

Langebaan Lagoon on Film: Using Underwater Cameras to Monitor Biodiversity

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Project by Cape Research Centre and West Coast National Park scientists, rangers
and environmental monitors, SANParks



Why monitor?

- The lagoon and its marine life are vital for healthy ecosystem and livelihoods
- Pressure on the lagoon from numerous sources
- Help to advance ecosystem understanding and provide the information needed to identify potential remedies

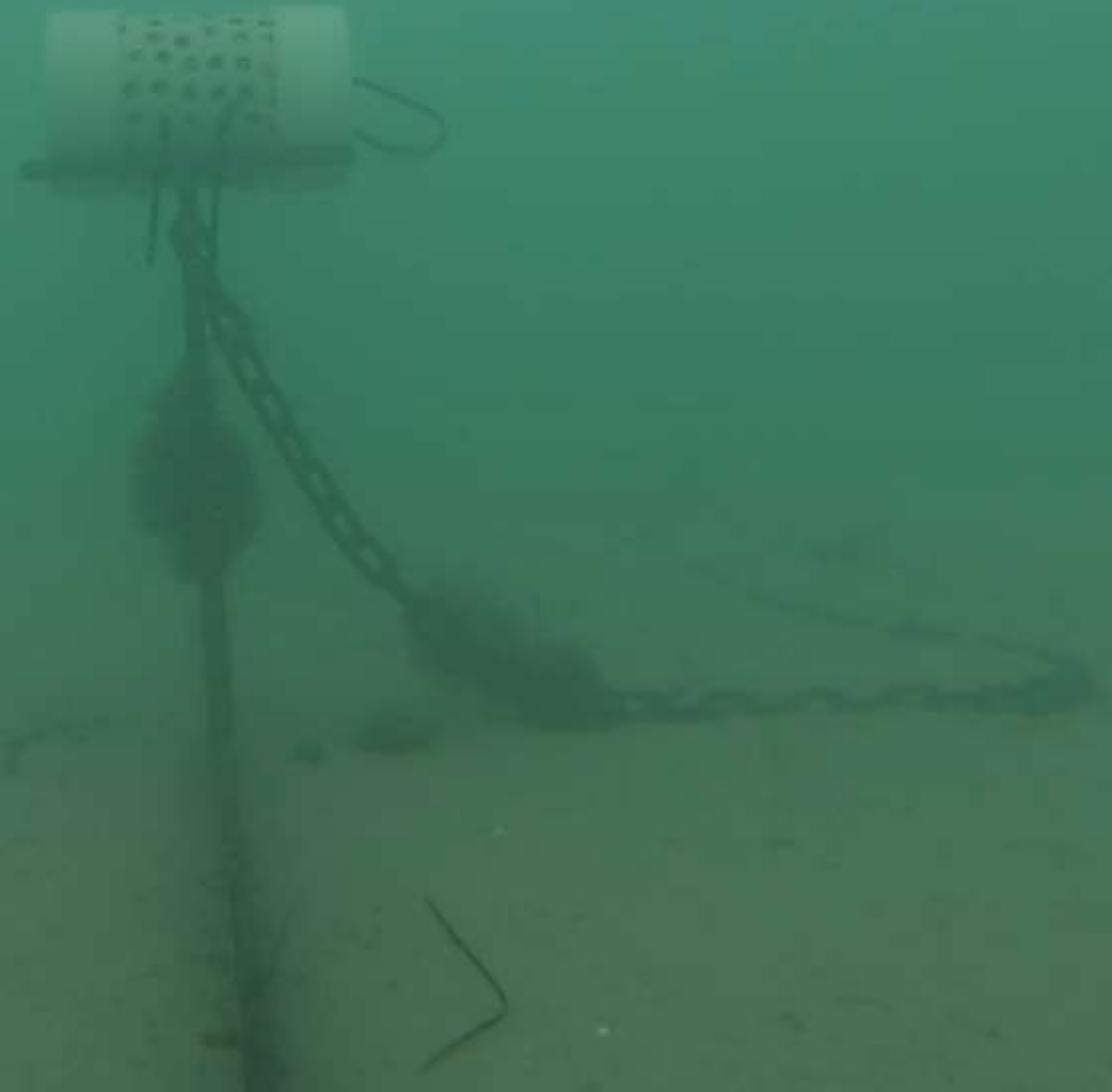
What are BRUVs?



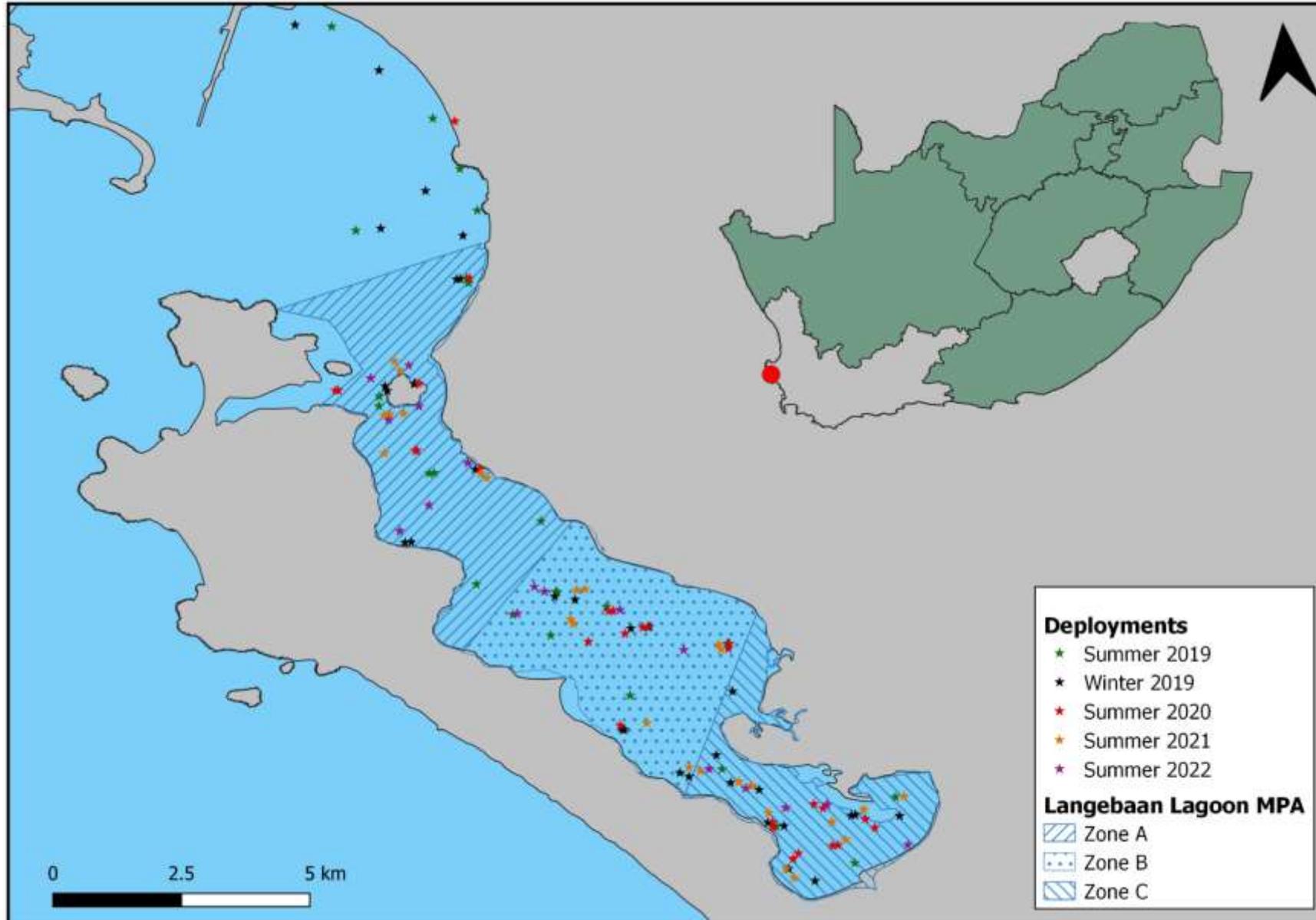
Deployment



Retrieval



Deployments across zones



Video analysis



VIEW FOOTAGE



DATA ANALYSIS

DATA ANALYSIS SHEETS

Date	Zone	Site	Site split	Video start	Video end	FOV	Family	Species	Scientific name	TOFS	MaxN	Time at MaxN	Vis	Depth	Temp	Habitat	Profile	Notes
11/12/2012	A	11	A	03:05	34:42	100	Sparidae	Steentjie		10:01	2	13:41	2	13	18	Reef	1	
11/12/2012	A	11	B	00:00	32:26	100	Sparidae	Strepie		03:14	51	04:05	2	13	18	Reef	1	







South African
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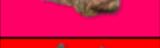
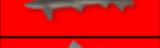
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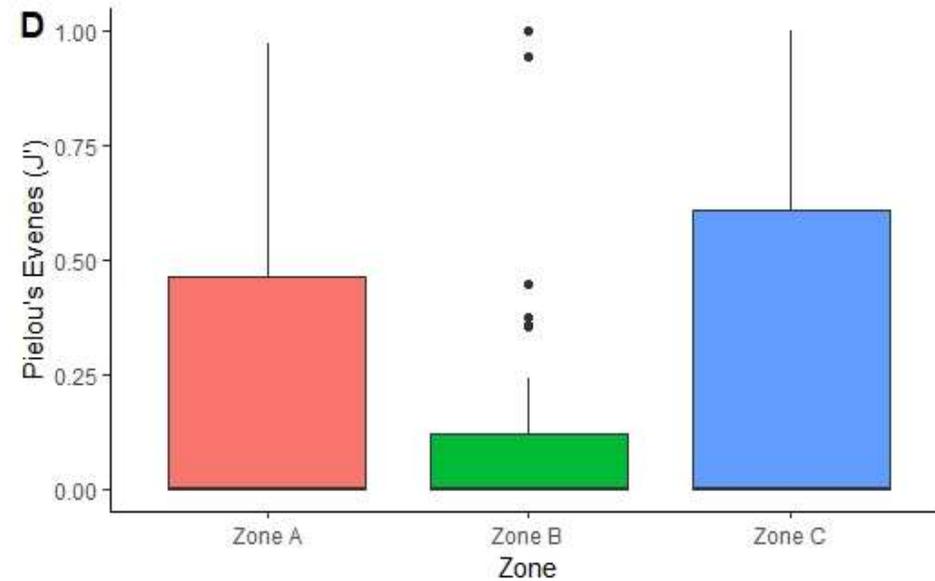
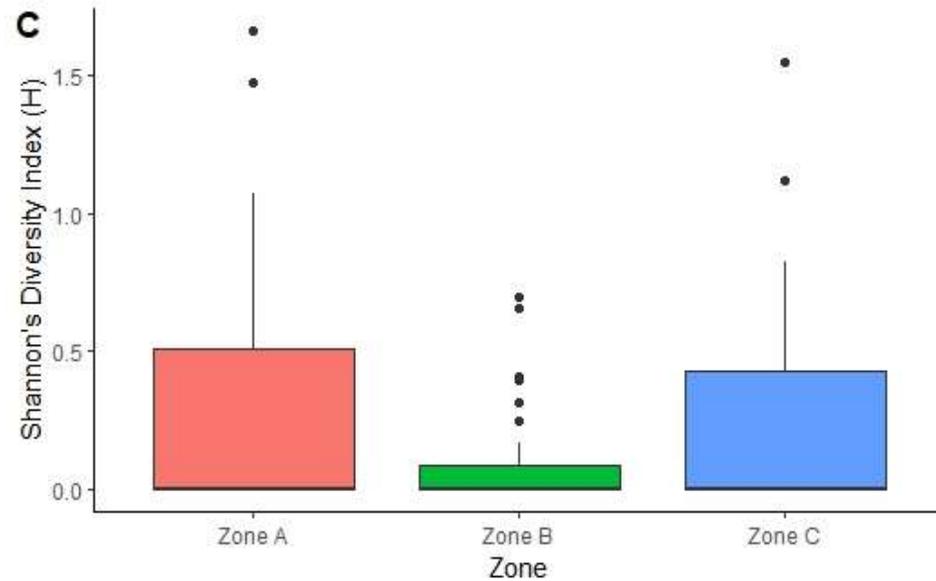
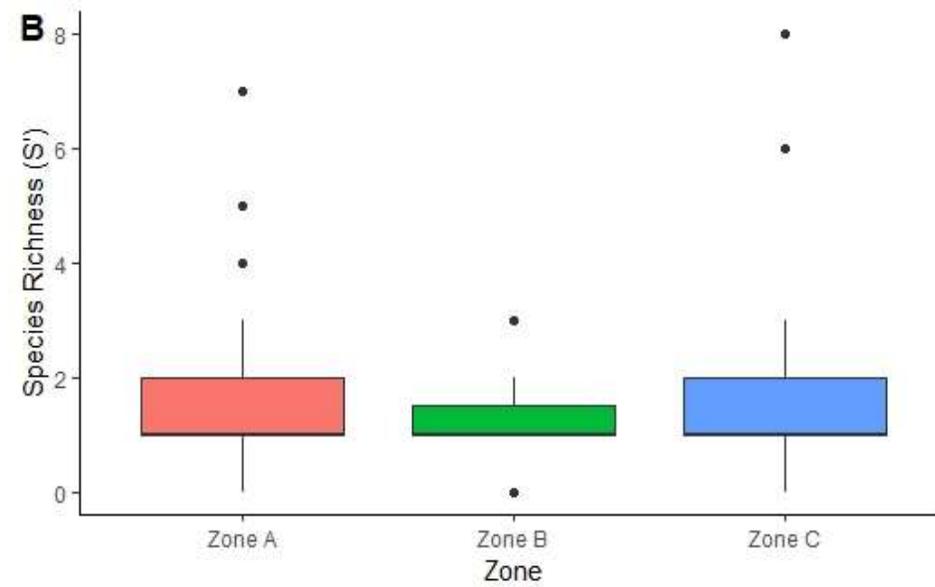
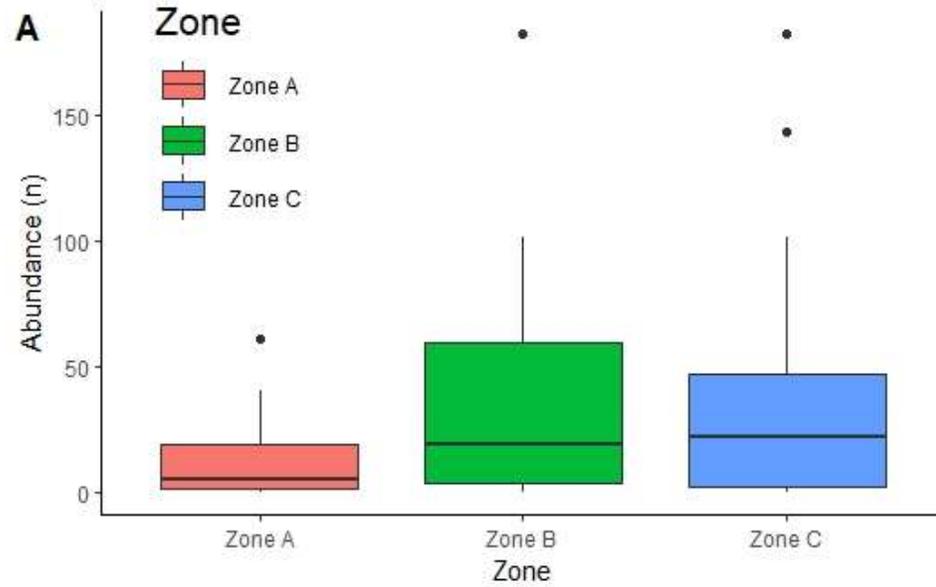


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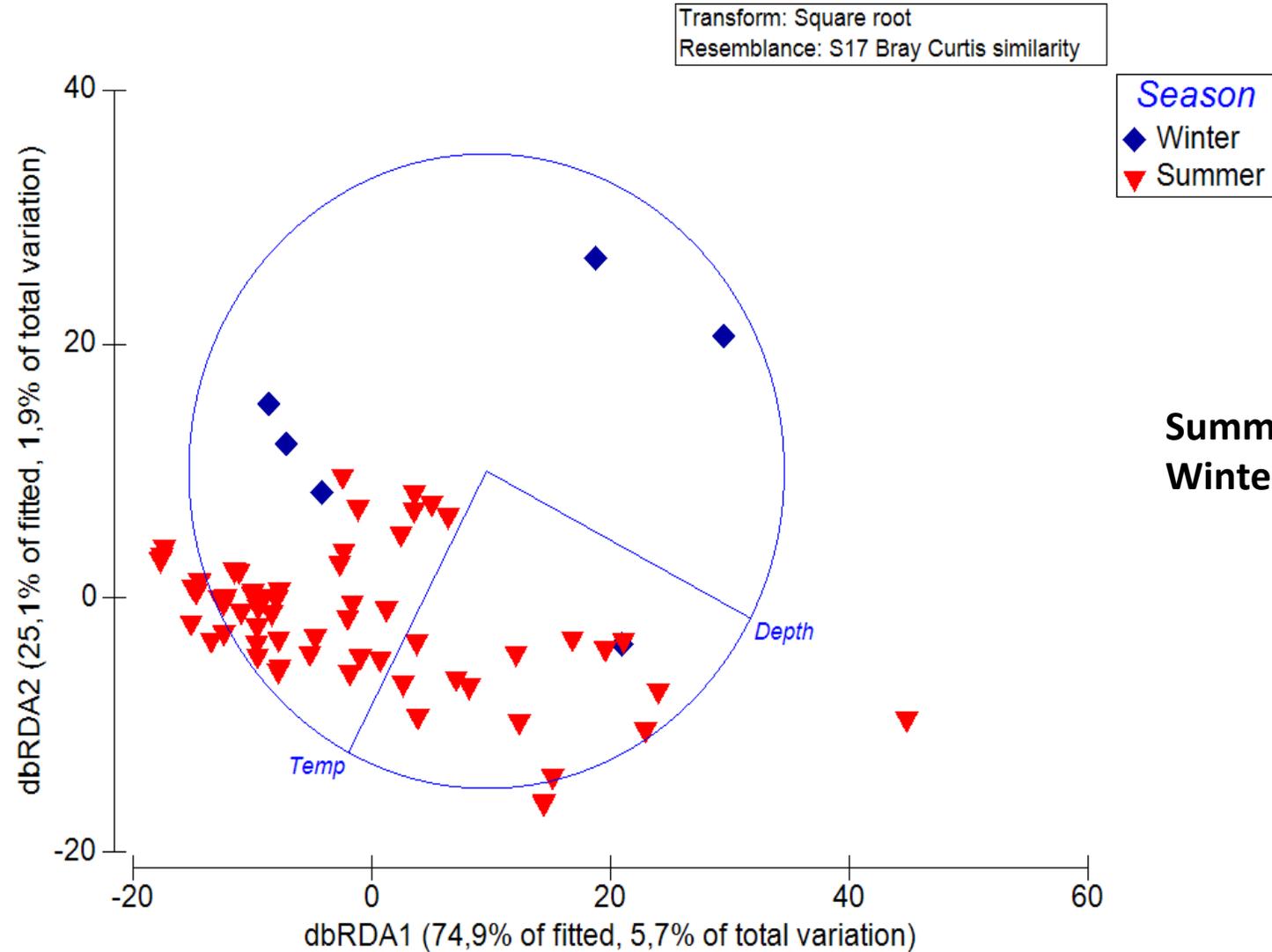
Species

No.	Family	Species	Scientific name	IUCN Status	Species ID	Total site	Relative abundance							
							Relative frequency		Zone A		Zone B		Zone C	
							summer	winter	summer	winter	summer	winter	summer	winter
1	Atherinidae	Cape silverside	<i>Atherina breviceps</i>	Not Evaluated		1719	0.44	0.21	3.55	0.14	11.27	0	8.68	0.07
2	Clinidae	Superklipfish	<i>Clinus superciliosus</i>	Least Concern		56	0.16	0	0.49	0	0.26	0	0.01	0
3	Sparidae	White stumpnose	<i>Rhabdosargus globiceps</i>	Vulnerable		137	0.21	0.14	1.91	0	0.21	0	0.46	0.07
4	Sparidae	Steentjie	<i>Spondylisoma emarginatum</i>	Least Concern		388	0.47	0.43	0.63	0.64	1.57	0	2.99	0
5	Sparidae	Blacktail	<i>Diplodus Capensis</i>	Least Concern		8	0.03	0	0	0	0	0	0.11	0
6	Sparidae	Strepie	<i>Sarpa salpa</i>	Least Concern		5	0.01	0	0	0	0	0	0.07	0
7	Sparidae	Hottentot	<i>Pachymetopon blochii</i>	Least Concern		9	0.01	0	0.12	0	0	0	0	0
8	Pomatomidae	Elf	<i>Pomatomus saltatrix</i>	Vulnerable		3	0.04	0	0	0	0	0	0.04	0
9	Carangidae	Cape horse mackerel	<i>Trachurus capensis</i>	Least Concern		11	0.01	0	0	0	0	0	0.22	0
10	Sepiidae	Cuttlefish	<i>Sepia vermiculata</i>	Data deficient		1	0.01	0	0	0	0	0	0	0
11	Ariidae	White seacatfish	<i>Galeichthys feliceps</i>	Not Evaluated		8	0.03	0	0.04	0	0.03	0	0.04	0
12	Triglidae	Doublesash butterflyfish	<i>Chaetodon marleyi</i>	Least Concern		3	0.04	0	0.01	0	0	0	0.03	0
13	Triglidae	Bluefin gurnard	<i>Chelidonichthys kumu</i>	Least Concern		8	0.07	0	0.05	0	0	0	0	0
14	Soleidae	Cape sole	<i>Heteromycteris capensis</i>	Near Threatened		1	0.01	0	0.01	0	0	0	0	0
15	Gobiidae	Knysna sandgoby	<i>Psammogobius knysnaensis</i>	Least Concern		1	0.01	0	0.01	0	0	0	0	0
16	Batrachoididae	Snakehead toadfish	<i>Batrachichthys apiatus</i>	Not Evaluated		1	0.01	0	0.01	0	0	0	0	0
17	Triakidae	Smooth-hound shark	<i>Mustelus mustelus</i>	Vulnerable		2	0.01	0	0.01	0	0.01	0	0	0
18	Rajidae	Spearnose skate	<i>Rostroraja alba</i>	Endangered		1	0	0.07	0	0	0	0.07	0	0
19	Scyliorhinidae	Puffadder shyshark	<i>Haploblepharus edwardsii</i>	Near Threatened		2	0.01	0.07	0	0	0	0.07	0.01	0

Trends by zone



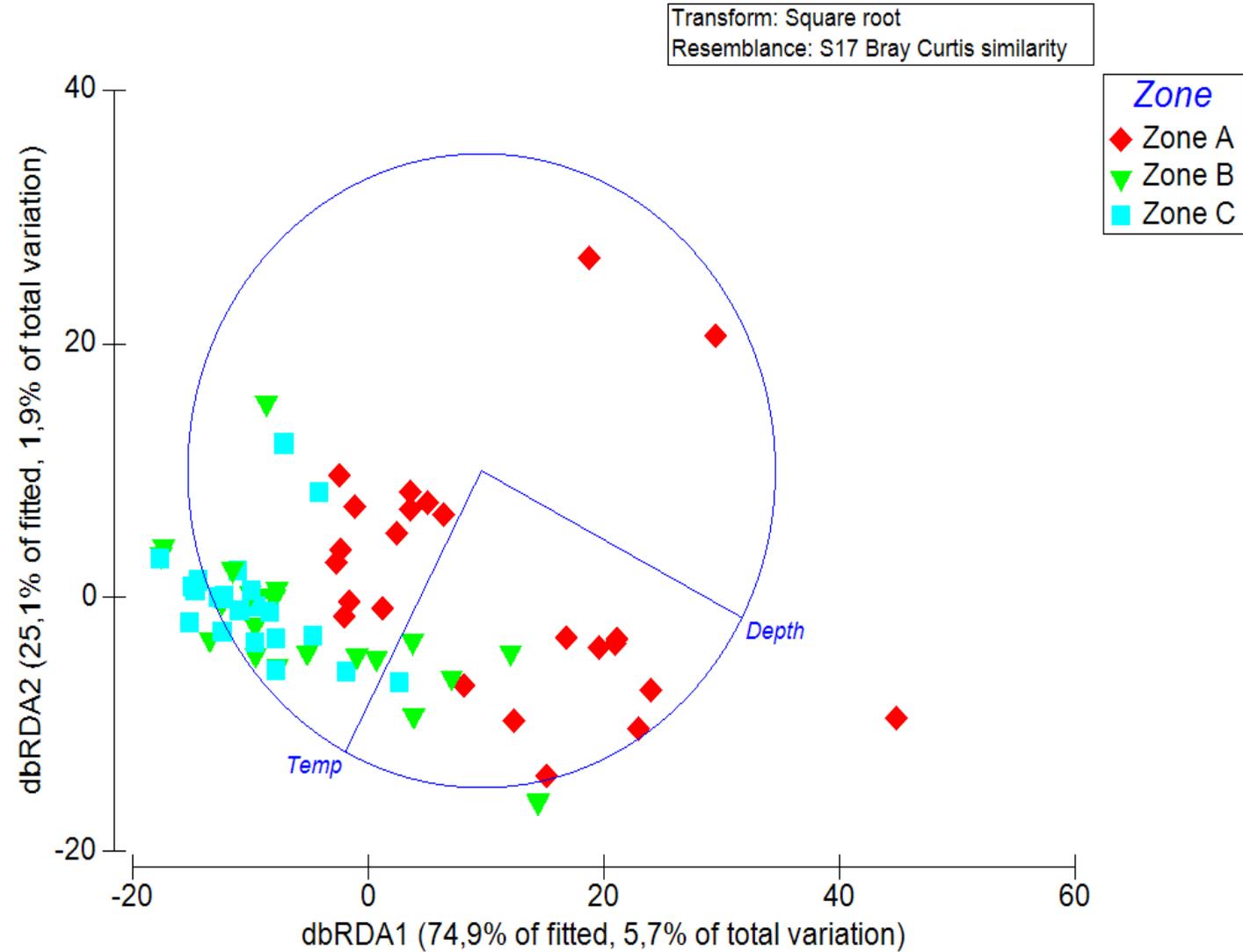
Seasonal communities



Summer = 17 species
Winter = 5 species

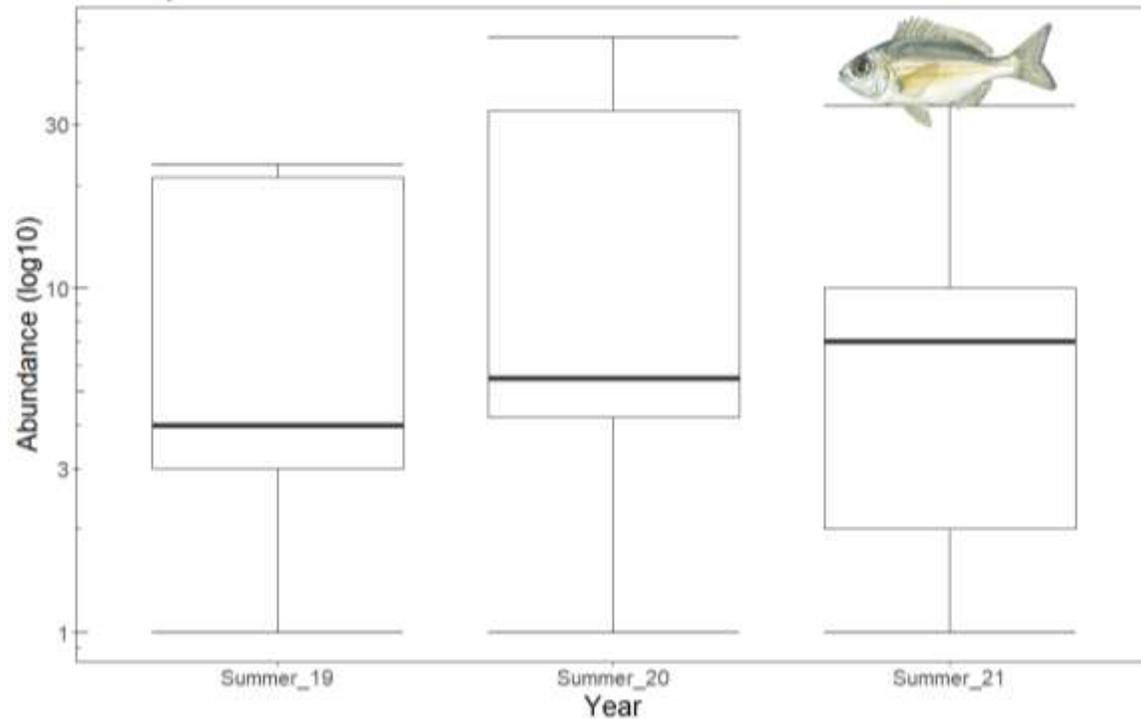


Communities by zone

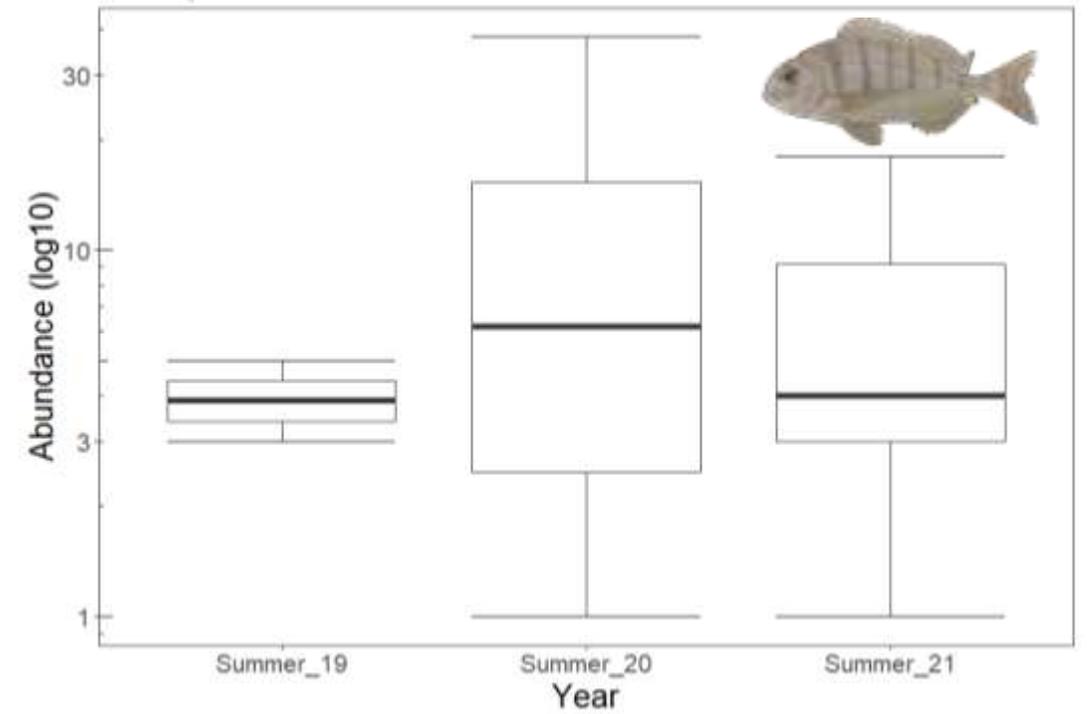


Species abundance trends

Steentjie



White stumpnose



Future work

- Annual summer deployments
- Stereo-BRUVs for size of fish
- Investigate deployments around offshore islands
- Deploy in 16 Mile Beach MPA



Thank you!



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