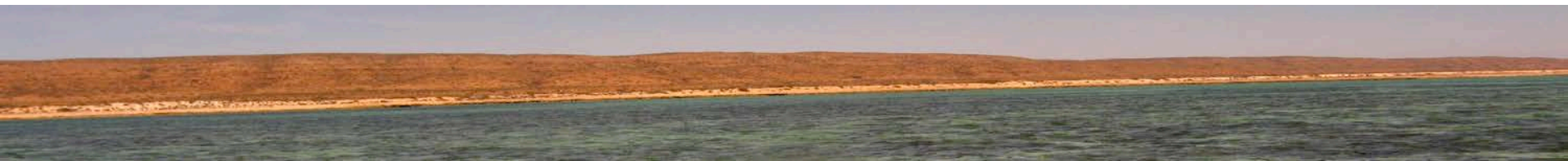
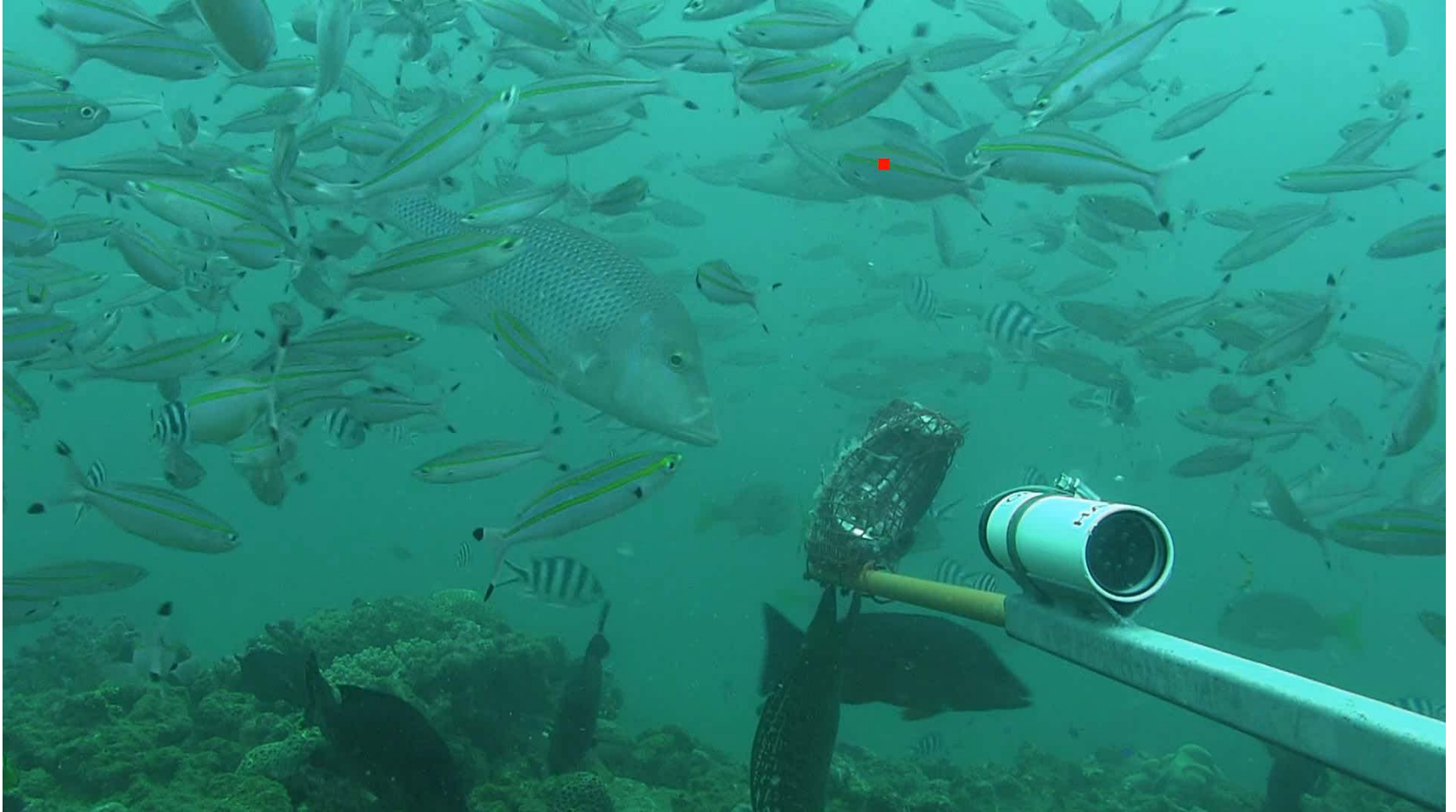




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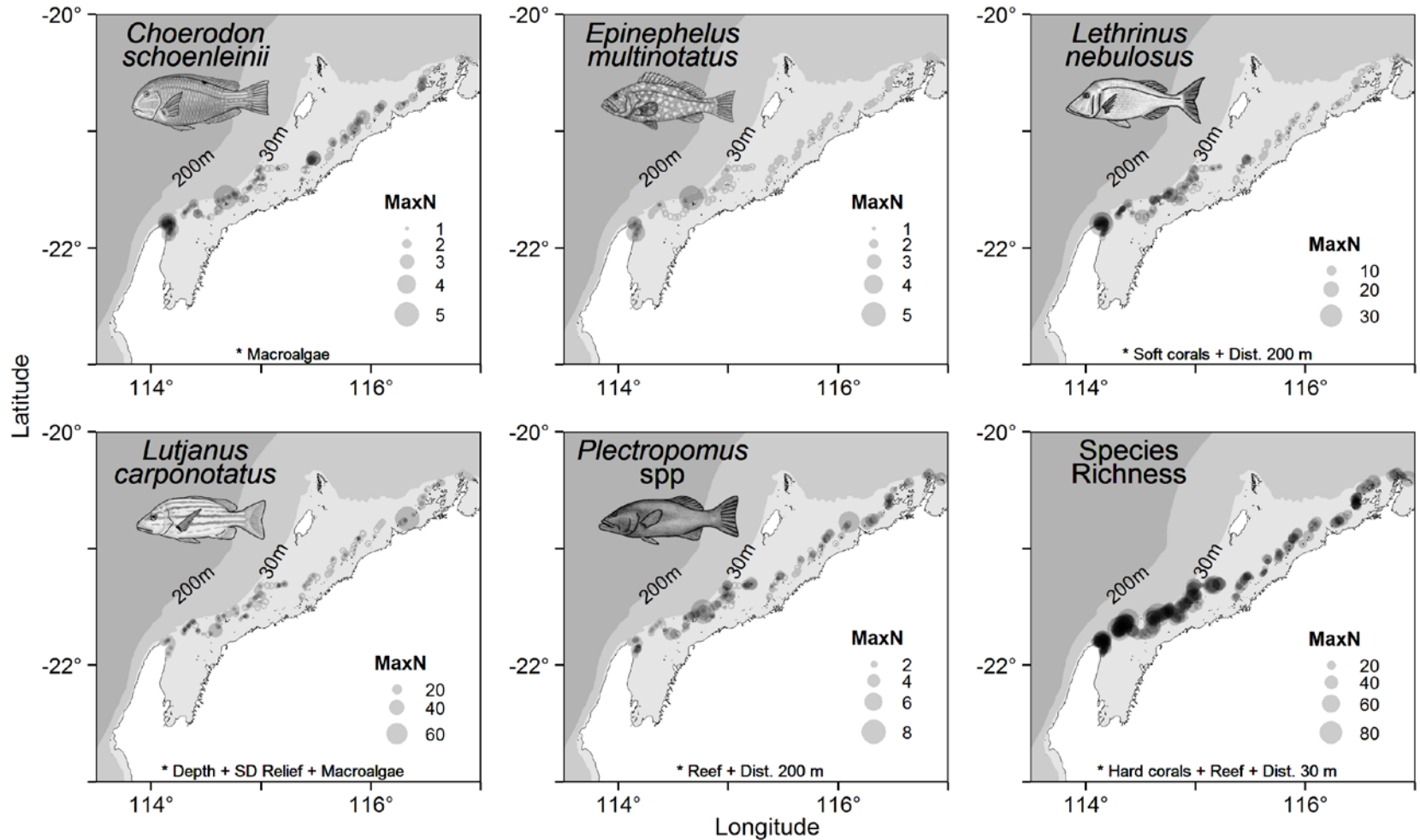


# Offshore Islands in the southern Pilbara





# Key fishery species



# Drivers of fish abundance

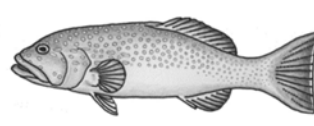
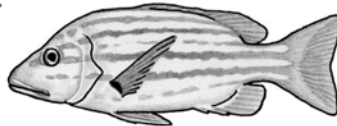
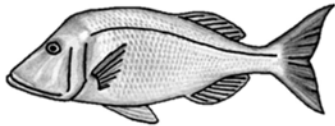
*Lethrinus nebulosus*

*Lutjanus carponotatus*

*Plectropomus* spp.

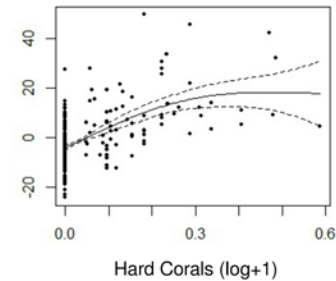
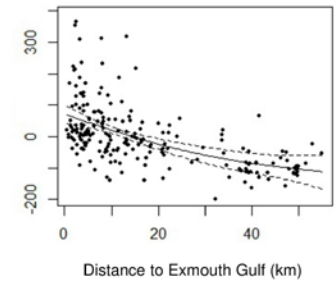
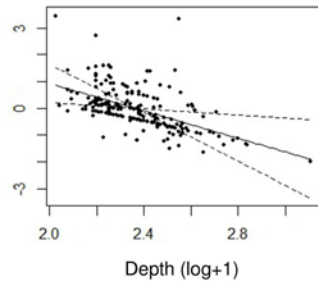
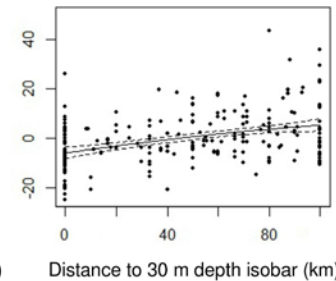
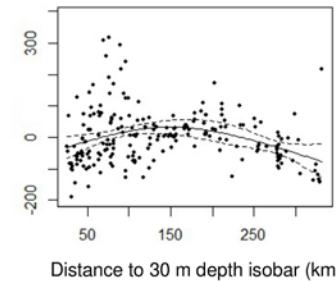
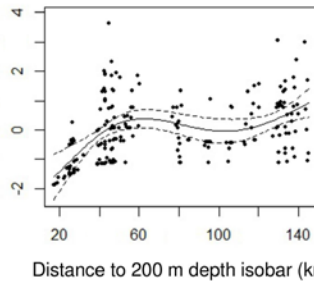
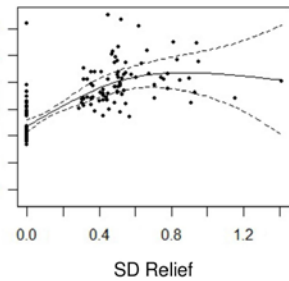
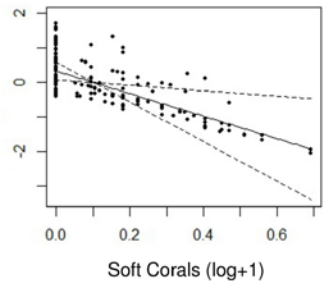
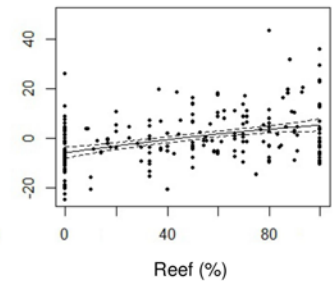
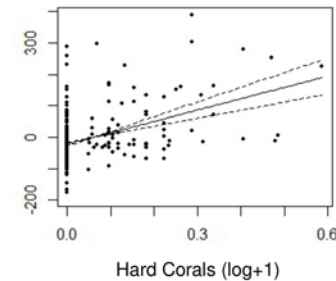
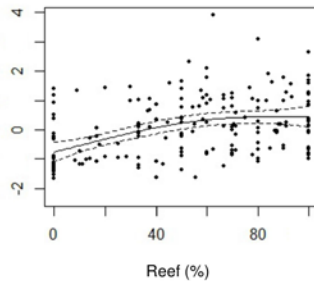
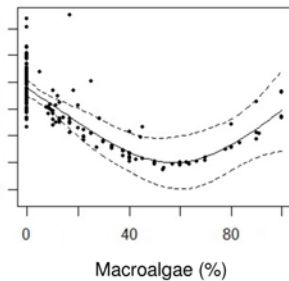
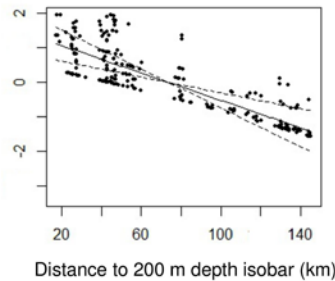
Total Abundance

Species Richness



McLean et al. in 2016

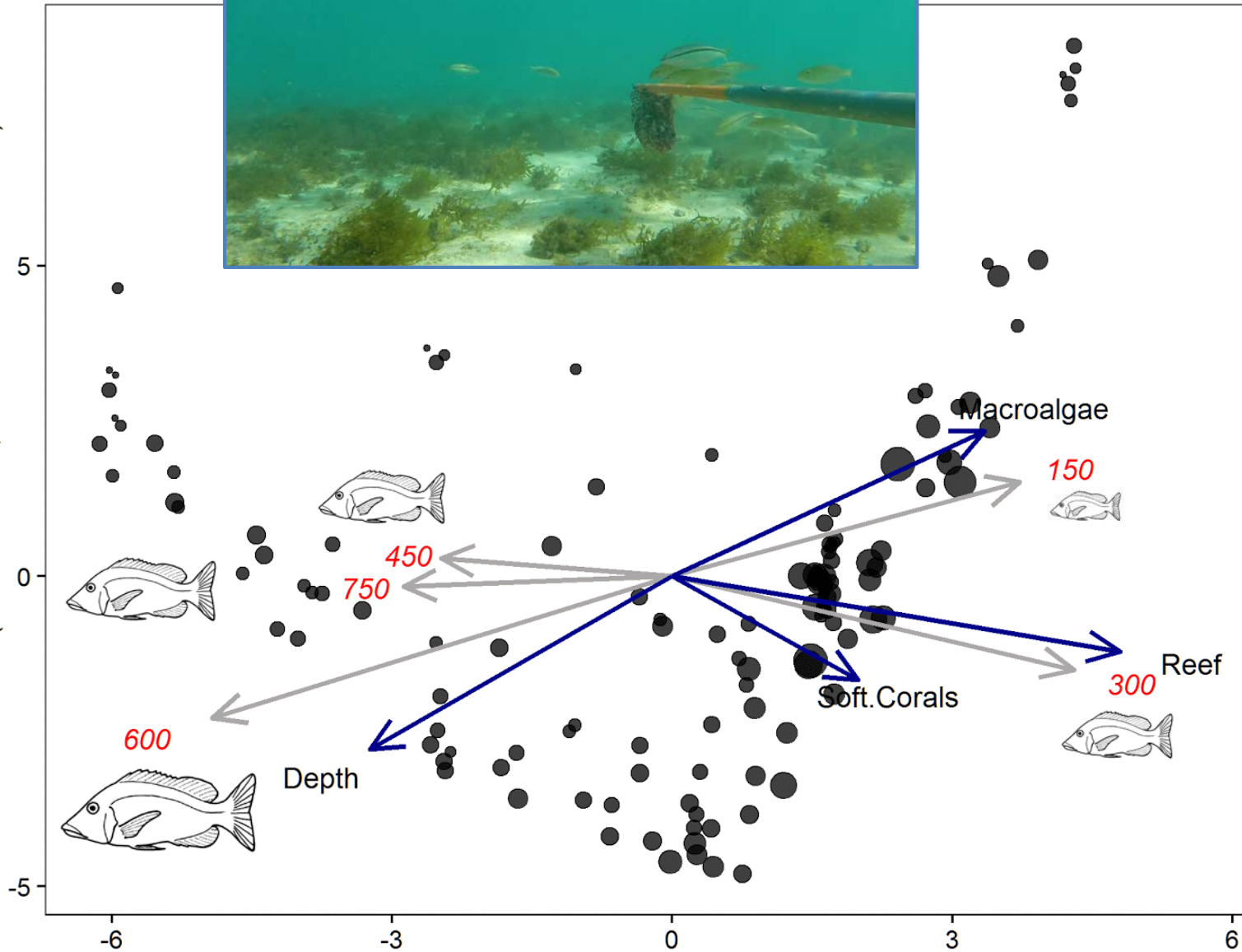
(Residual) abundance







RDA axis 2 (9.3% of fitted, 7.1% of total variation)





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0 25 50 75 100 km







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# Shark depredation



Jon Mitchell  
(PhD student)



Supervisors

DoF

DPaW

CSIRO





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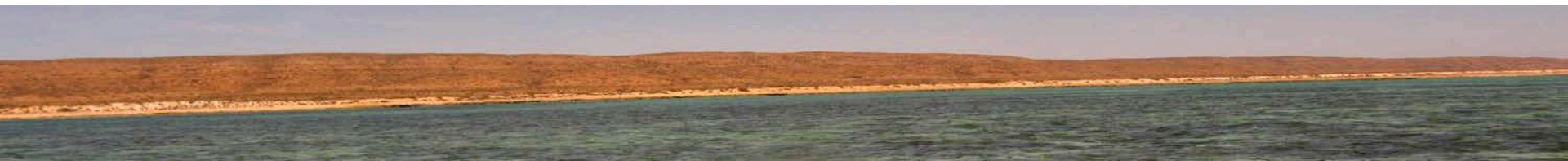
# Suspended sediment and fish

Molly Moustaka (Hons. student)



Supervisors

DPaW





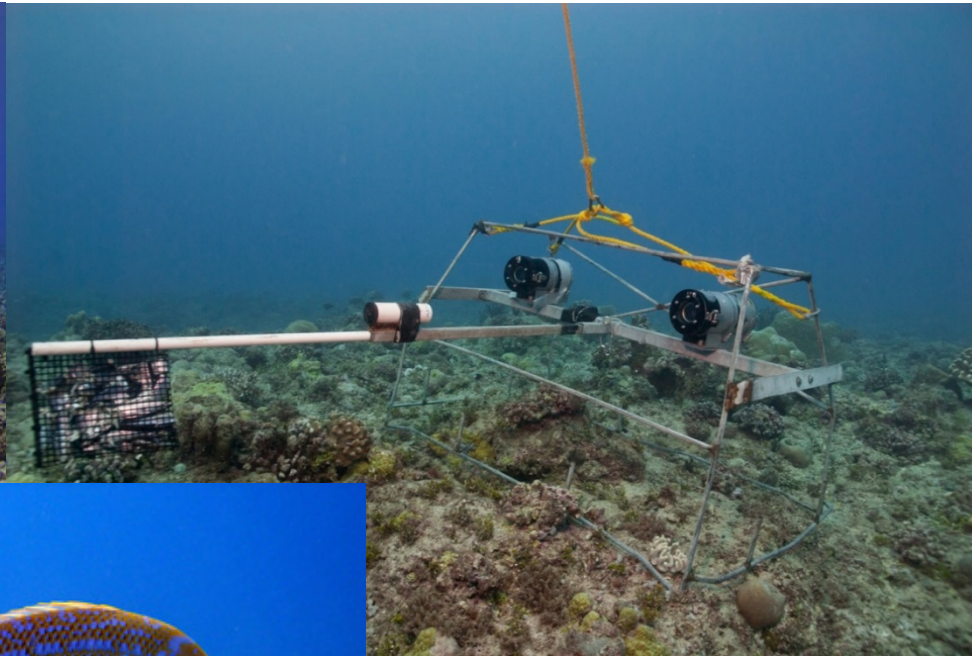


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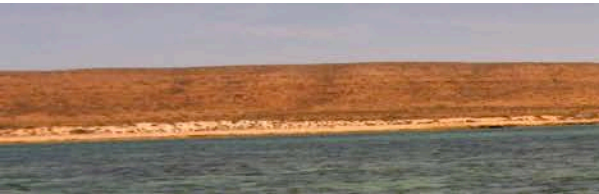


# Performance of BRUV and DOV to detect the effects of fishing

Julia Haberstroh (MSc. student)



Supervisors  
DPaW



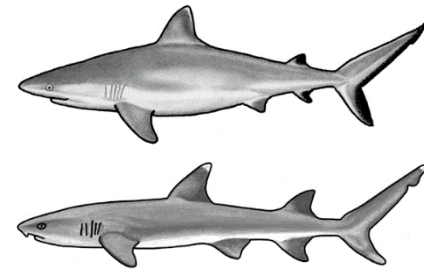




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# Abundance distribution and behaviour of sharks



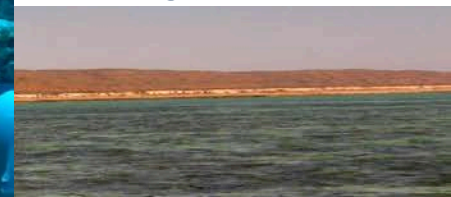
Isabella Lindgren  
(MSc. student)



Supervisors

DPaW

DoF





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# GlobalArchive

An online repository of annotation  
of marine & freshwater fauna



## About

Find out more about the project...

[More »](#)

## Explore data

Explore data & start collaborating...

[More »](#)

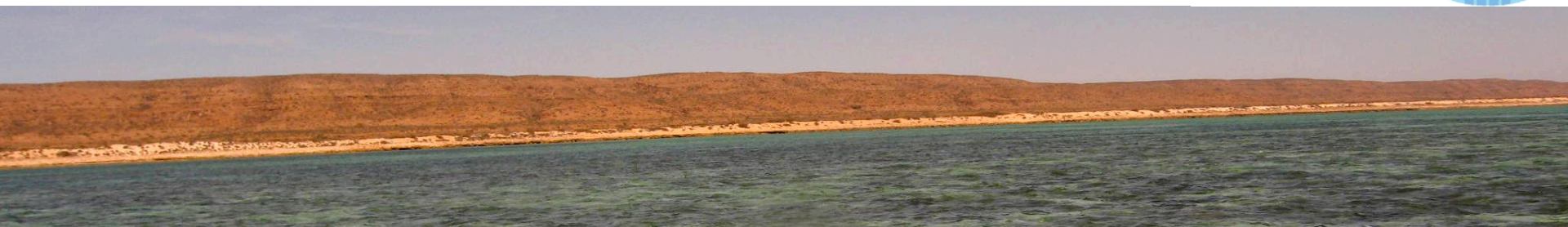
## Manage data

Hi Euan! Manage your data...

[Get started! »](#) [or sign out](#)

## Funding

NCB, UWA & IMOS

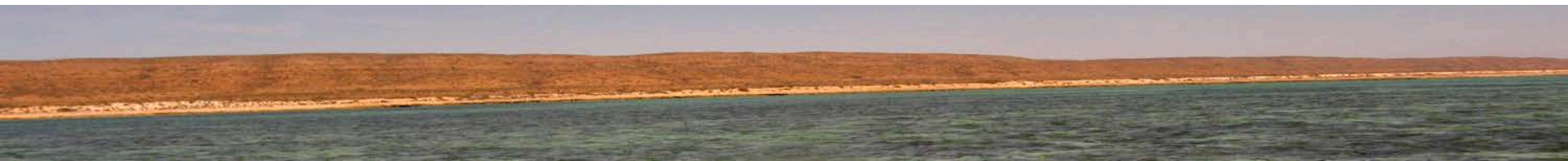






# Recent publications

1. **McLean DL, Langlois TJ**, Newman SJ, Holmes TH, Birt MJ, Bornt KR, Bond T, Collins DL, Evans SN, Travers MJ, Wakefield CB, Babcock RC, Fisher R (2016) Distribution, abundance, diversity and habitat associations of fishes across a bioregion experiencing rapid coastal development. *Estuarine, Coastal and Shelf Science* 178:36-47
2. Collins DL, **Langlois TJ, McLean DL**, Holmes TH, Fisher R, Harvey ES, Bond T (2016) A novel stereo-video method to investigate fish-habitat relationships. *Methods in Ecology and Evolution*.
3. Bennett K, Wilson S, Shedrawi G, **McLean DL, Langlois TJ** (2016) Can diver operated stereo-video surveys of fish be used to collect meaningful data on benthic coral reef communities? *Limnology and Oceanography: Methods*.
4. **Langlois TJ**, Sadler R, Fisher R, **McLean D**, Fitzpatrick B, Newman S, Meeuwig J, Harvey E (submitted) Evidence of competitive interactions from body-size distributions: Does fishing indirectly affect multiple size classes? Submitted to *Limnology and Oceanography: Methods*, November 2016.
5. **McLean DL, Langlois TJ**, Birt M, Harvey ES, Holmes T, Travers MJ, Wakefield CB, Newman S (submitted) Relationships between tropical fish assemblages, habitat structure and management zoning at the Montebello Islands, Western Australia. Submitted to *Marine Biology*, August 2016.





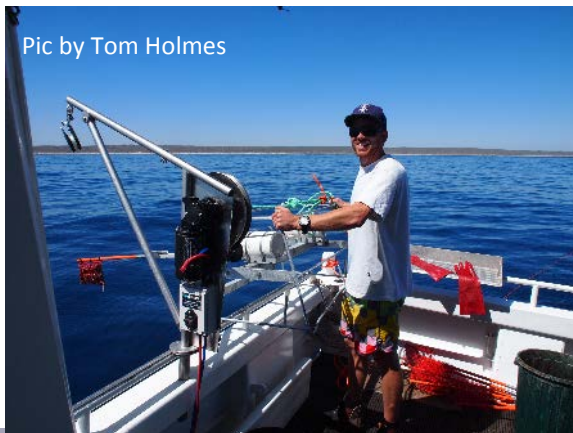


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Pic by Tom Holmes



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