

S3 Table. Fish species detected by metabarcoding of ichthyoplankton collected over the continental shelf of eastern South Africa, and verification of adult distribution ranges, habitats, and occurrence in different ocean zones. Barcode records on the BOLD database were used for species identification.

The % similarity to barcode sequences is shown for each species, as well as the accession numbers, geographical origin and number of sequences available on BOLD. The WoRMS, OBIS and GBIF online databases were consulted to confirm the distribution range (Endemic = Endemic to the southwest Indian Ocean; WIO = Western Indian Ocean, including north of the equator; IWP = Indo-West Pacific), habitat and ocean zone frequented by individual species.

No.	Order	Family	Species	% similarity	BIN (BOLD)	Records (n), location collected	Known distribution range	Datasets consulted (WoRMS, GBIF, OBIS, etc)	Adult habitats	Ocean zone	Distribution range
1	Labriformes	Labridae	<i>Anampses caeruleopunctatus</i>	100	BOLD:AAB9969	(55) South Africa, Indonesia	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	IWP
2	Kurtiformes	Apogonidae	<i>Apogon semiornatus</i>	100	BOLD:AAD2206	(25) South Africa, Madagascar	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	IWP
3	Scombriformes	Ariommatidae	<i>Ariomma indicum (indica)</i>	100	BOLD:ACF5823; BOLD:AAB5941	(86) South Africa, India	WIO, South Africa	OBIS; GBIF	Benthopelagic	Neritic	IWP
4	Myctophiformes	Myctophidae	<i>Bentosema pterotum</i>	99.02	BOLD:AAM9344	(25) Indonesia	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	IWP
5	Myctophiformes	Myctophidae	<i>Bentosema suborbitale</i>	100	BOLD:AAI8542	(31) Cayman Island	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
6	Perciformes	Caesionidae	<i>Caesio caeruleaurea</i>	100	BOLD:ABZ2197	(87) WIO, Indonesia	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic_inshore	IWP
7	Callionymiformes	Callionymidae	<i>Callionymus marleyi</i>	99.67	BOLD:AAW8707	(7) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic_inshore	WIO
8	Beryciformes	Berycidae	<i>Centroberyx spinosus</i>	100	BOLD:AAF8778	(10) South Africa	South Africa	OBIS; GBIF	Benthopelagic	Neritic	Endemic
9	Scombriformes	Centrolophidae	<i>Centrolophus niger</i>	100	BOLD:AAC3522	(11) South Africa	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
10	Ovalentaria	Pomacentridae	<i>Chromis dasygenys</i>	100	BOLD:AAJ5401	(3) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	Endemic
11	Ovalentaria	Pomacentridae	<i>Chromis opercularis / Chromis weberi</i>	100	BOLD:ACF0042	(13) South Africa, Mozambique	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	WIO
12	Scorpaeniformes	Platycephalidae	<i>Cociella heemstrai</i>	97.52	BOLD:AAD7871	(24) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	WIO

13	Scombriformes	Nomeidae	<i>Cubiceps whiteleggii</i>	99,51	BOLD:AAB5183	(63) South Africa, Australia	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	IWP
14	Stomiiformes	Gonostomatidae	<i>Cyclothone acclinidens</i>	100	BOLD:AAU0299	(29) Atlantic Ocean	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
15	Stomiiformes	Gonostomatidae	<i>Cyclothone microdon</i>	100	BOLD:AAB4944	(50) Canada	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
16	Pleuronectiformes	Cynoglossidae	<i>Cynoglossus lida</i>	100	BOLD:AAC0744; BOLD:AAB8676	(49) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	IWP
17	Carangiformes	Carangidae	<i>Decapterus macarellus</i>	100	BOLD:AAC4792	(245) South Africa, Indonesia, Philippines	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	Circumglobal
18	Carangiformes	Carangidae	<i>Decapterus macrosoma</i>	100	BOLD:ADI4344	(334) South Africa, Malaysia, Philippines	WIO, South Africa	WoRMS; OBIS; GBIF	Epipelagic	Neritic	IWP
19	Carangiformes	Carangidae	<i>Decapterus russelli</i>	100	BOLD:AAB6796	(154) South Africa	WIO, South Africa	WoRMS; OBIS; GBIF	Epipelagic	Neritic	IWP
20	Myctophiformes	Myctophidae	<i>Diaphus richardsoni</i>	100	BOLD:AAE0839	(31) Australia, Indian Ocean	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
21	Perciformes	Caesionidae	<i>Dipterygonotus balteatus</i>	100	BOLD:AAD3666	(36) South Africa, Indonesia	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	IWP
22	Acanthuriformes	Emmelichthyidae	<i>Emmelichthys nitidus</i>	100	BOLD:AAE9975; BOLD:AAE9976	(63) South Africa, Australia	South Africa, Pacific Ocean	OBIS; GBIF	Benthopelagic	Neritic	Circumglobal (S)
23	Clupeiformes	Engraulidae	<i>Encrasicholina punctifer</i>	100	BOLD:AAF8837	(124) South Africa, China	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	IWP
24	Clupeiformes	Engraulidae	<i>Engraulis capensis</i>	100	BOLD:AAB2317	(162) South Africa, China	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	WIO
25	Clupeiformes	Clupeidae	<i>Etrumeus whiteheadi</i>	100	BOLD:AAC3892	(21) South Africa	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	WIO
26	Clupeiformes	Clupeidae	<i>Etrumeus wongratanai</i>	100	BOLD:AAC2444	(28) South Africa	WIO, South Africa	GBIF	Epipelagic	Neritic	WIO
27	Labriformes	Labridae	<i>Halichoeres cosmetus</i>	100	BOLD:AAC1194	(16) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	IWP
28	Myctophiformes	Myctophidae	<i>Hygophum hygomii</i>	100	BOLD:AAC6495	(63) Atlantic Ocean, Indian Ocean	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
29	Myctophiformes	Myctophidae	<i>Lampanyctus australis</i>	100	BOLD:AAC0460	(49) Atlantic Ocean, Tasman Sea	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal (S)

30	Myctophiformes	Myctophidae	<i>Lampanyctus lepidolychnus</i>	99,67	BOLD:AAB3 777	(42) South Africa, Canada	South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal (S)
31	Myctophiformes	Myctophidae	<i>Lobianchia gemellarii</i>	99,67	BOLD:AAC7 797	(36) Atlantic Ocean, Indian Ocean	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
32	Aulopiformes	Notosudidae	<i>Luciosudis normani</i>	100	BOLD:AAK6 733	(6) New Zealand	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal (S)
33	Stomiiformes	Sternoptychidae	<i>Maurolicus walvisensis</i>	100	BOLD:AEH5 284	(40) Atlantic Ocean, Indian Ocean	South Africa	OBIS; GBIF	Mesopelagic	Oceanic	WIO
34	Perciformes	Monodactylidae	<i>Monodactylus argenteus</i>	100	BOLD: AAA9698; BOLD:AAA9 699	(81) South Africa, Madagascar	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic_inshore	IWP
35	Perciformes	Monodactylidae	<i>Monodactylus falciformis</i>	100	BOLD:AAE4 819	(16) South Africa	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic_inshore	IWP
36	Myctophiformes	Myctophidae	<i>Myctophum selenops</i>	99,51	BOLD:AAU3 494	(27) Indian Ocean	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
37	Scombriformes	Gempylidae	<i>Nealotus tripes</i>	96,33	BOLD:AAC6 290	(40) Canada	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
38	Myctophiformes	Myctophidae	<i>Notolychnus valdiviae</i>	100	BOLD:AAF26 98	(40) Atlantic Ocean, Pacific Ocean	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal
39	Anguilliformes	Ophichthidae	<i>Ophisurus serpens</i>	99,51	BOLD:AAE1 881; BOLD:ADO0 383	(27) South Africa, Indonesia	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	IWP
40	Blenniiformes	Blenniidae	<i>Parablennius pilicornis</i>	100	BOLD:AAF78 33	(16) South Africa	South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	WIO
41	Labriformes	Labridae	<i>Paracheilinus mccoskeri</i>	100	BOLD:AAE2 895	(12) Sri Lanka	WIO	OBIS	Benthic-reef	Neritic_inshore	IWP
42	Trachiniformes	Pinguipedidae	<i>Parapercis somaliensis</i>	98,99	BOLD:AAI57 93	(1) South Africa	WIO	OBIS; GBIF	Benthic-soft	Neritic	WIO
43	Perciformes	Mullidae	<i>Parupeneus fraserorum</i>	99,51	BOLD:AAF87 76	(31) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	Endemic
44	Perciformes	Haemulidae	<i>Plectorhinchus flavomaculatus</i>	100	BOLD:AAC4 020	(27) South Africa, Madagascar	WIO, South Africa	WoRMS; OBIS; GBIF	Benthic-reef	Neritic_inshore	IWP
45	Perciformes	Haemulidae	<i>Pomadasys olivaceus</i>	100	BOLD:AAD1 379	(42) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic_inshore	WIO
46	Perciformes	Haemulidae	<i>Pomadasys striatus</i>	100	BOLD:AAD1 385	(19) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	Endemic
47	Mugiliformes	Mugilidae	<i>Pseudomyxus capensis</i>	100	BOLD:AAC5 938	(21) South Africa	South Africa	OBIS; GBIF	Benthic-soft	Neritic_inshore	Endemic
48	Pleuronectiformes	Paralichthyidae	<i>Pseudorhombus elevatus</i>	100	BOLD:AAB6 447; BOLD:AAB6 448	(36) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	IWP

49	Kurtiformes	Apogonidae	<i>Rhabdamia gracilis</i>	100	BOLD:AAC9 583	(33) China	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	IWP
50	Clupeiformes	Clupeidae	<i>Sardinella gibbosa</i>	100	BOLD:AAB7 263; BOLD:AAB7 262	(201) Israel, Thailand, Mozambique	WIO, South Africa	WORMS; OBIS; GBIF	Epipelagic	Neritic	IWP
51	Clupeiformes	Clupeidae	<i>Sardinops sagax</i>	99,67	BOLD:AAB6 180	(141) South Africa, Australia	WIO, South Africa	WoRMS; OBIS; GBIF	Epipelagic	Neritic	Circumglobal
52	Aulopiformes	Synodontidae	<i>Saurida cf undosquamis</i>	100	BOLD:AAB1 853; BOLD:ACG7 154; BOLD:AAD1 070; BOLD:AAB1 852; BOLD:AAB1 856	(170) South Africa, Australia, India	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	WIO
53	Blenniiformes	Blenniidae	<i>Scartella emarginata</i>	100	BOLD:AAE4 361	(9) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	IWP
54	Scombriformes	Scombridae	<i>Scomber japonicus</i>	100	BOLD:AAA5 957	(227) South Africa, Turkey	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	IWP
55	Myctophiformes	Myctophidae	<i>Scopelopsis multipunctatus</i>	100	BOLD:AAD1 092	(26) South Africa	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal (S)
56	Aulopiformes	Notosudidae	<i>Scopelosaurus hamiltoni</i>	100	BOLD:AAI07 83; BOLD:AAI07 84	(6) Australia	South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal (S)
57	Perciformes	Serranidae	<i>Serranus cabrilla</i>	100	BOLD:AAD1 027	(128) Turkey	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic	Endemic
58	Spariformes	Sillaginidae	<i>Sillago sihama</i>	100	BOLD:AAA7 603	(5) South Africa	WIO	GBIF	Benthic-soft	Neritic_inshore	IWP
59	Scorpaeniformes	Platycephalidae	<i>Sorsogona portuguesa</i>	100	BOLD:AAF87 84	(21) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	Endemic
60	Istiophoriformes	Sphyraenidae	<i>Sphyraena chrysotaenia</i>	100	BOLD:AAD0 400	(61) South Africa, Mozambique	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	IWP
61	Spariformes	Sparidae	<i>Spicara australis</i>	100	BOLD:AAO4 385	(4) South Africa	WIO, South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Endemic
62	Spariformes	Sparidae	<i>SpondylIOSoma emarginatum</i>	100	BOLD:ABZ61 75	(13) South Africa	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	Endemic
63	Labriformes	Labridae	<i>Stethojulis albovittata</i>	100	BOLD:AAD4 824	(31) Mozambique, Reunion	WIO, South Africa	OBIS; GBIF	Benthic-reef	Neritic_inshore	WIO
64	Stomiiformes	Stomiidae	<i>Stomias boa</i>	99,67	BOLD:AAB1 180	(86) South Africa, Canada	South Africa	OBIS; GBIF	Mesopelagic	Oceanic	Circumglobal

65	Carangiformes	Carangidae	<i>Trachurus delagoa</i>	100	BOLD:AAA8 614	(55) South Africa	WIO, South Africa	OBIS; GBIF	Epipelagic	Neritic	Endemic
66	Acanthuriformes	Sciaenidae	<i>Umbrina robinsoni</i> <i>/Umbrina</i> <i>canariensis</i>	100	BOLD:AAE0 529	(12) South Africa	South Africa	OBIS; GBIF	Benthic-reef	Neritic	WIO
67	Perciformes	Mullidae	<i>Upeneus guttatus</i>	100	BOLD:AAB9 327	(113) Indonesia, Vietnam	WIO, South Africa	OBIS; GBIF	Benthic-soft	Neritic	IWP