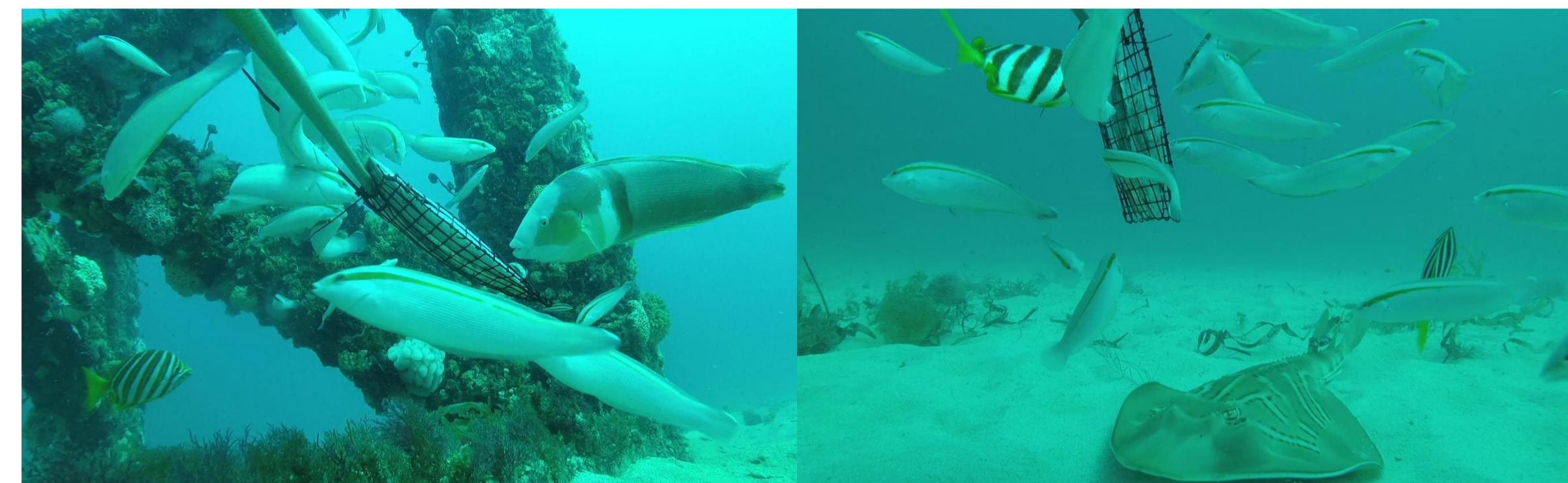


Recreational fishers can produce useful data for monitoring fish faunas on artificial reefs

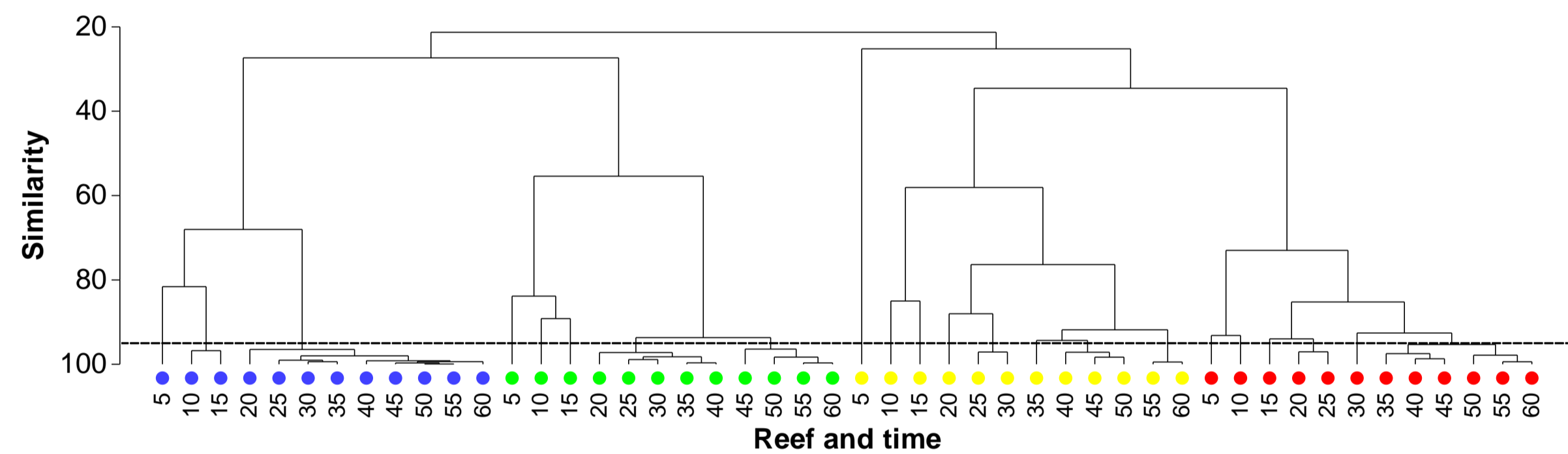
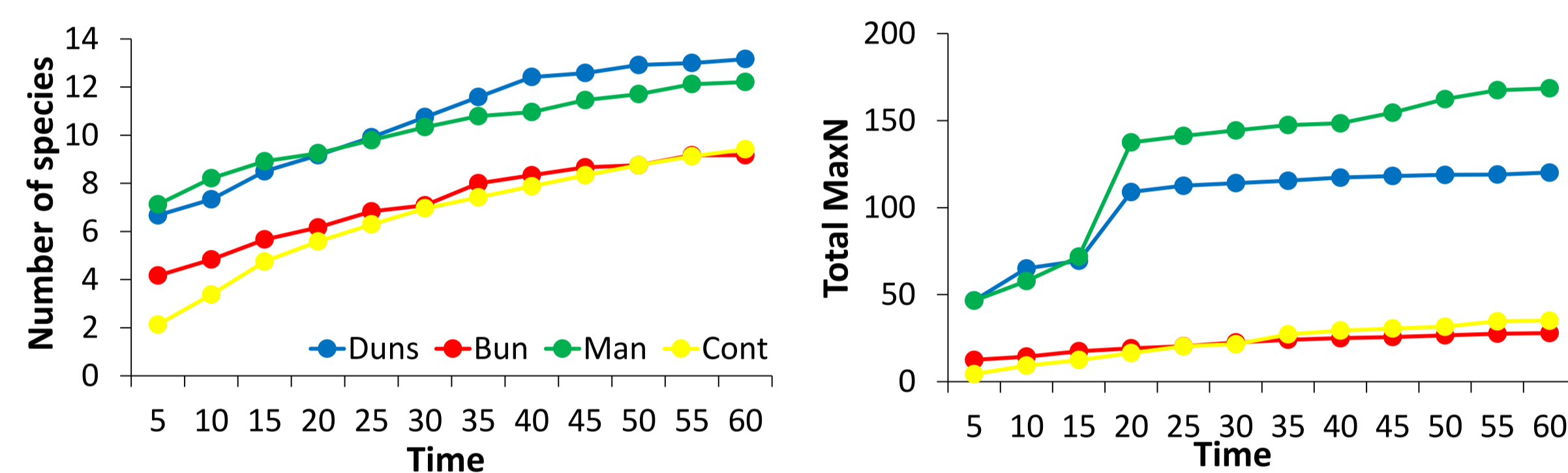
Scientifically robust citizen science monitoring of artificial reefs

Lachlan Ramm¹, James Florisson², Tim Walker¹, Stephanie Watts² & James Tweedley¹

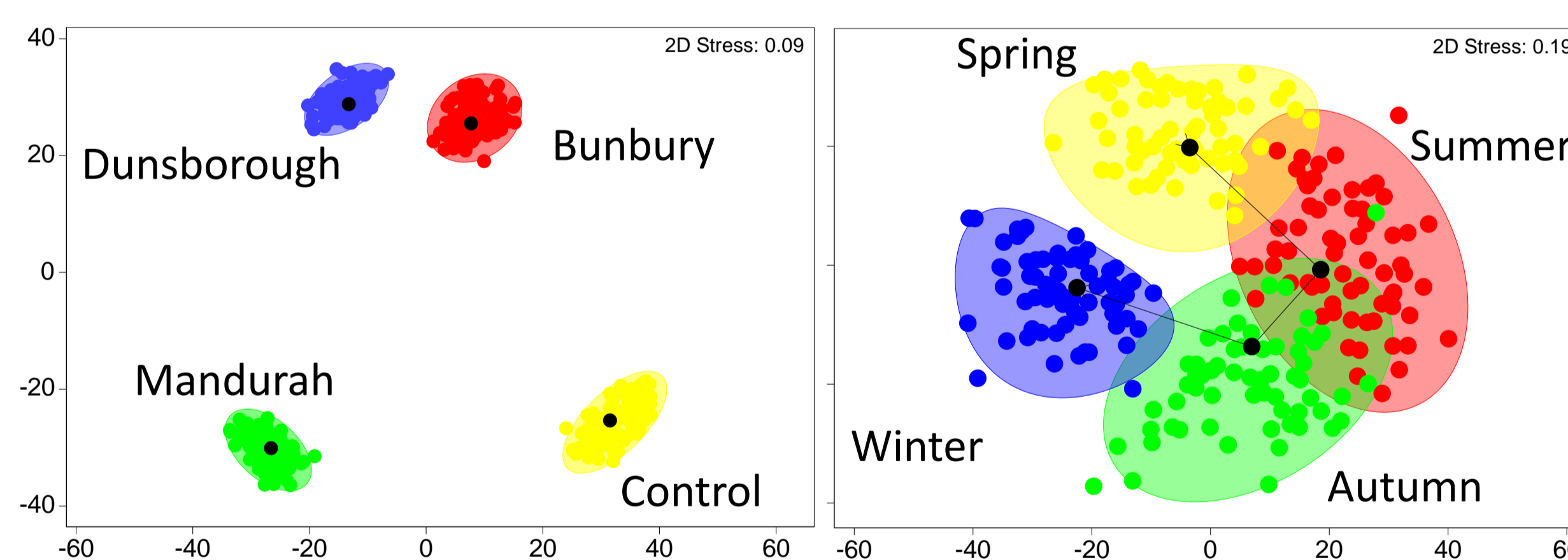
¹ Murdoch University, ² Recfishwest



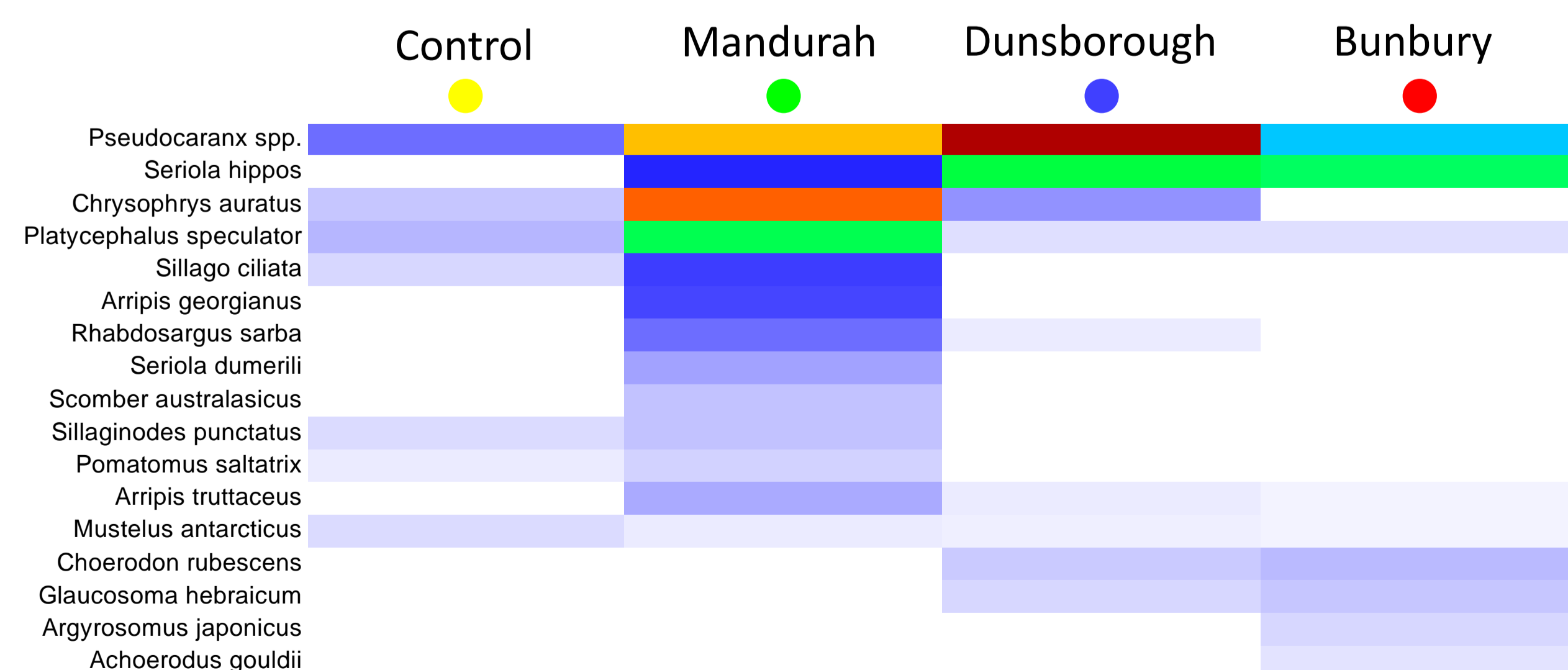
BRUV footage from the Mandurah reef and unstructured habitat



Mean no of species, total MaxN & faunal composition over time



Bootstrapped mMDS plots with 95% confidence regions of spatial and temporal trends in fish faunal composition



Shade plot of $\sqrt{\sqrt{x}}$ transformed MaxN of key recreational fish species

INTRODUCTION

- Artificial reefs are increasingly being used to enhance recreational fishing in Western Australia
- Legislative monitoring requirements can be cost prohibitive
- Aim 1:** Determine if recreational fishers generate cost-effective data & the BRUV video length needed to produce reliable results
- Aim 2:** Investigate spatial and temporal differences in the fish present on artificial reefs & nearby unstructured habitat

METHODS

- Establish *Reef Vision* citizen science program, where fishers deploy Baited Remote Underwater Video (BRUV) systems monthly
- Three artificial reefs in SW Australia (Bunbury ●, Dunsborough ● & Mandurah ●) and a control site (●) near the Mandurah reef
- Videos posted to scientists for data extraction & analysis

RESULTS

- > 150 videos submitted by recreational fishers
- 45 min BRUV deployments 'capture' ~95% of the mean no. of species, fish (Total MaxN) & fish fauna on the artificial reefs
- ↑ no. of species & fish on Mandurah & Dunsborough reefs
- Marked difference in fish fauna among all sites ($R = 0.687$; $P = 0.1\%$)
- ↑ no. of species & fish in summer/autumn than other seasons
- Cyclical seasonal shift in fish composition ($R = 0.141$; $P = 3.9\%$)
- ↑ abundances of recreationally-targeted fish species on artificial reefs (particularly Mandurah) than unstructured habitat

CONCLUSION

- Value in building partnerships with avid recreational fishers
- Initial evidence to suggest these artificial reefs have enhanced recreational fishing for key species

ACKNOWLEDGEMENTS Recreational fishers & tackle stores



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