

Supplementary Information

Chondrichthyans as an umbrella species-complex for conserving South African biodiversity

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Table S1: The marine species observed by baited remote underwater videos (BRUVs) and their frequency of occurrence (FO) over the 167 sites along the South African coastline (i.e. at Walker Bay Whale Sanctuary and Betty's Bay Marine Protected Area, Western Cape Province), between July 2016 and July 2018. An asterisk (*) denotes a species found at sites with otherwise only chondrichthyans

Taxonomic group	Species	Common name	FO
Teleostei	<i>Pachymetopon blochii</i>	Hottentot seabream	0.653
	<i>Trachurus capensis</i>	Cape horse mackerel	0.599
	<i>Pterogymnus lanarius</i>	Panga	0.599
	<i>Argyrozona argyrozona</i>	Carpenter	0.503
	<i>Galeichthys feliceps</i>	White seacatfish	0.443
	<i>Chelidonichthys kumu</i>	Bluefin gurnard	0.437
	<i>Chrysoblephus laticeps</i>	Roman	0.437
	<i>Cheilodactylus fasciatus</i>	Redfingers*	0.359
	<i>Galeichthys ater</i>	Black seacatfish	0.311
	<i>Spondyliosoma emarginatum</i>	Steentjie	0.240
	<i>Clinus superciliosus</i>	Super klipfish*	0.222
	<i>Rhabdosargus globiceps</i>	White stumnose	0.198
	<i>Pachymetopon aeneum</i>	Blue hottentot*	0.168
	<i>Boopsoidea inornata</i>	Fransmadam*	0.138
	<i>Chrysoblephus gibbiceps</i>	Red stumnose*	0.132
	<i>Caesio xanthonota</i>	Yellowback fusilier*	0.108
	<i>Sarpa salpa</i>	Strepie*	0.102
	<i>Chirodactylus grandis</i>	Bank steenbras*	0.072
	<i>Petrus rupestris</i>	Red steenbras*	0.054
	<i>Chirodactylus brachydactylus</i>	Twotone fingerfin*	0.054
	<i>Cheilodactylus pixi</i>	Barred fingerfin	0.048
	<i>Caffrogobius nudiceps</i>	Barehead goby	0.036
	<i>Gymnocrotaphus curvidens</i>	Janbruin*	0.030
	<i>Diplodus capensis</i>	Blacktail*	0.024

	<i>Parascorpius typus</i>	Jutjaw*	0.018
	<i>Amblyrhynchotes honckenii</i>	Evileye blaasop*	0.012
	<i>Syngnathus temminckii</i>	Longsnout pipefish*	0.012
	<i>Argyrosomus inodorus</i>	Silver kob*	0.012
	<i>Umbrina robinsoni</i>	Slender baardman*	0.012
	<i>Congiopodis spinifer</i>	Spinynose horsefish*	0.012
	<i>Diplodus hottentotus</i>	Zebra*	0.012
	<i>Cyprinus gonorynchus</i>	Beaked sandfish*	0.006
	<i>Heteromycteris capensis</i>	Cape sole*	0.006
	<i>Dichistius capensis</i>	Galjoen*	0.006
	<i>Atractoscion aequidens</i>	Geelbek*	0.006
	<i>Seriola lalandi</i>	Giant yellowtail*	0.006
	<i>Pomatomus saltatrix</i>	Shad*	0.006
	<i>Halidesmus scapularis</i>	Snakelet*	0.006
	<i>Epinephelus marginatus</i>	Yellowbelly rock cod*	0.006
Myxinidae	<i>Eptatretus hexatrema</i>	Sixgill hagfish	0.260
Crustacea	<i>Jasus lalandii</i>	West coast rock lobster	0.569
	<i>Portunus sanguinolentus</i>	Three-spotted swimming crab	0.353
	Anomura	Hermit crab	0.156
	<i>Guinusia chabrus</i>	Cape rock crab*	0.066
	<i>Nautilocorystes ocellata</i>	Masked crab	0.054
	<i>Mursia cristiata</i>	Masked crab	0.042
	<i>Danielita edwardsii</i>	Sandflat crab*	0.006
Cephalopoda	<i>Octopus vulgaris</i>	Common octopus	0.180
	<i>Loligo reynaudii</i>	Chokka-squid*	0.048
Aves	<i>Spheniscus demersus</i>	African penguin	0.030
	<i>Phalacrocorax capensis</i>	Cape cormorant*	0.006
Mammalia	<i>Arctocephalus pusillus</i>	Cape fur seal	0.084

Table S2: The top-five species in the marine community of chondrichthyans, teleosts, crustaceans, cephalopods, birds, and mammals observed on our baited remote underwater videos, set at Walker Bay Whale Sanctuary and Betty’s Bay Marine Protected Area, Western Cape Province, South Africa, by each measure of network centrality, and ordered by their value for that index. Each measure of centrality is based on the number of positive, negative, and random co-occurrences of the species with other species

Centrality measure	Value
Degree centrality	
<i>Haploblepharus edwardsii</i>	63
<i>Poroderma africanum</i>	63
<i>Pachymetopon blochii</i>	63
<i>Jasus lalandii</i>	62
<i>Haploblepharus pictus</i>	61
Betweenness centrality	
<i>H. edwardsii</i>	78.8
<i>Trachurus capensis</i>	68.1
<i>P. africanum</i>	62.9
<i>J. lalandii</i>	57.2
<i>P. blochii</i>	54.9
Local bridging centrality	
<i>H. edwardsii</i>	142.8
<i>P. africanum</i>	134.6
<i>P. blochii</i>	128.6
<i>J. lalandii</i>	124.8
<i>T. capensis</i>	120.5
Closeness centrality	
<i>H. edwardsii</i>	0.0133
<i>P. africanum</i>	0.0133
<i>P. blochii</i>	0.0133
<i>J. lalandii</i>	0.0132
<i>H. pictus</i>	0.0130
Eigenvalue centrality	
<i>P. blochii</i>	1.00
<i>P. africanum</i>	0.99
<i>J. lalandii</i>	0.98
<i>H. edwardsii</i>	0.98
<i>H. pictus</i>	0.97