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An annotated checklist of the chondrichthyans of South Africa

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Abstract

An annotated checklist of chondrichthyan fishes (sharks, batoids, and chimaeras) occurring in South African waters is presented. The checklist is the result of decades of research and on-going systematic revisions of the regional fauna. The chondrichthyan fauna of South Africa is one of the richest in the world with 191 species, comprising 50 families and 103 genera. It consists of 30 families, 64 genera, and 111 species of sharks; 17 families, 36 genera, and 72 species of batoids; and, 3 families, 5 genera, and 8 species of chimaeras. The most species-rich shark families are the whaler sharks Carcharhinidae with 20 species followed by the deepwater catsharks Pentanchidae with 13 species. The most species-rich batoid families are the hardnose stakes Rajidae with at least 21 species followed by the stingrays Dasyatidae with 13 species. This monograph represents the first detailed annotated checklist of chondrichthyans from South Africa in over 30 years.

Key words: Biodiversity, Sharks, Batoids, Chimaeras, Southeastern Atlantic Ocean, Western Indian Ocean

Introduction

South Africa has one of the most diverse and richest chondrichthyan faunas in the world. The country ranks among the top five nations with 191 species (Table 1). It ranks behind Australia (n = 329 species), Indonesia (n = 221), Japan (n = 212), and Brazil (n = 210), in terms of species diversity (Table 1). These other countries, however, encompass a much greater geographic area than the seas surrounding South Africa (Figure 1). Interestingly, all five countries have two or more ocean current ecosystems bounding them. South Africa has the cold Benguela Current on the west coast and the warm Agulhas Current on the east coast. These two major currents have a profound influence on the diversity of species on each coast, with the east coast being more diverse than the west coast (Ebert & van Hees, 2015); Cape Point (18°42'E) is the approximate demarcation point between these two large marine ecosystem currents (Figure 1). See Ebert & van Hees (2015) for further discussion of the chondrichthyan diversity between these two currents.

South Africa has had an active chondrichthyan research community dating back to Andrew Smith in the early 19th Century. Compagno (1999) provides a historical review of chondrichthyan research in South Africa. Despite the rich historical tradition of chondrichthyan research, there are no recent reviews of South Africa's unique and diverse chondrichthyan fauna. Most publications on regional chondrichthyan diversity usually refer to 'southern Africa' including Namibia and Mozambique (Compagno *et al*., 1989; Compagno, 1999; Ebert & van Hees, 2015) or encompasses an expanded area of the east African coast to Tanzania, Kenya, Madagascar, and some of the Western Indian Ocean (WIO) islands (e.g. Bass *et al*., 1973, 1975a, b, c, d, 1976; Wallace 1967a, b, c; Smith & Heemstra,

1986a). Among the individual regional countries, South Africa has the highest diversity followed by Mozambique and Madagascar, with 122 and 118 species, respectively (Table 1).

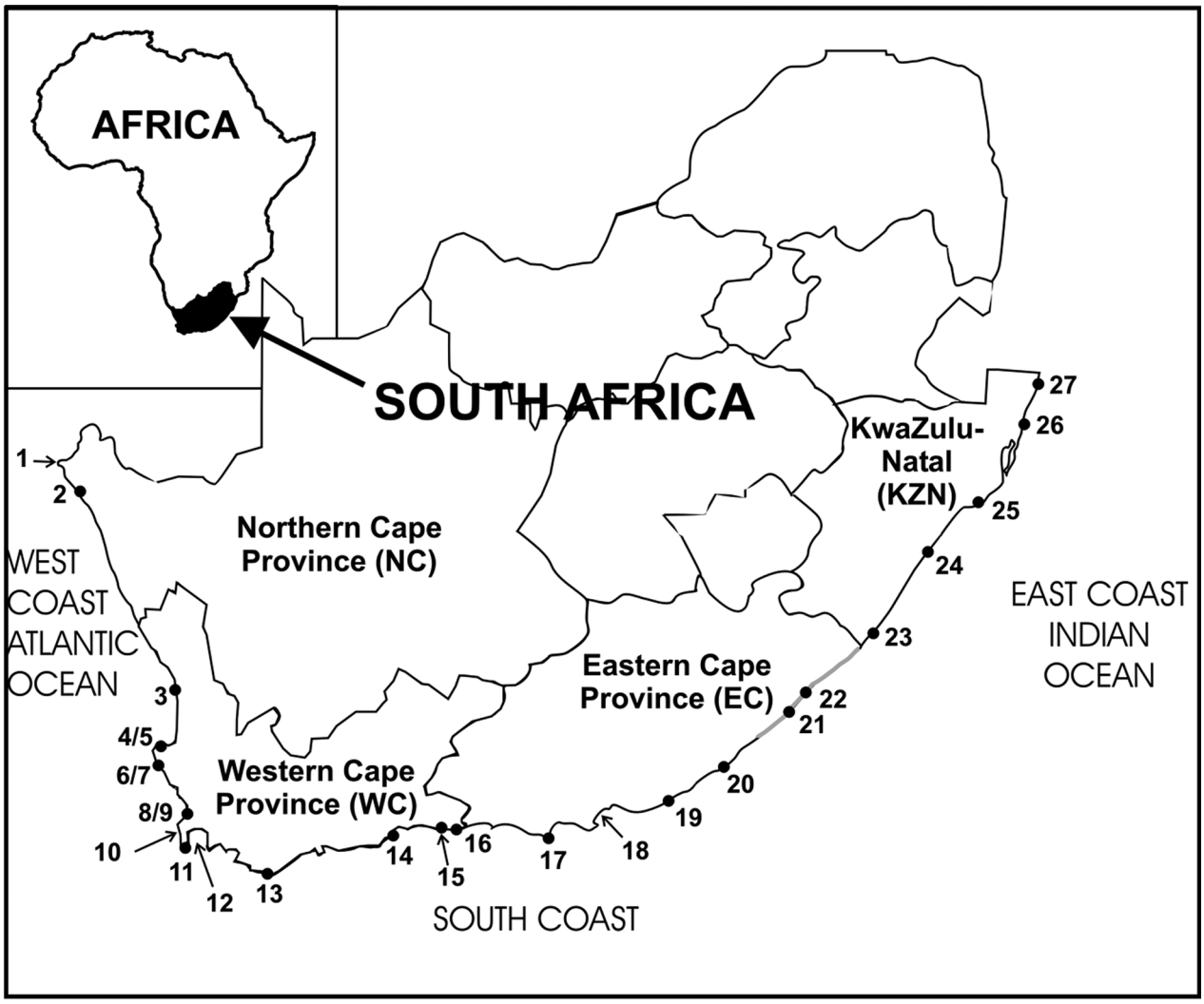

FIGURE 1. Map showing localities mentioned in the text. 1 = Orange River, 2 = Port Nolloth, 3 = Doring Bay, 4 = St. Helena Bay, 5 = Cape Columbine, 6 = Saldana Say, 7 = Langebaan Lagoon, 8 = Cape Town, 9 = Table Bay, 10 = Cape Peninsula, 11 = Cape Point, 12 = False Bay, 13 = Cape Agulhas, 14 = Mossel Bay, 15 = Knysna, 16 = Plettenberg Bay, 17 = Cape St. Francis, 18 = Algoa Bay, 19 = Port Alfred, 20 = East London, 21 = Coffee Bay, 22 = Port St. Johns, 23 = Port Shepstone, 24 = Durban, 25 = Richards Bay, 26 = Sodwana Bay, 27 = Kosi Bay. The grey line depicts the former Transkei coast.

Globally, about 15% of all chondrichthyan species occur in South African waters (Table 2). In addition to the rich species composition, 13 of 14 orders, 50 of 66 families, and 103 of 215 genera are represented (Table 2). Shark families are represented by over 80% of all families (30 of 37), while 65% (17 of 26) of batoid families, and all three chimaera families are represented in South African waters. Genera are also well represented with 60% (64 of 106) of the shark, 35% (36 of 103) of the batoid, and 83% (5 of 6) of the chimaera genera being represented. The number of shark species represented is about 20% of the global total (111 of 544 species), while the number of batoid species is over 10% (72 of 665) and about 15% (8 of 52) for chimaera species (Table 2).

A diversity of families, genera, and species has been described from South Africa. At least four families, one shark and three batoid, have been described including the Whale Shark (family Rhincodontidae Smith, 1829), with three families still considered valid (Table 3). Additionally, 20 genera have been described of which 14 are still valid. This includes 12 shark and eight batoid genera, with eight and six genera, respectively, still valid.

TABLE 1. Top 30 regions/countries with high biodiversity of sharks, batoids, and chimaeras. Where the number of species does not match the reference cited these have been updated from a personal database maintained by D.A. Ebert (June 2020). Personal communications affiliations can be found in the Acknowledgements. All pers. comm. are June 2020.

Country or Region	Total	Sharks	Batoids	Chimaeras	Source
Australia	329	183	132	14	Last & Stevens, 2009; W.T. White, pers. comm.
Indonesia	221	116	94	11	Fahmi, pers. comm.
Japan	212	126	75	11	Nakaboo, 2013
Brazil	210	101	102	7	O. Gadig, pers. comm.
South Africa	**191**	**111**	**72**	**8**	Ebert & van Hees, 2015; present study
Thailand	185	87	93	5	T. Krajangdara, pers. comm.
Taiwan	183	121	58	4	Ebert *et al*., 2013c, d; D.A. Ebert, pers. database
India	170	88	78	4	K.V. Akhilesh & K.K. Bineesh, pers. comm.
Philippines	166	96	67	3	Alava *et al*., 2014
Arabian Sea[1]	144	73	69	2	Jabado & Ebert, 2015; Jabado *et al*., 2017
Myanmar	143	70	70	3	Psomadakis *et al*., 2019
Northeast Atlantic[2]	134	71	53	10	Ebert & Stehmann, 2013; Ebert & Dando, 2020
Papua New Guinea	132	79	51	2	White & Ko'ou, 2018
Mexico (Gulf of Mexico & Caribbean coast)	125	75	47	3	Del Moral-Flores *et al*., 2015; Ehemann *et al*., 2018
Sri Lanka	124	69	54	1	Ebert *et al*., 2017
Mexico (Pacific coast)	123	63	55	5	Saldaña-Ruiz *et al*., 2019
Mozambique	122	70	50	2	Ebert & van Hees, 2015; R. Bennett & D. van Beuningen, pers. comm.
Borneo	118	52	65	1	Last *et al*., 2010
Madagascar	116	79	35	2	Fricke *et al*., 2018; R. Bennett & D. van Beuningen, pers. comm.
New Zealand	113	75	26	12	Roberts *et al*., 2019
Argentina	110	55	53	2	Ebert *et al*., 2017
Peru	110	66	38	6	Cornejo *et al*., 2015; Ebert, 2016
Chile	107	59	43	5	Bustamante *et al*., 2014; Ebert, 2016; F. Concha, pers. comm.
Ecuador	106	59	41	6	Ebert, 2016; Ebert *et al*., 2017
Mediterranean	88	49	37	2	Serena, 2005; Ebert & Dando, 2020
Tanzania	86	49	36	1	R. Bennett & D. van Beuningen, pers. comm.
Northwest Atlantic[3]	83	54	23	6	Ebert & Stehmann, 2013
Kenya	77	44	32	1	Anam & Mostarda, 2012; R. Bennett & D. van Beuningen, pers. comm.
Northeast Pacific[4]	77	43	30	4	Ebert *et al*., 2017
Red Sea	77	44	33	0	Bonfil & Abdallah, 2004; Golani & Fricke, 2015

[1] Arabian Sea includes the Arabian/Persian Gulf, but excludes the Red Sea

[2] Northeast Atlantic includes European States bordering on the Atlantic Ocean.

[3] Northwest Atlantic includes the Atlantic coast of Canada and the United States.

[4] Northeast Pacific includes the Pacific coast of Canada and the United States.

TABLE 2. Biodiversity of South African Chondrichthyans by order, family, genera, and species. Global numbers in parenthesis as of June 2020 from personal database maintained by D.A. Ebert.

		South African Chondrichthyans	
Order	**Family**	**Number of Genera**	**Number of Species**
Sharks			
Hexanchiformes	Chlamydoselachidae	1 (1)	1 (2)
	Hexanchidae	3 (3)	4 (5)
Echinorhiniformes	Echinorhinidae	1 (1)	1 (2)
Squaliformes	Squalidae	2 (2)	6 (34)
	Centrophoridae	2 (2)	9 (16)
	Etmopteridae	2 (4)	8 (52)
	Somniosidae	5 (6)	6 (17)
	Oxynotidae	1 (1)	1 (5)
	Dalatiidae	6 (7)	6 (10)
Pristiophoriformes	Pristiophoridae	1 (2)	1 (10)
Squatiniformes	Squatinidae	1 (1)	1 (22)
Heterodontiformes	Heterodontidae	0 (1)	0 (9)
Orectolobiformes	Parascyllidae	0 (2)	0 (8)
	Brachaeluridae	0 (1)	0 (2)
	Orectolobidae	0 (3)	0 (12)
	Hemiscyllidae	0 (2)	0 (17)
	Ginglymostomatidae	1 (3)	1 (4)
	Stegostomatidae	1 (1)	1 (1)
	Rhincodontidae	1 (1)	1 (1)
Lamniformes	Mitsukurinidae	1 (1)	1 (1)
	Carchariidae	1 (1)	1 (1)
	Odontaspididae	1 (1)	1 (2)
	Pseudocarchariidae	1 (1)	1 (1)
	Megachasmidae	1 (1)	1 (1)
	Alopiidae	1 (1)	3 (3)
	Cetorhinidae	1 (1)	1 (1)
	Lamnidae	3 (3)	4 (5)
Carcharhiniformes	Pentanchidae	7 (11)	13 (111)
	Scyliorhinidae	3 (7)	4 (50)
	Proscyllidae	1 (3)	1 (6)
	Pseudotriakidae	0 (3)	0 (4)
	Leptochariidae	0 (1)	0 (1)

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TABLE 2. (Continued)

		South African Chondrichthyans	
Order	**Family**	**Number of Genera**	**Number of Species**
	Triakidae	5 (9)	7 (47)
	Hemigaleidae	2 (4)	2 (8)
	Carcharhinidae	6 (11)	20 (56)
	Galeocerdidae	1 (1)	1 (1)
	Sphyrnidae	1 (2)	3 (9)
Batoids			
Torpediniformes	Platyrhinidae	0 (2)	0 (5)
	Narcinidae	0 (5)	0 (33)
	Narkidae	3 (5)	3 (9)
	Hypnidae	0 (1)	0 (1)
	Torpedinidae	2 (2)	3 (20)
Rhinopristiformes	Pristidae	1 (2)	2 (5)
	Rhinidae	2 (3)	2 (10)
	Rhinobatidae	2 (3)	6 (35)
	Glaucostegidae	0 (1)	0 (6)
	Trygonorrhinidae	0 (3)	0 (8)
Rajiformes	Arhynchobatidae	1 (13)	1 (105)
	Rajidae	8 (17)	21 (157)
	Anacanthobatidae	1 (5)	1 (14)
	Gurgesiellidae	1 (3)	3 (19)
Myliobatiformes	Hexatrygonidae	1 (1)	1 (1)
	Plesiobatidae	1 (1)	1 (1)
	Dasyatidae	12 (19)	15 (97)
	Gymnuridae	1 (1)	1 (12)
	Aetobatidae	1 (1)	1 (5)
	Myliobatidae	2 (2)	3 (18)
	Rhinopteridae	1 (1)	1 (10)
	Mobulidae	1 (1)	7 (9)
	Potamotrygonidae	0 (5)	0 (38)
	Urolophidae	0 (3)	0 (28)
	Urotrygonidae	0 (2)	0 (17)
	Zanobatidae	0 (1)	0 (2)
Chimaeras			
Chimaeriformes	Callorhinchidae	1 (1)	1 (3)
	Chimaeridae	2 (2)	4 (41)
	Rhinochimaeridae	2 (3)	3 (8)

TABLE 3. Chondrichthyan families and genera (and their current status) described as new from South Africa (modified from Ebert & van Hees, 2015).

Family	Current status	Genera	Current status
Rhincodontidae Smith, 1829	valid	*Euprotomicroides* Hulley & Penrith, 1966	valid
Anacanthobatidae von Bonde & Swart, 1923	valid	*Heteroscymnoides* Fowler, 1934	valid
Crurirajidae Hulley, 1972	invalid	*Pliotrema* Regan, 1906	valid
Hexatrygonidae Smith & Heemstra, 1980	valid	*Rhincodon* Smith, 1829	valid
		Atractophorus Gilchrist, 1922	*Centrophorus* Müller & Henle, 1837
		Encheiridiodon Smith, 1967	*Centrophorus* Müller & Henle, 1837
		Haploblepharus Garman, 1913	valid
		Holohalaelurus Fowler, 1934	valid
		Poroderma Smith, 1838	valid
		Conoporoderma Fowler, 1934	*Poroderma* Smith, 1838
		Neotriakis Smith, 1957	*Eridacnis* Smith, 1913
		Scylliogaleus Boulenger, 1902	valid
		Electrolux Compagno & Heemstra, 2007	valid
		Heteronarce Regan, 1921	valid
		Astrape Müller & Henle, 1837	*Narke* Kaup, 1826
		Narke Kaup, 1826	valid
		Rostroraja Hulley, 1972	valid
		Anacanthobatis von Bonde & Swart, 1923	valid
		Leiobatis von Bonde & Swart, 1923	*Anacanthobatis* von Bonde & Swart, 1923
		Hexatrygon Heemstra & Smith, 1980	valid

TABLE 4. Chondrichthyan species (and their current status) described as new from South Africa (modified from Ebert & van Hees, 2015).

Family	Scientific name	Current status	Type status
Hexanchidae	*Heptranchias haswelli* Ogilby, 1897 [loca lity questioned?]	*Notorynchus cepedianus* (Péron, 1807)	ex MAMU jaws only (lost)
Echinorhinidae	*Echinorhinus obesus* Smith, 1838	*Echinorhinus brucus* (Bonnaterre, 1788)	No types
Squalidae	*Squalus acutipinnis* Regan, 1908	valid	Lectotype: BMNH 1905.6.8.8; Paralectorypes: BMNH 1859.5.7.68 (1), BMNH 1900.11.6.14 (1)
	Squalus bassi Viana, de Carvalho, & Ebert, 2017	valid	Holotype: SAM 33476; Paratypes: SAIAB, SAM
	Squalus mahia Viana, Lisher, & de Carvalho, 2017	valid	Holotype: SAIAB 189449; Paratypes: MNHN, MZUSP, SAIAB, ZMN
	Squalus margaretsmithae Viana, Lisher, & de Carvalho, 2017	*Squalus acutipinnis* Regan, 1908	Holotype: SAIAB 25389; Paratypes: MNHN, SAIAB
Centrophoridae	*Atractophorus armatus* Gilchrist, 1922	*Centrophorus moluccensis* Bleeker, 1860	Holotype: lost
	Centroscymnus fuscus Gilchrist & von Bonde, 1924	*Centrophorus squamosus* (Bonnaterre, 1788)	Holotype: lost
	Encheiridiodon hendersoni Smith, 1967	*Centrophorus squamosus* (Bonnaterre, 1788)	Holotype: SAIAB 663
	Acanthidium natalense Gilchrist, 1922	*Deania profundorum* (Smith & Radcliffe, 1912)	Syntypes: (2) SAIAB 2 (1)
Etmopteridae	*Etmopterus compagnoi* Fricke & Koch, 1990	valid	Holotype: SMNS 8999; Paratypes: SMNS 9000 (3)
	Etmopterus sculptus Ebert, Compagno, & De Vries, 2011	valid	Holotype: SAM 37569; Paratypes: SAM 33011 (1), SAM 37569 (1), 37570 (2), 37571 (2)
Dalatiidae	*Scymnorhinus brevipinnis* Smith, 1936	*Dalatias licha* (Bonnaterre, 1788)	Holotype: SAIAB 27; Paratypes: (2) SAIAB
	Euprotomicroides zantedeschia Hulley & Penrith, 1966	valid	Holotype: SAM 23577
	Heteroscymnoides marleyi Fowler, 1934	valid	Holotype: ANSP 53046
Pristiophoridae	*Pliotrema warreni* Regan, 1906	valid	Syntypes: BMNH 1899.2.10.4, BMNH 1905.6.8.9, possible syntype CAS-SU 31456
Squatinidae	*Squatina africana* Regan, 1908	valid	Holotype: BMNH 1906.11.19.21

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TABLE 4. (Continued)

Family	Scientific name	Current status	Type status
Ginglymostomatidae	*Nebrius doldi* Smith, 1953	*Nebrius ferrugineus* (Lesson, 1831)	Holotype: not saved
Rhincodontidae	*Rhincodon typus* Smith, 1828	valid	Holotype: MNHN 0000-9855
Lamnidae	*Carcharodon capensis* Smith, 1839	*Carcharodon carcharias* (Linnaeus, 1758)	Holotype: BMNH 1850.9.5.3
	Carcharodon rondeletii Müller & Henle, 1839	*Carcharodon carcharias* (Linnaeus, 1758)	Syntypes: BMNH 1850.9.5.3, RUSM, SMF, ZMB all uncat & lost
	Isurus tigris africanus Smith, 1957	*Isurus oxyrinchus* Rafinesque, 1810	Holotype: SAIAB 426
	Isurus bideni Phillipps, 1932	*Isurus oxyrinchus* Rafinesque, 1810	Holotype: AMS IA.4311
Pentanchidae	*Apristurus microps* (Gilchrist, 1922)	valid	Holotype: lost
	Apristurus saldanha (Barnard, 1925)	valid	Holotype: lost
	Halaelurus lineatus Bass, D'Aubrey, & Kistnasamy, 1975	valid	Holotype: SAIAB 6148; Paratypes: SAIAB 6161, 6162, 6147
	Halaelurus natalensis (Regan, 1904)	valid	Syntypes: (2) BMNH 1904.6.28.29
	Haploblepharus edwardsii (Schinz, 1822)	valid	Neotype: SAM 36079
	Haploblepharus fuscus Smith, 1950	valid	Holotype: SAIAB 21; Paratype: SAIAB lost
	Haploblepharus kistnasamyi Human & Compagno, 2006	valid	Holotype: SAIAB 6075; Paratypes: SAIAB 6075, 6077
	Haploblepharus pictus (Müller & Henle, 1838)	valid	Syntypes: BMNH (6, lost), ?NMW 78529 (2), RMNH 4161-4164 (5)
	Holohalaelurus favus Human, 2006	valid	Holotype: SAIAB 6139; Paratype: SAIAB 6138
	Scyliorhinus (Halaelurus) polystigma Regan, 1921	*Holohalaelurus punctatus* (Gilchrist, 1914)	Holotype: BMNH 1921.3.1.1
	Holohalaelurus punctatus (Gilchrist, 1914)	valid	Neotype: SAIAB 6128
	Holohalaelurus regani (Gilchrist, 1922)	valid	Neotype: SAM 32448
Scyliorhinidae	*Cephaloscyllium sufflans* (Regan, 1921)	valid	Holotype: BMNH 1921.3.1.2
	Poroderma africanum (Gmelin, 1789)	valid	No types

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TABLE 4. (Continued)

Family	Scientific name	Current status	Type status
	Poroderma marleyi Fowler, 1934	*Poroderma pantherinum* (Müller & Henle, 1838)	Holotype: ANSP 53427
	Poroderma pantherinum (Müller & Henle, 1838)	valid	Syntypes: BMNH 1845.7.3.14; (lost) RMNH & UTZI
	Poroderma submaculatum Smith, 1838	*Poroderma pantherinum* (Müller & Henle, 1838)	No types
	Scyllium africanum punctata Lampe, 1914	*Poroderma pantherinum* (Müller & Henle, 1838)	No types
	Scyllium leopardinum Müller & Henle, 1838	*Poroderma pantherinum* (Müller & Henle, 1838)	No types
	Scyllium maeandrinum Müller & Henle (ex Rapp), 1838	*Poroderma pantherinum* (Müller & Henle, 1838)	No types
	Scyllium variegatum Müller & Henle (ex Smith), 1838	*Poroderma pantherinum* (Müller & Henle, 1838)	Holotype: ?BMNH 1845.7.3.130
	Scyllium variegatum Smith, 1845	*Poroderma pantherinum* (Müller & Henle, 1838)	Holotype: BMNH 1845.7.3.130
	Squalus striatus Forster, *in* Lichtenstein, 1844	*Poroderma africanum* (Gmelin, 1789)	No types
	Squalus vittatus Shaw *in* Shaw & Nodder, 1798	*Poroderma africanum* (Gmelin, 1789)	Holotype: BMNH lost?
	Squalus vittatus Walbaum, 1792	*Poroderma africanum* (Gmelin, 1789)	No types
	Scyliorhinus capensis (Müller & Henle, 1838)	valid	Lectotype: BMNH 1845.7.3.141; Paralectotype: BMNH 1845.7.3.144 (1), 1953.5.10.2 (1), 1953.5.10.3 (1); RMNH uncat. (1, lost?), SMNS 4360 [ex UTZI] (1)
Proscyllidae	*Eridacnis sinuans* (Smith, 1957)	valid	Holotype: SAIAB 31; Paratype: ?SAIAB
Triakidae	*Mustelus palumbes* Smith, 1957	valid	Holotype: SAIAB 24
	Mustelus natalensis Steindachner, 1866	*Triakis megalopterus* (Smith, 1839)	Holotype: lost

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TABLE 4. (Continued)

Family	Scientific name	Current status	Type status
	Mustelus nigropunctatus Smith, 1952	*Triakis megalopterus* (Smith, 1839)	Holotype: SAIAB 424; Paratypes: SAIAB ?
	Scylliogaleus quecketti Boulenger, 1902	valid	Holotype: BMNH 1903.2.6.21
	Triakis megalopterus (Smith, 1839)	valid	Designation uncertain, A. Smith specimens: BMNH 1845.7.3.149, 1845.7.3.159
Hemigaleidae	*Paragaleus leucolomatus* Compagno & Smale, 1985	valid	Holotype: SAIAB 21175
Carcharhinidae	*Carcharhinus humani* White & Weigmann, 2014	valid	Paratype: ANSP 25838
	Carcharhinus improvisus Smith, 1952	*Carcharhinus brachyurus* (Günther, 1870)	Holotype: SAIAB lost
	Carcharhinus johnsoni Smith, 1951	*Carcharhinus brevipinna* (Müller & Henle, 1839)	Holotype: SAIAB 422
	Carcharhinus vanrooyeni Smith, 1958	*Carcharhinus leucas* (Müller & Henle, 1839)	Syntypes: SAIAB 175, described from several specimens, one at SAIAB
	Pterolamiops magnipinnis Smith, 1958	*Carcharhinus longimanus* (Poey, 1861)	Holotype: SAIAB 126
NARKIDAE	*Electrolux addisoni* Compagno & Heemstra, 2007	valid	Holotype: SAIAB 78777; Paratype: SAM 36908
	Heteronarce garmani Regan, 1921	valid	Holotype: BMNH 1921.3.1.3
	Narcine natalensis Fowler, 1925	*Heteronarce garmani* Regan, 1921	Holotype: ANSP 53010
	Narcine regani von Bonde & Swart, 1923	*Heteronarce garmani* Regan, 1921	Syntypes: several all lost
	Narke capensis (Gmelin, 1789)	valid	No types
	Raja rapensis Gmelin, 1789 apparently type setting error for *capensis*	*Narke capensis* (Gmelin, 1789)	No types
	Torpedo capensis Gronow *in* Gray, 1854	*Narke capensis* (Gmelin, 1789)	Holotype: BMNH 1853.11.12.202
TORPEDINIDAE	*Tetronarce cowleyi* Ebert, Haas, & de Carvalho, 2015	valid	Holotype: SAIAB 25190; Paratype: SAIAB 25347
	Torpedo smithii Günther, 1870	*Torpedo fuscomaculata* Peters, 1855	Holotype: BMNH 1852.8.12.46

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TABLE 4. (Continued)

Family	Scientific name	Current status	Type status
RHINOBATIDAE	*Acroteriobatus annulatus* Müller & Henle, 1841	valid	Syntypes: BMNH 1843.2.29.22 (1), MNHN A-8586 (1)
	Acroteriobatus blochii (Müller & Henle, 1841)	valid	Syntypes: originally 14 at MNHN
	Acroteriobatus leucospilus (Norman, 1926)	valid	Syntypes: BMNH 1905.6.8.12 (1), 1920.7.23.1 (1)
	Acroteriobatus ocellatus (Norman, 1926)	valid	Holotype: BMNH 1906.11.19.26
	Rhinobatos austini Ebert & Gon, 2017	valid	Holotype: SAIAB 75223; Paratypes: SAIAB, iSAM MB
	Rhinobatos holcorhynchus Norman, 1922	valid	Holotype: BMNH 1922.1.13.18
	Rhinobatos natalensis Fowler, 1925	*Rhinobatos holcorhynchus* Norman, 1922	Holotype: ANSP 53041
ARHYNCHOBATIDAE	*Bathyraja smithii* (Müller & Henle, 1841)	valid	Syntypes: (2) BMNH 1953.8.10.1, MNHN 0000-1594
RAJIDAE	*Amblyraja robertsi* (Hulley, 1970)	*Amblyraja hyperborea* (Collett, 1879)	Holotype: ZMH 25250
	Dipturus campbelli (Wallace, 1967)	valid	Holotype: SAIAB 992; Paratype: ?SAIAB ex ORI B859
	Dipturus pullopunctatus (Smith, 1964)	valid	Holotype: SAIAB 37
	Dipturus springeri (Wallace, 1967)	valid	Holotype: SAIAB 989; Paratype: SAIAB 990
	Dipturus stenorhynchus (Wallace, 1967)	valid	Holotype: ORI B186
	Leucoraja compagnoi Stehmann, 1995	valid	Holotype: ZIN 48406
	Leucoraja wallacei (Hulley, 1970)	valid	Holotype: ORI B 155; Paratype: ORIB 126
	Malacoraja spinacidermis (Barnard, 1923)	valid	Holotype: BMNH 1935.7.19.7
	Neoraja stehmanni (Hulley, 1972)	valid	Holotype: SAM 26636; Paratype: SAM 26637
	Raia albalinea von Bonde & Swart, 1923	*Rajella caudaspinosa* (von Bonde & Swart, 1923)	Syntypes: (several) BMNH 1935.7.14.4 (1)
	Raja ocellifera Regan, 1906	valid	Syntypes: BMNH 1905.6.8.14 (1), NMP (1); Probably syntype: BMNH 1895.12.27.14
	Raia rhizacanthus Regan, 1906	*Raja straeleni* Poll, 1951	Holotype: BMNH 1905.6.8.13

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TABLE 4. (Continued)

Family	Scientific name	Current status	Type status
	Raja bonaespeiensis Fowler, 1910	*Raja straeleni* Poll, 1951	Syntypes: MNHN 0000-1333, (3) RMNH D2492, D2493, D2507
	Raja capensis Müller & Henle, 1838	*Raja straeleni* Poll, 1951	Syntypes: MNHN 0000-1333, (3) RMNH D2492, D2493, D2507
	Rajella barnardi (Norman, 1935)	valid	Holotype: BMNH 1935.5.2.65
	Rajella caudaspinosa (von Bonde & Swart, 1923)	valid	Holotype: lost
	Rajella dissimilis (Hulley, 1970)	valid	Holotype: ZMH 25258; Paratypes: ZMN 25259 (2)
	Rajella leopardus (von Bonde & Swart, 1923)	valid	Syntypes: (several) BMNH 1935.7.14.2-3 (2)
	Rajella ravidula (Hulley, 1970)	valid	Holotype: ZMH 25261; Paratypes: ZMH 25260 (2)
	Raja confundens Hulley, 1970	*Rajella barnardi* (Norman, 1935)	Holotype: SAM 24411, Paratype: SAM 24479 (1)
ANACANTHOBATIDAE	*Anacanthobatis marmoratus* (von Bonde & Swart, 1923)	valid	Lectotype: SAIAB 662; Paralectotypes: missing?
	Leiobatis dubius von Bonde & Swart, 1923	*Anacanthobatis marmoratus* (von Bonde & Swart, 1923)	Holotype: lost
CRURIRAJIDAE	*Cruriraja durbanensis* (von Bonde & Swart, 1923)	valid	Syntypes: (2) lost
	Cruriraja hulleyi Aschliman, Ebert, & Compagno, 2010	valid	Holotype: SAM 37618; Paratype: SAM 37619
	Cruriraja parcomaculata (von Bonde & Swart, 1923)	valid	Syntypes: (several) BMNH 1935.7.14.1 (1)
	Cruriraja triangularis Smith, 1964	*Cruriraja parcomaculata* (von Bonde & Swart, 1923)	Holotype: ZMUC P 08239; Paratype: SAIAB 50 (1)
HEXATRYGONIDAE	*Hexatrygon bickelli* Heemstra & Smith, 1980	valid	Holotype: SAIAB 997
DASYATIDAE	*Dasybatus agulhensis* Barnard, 1925	*Bathytoshia lata* (Garman, 1880)	Holotype: SAM lost
	Dasyatis chrysonota (Smith, 1828)	valid	Neotype: SAM 31697
	Dasyatis lubricus Smith, 1957	*Bathytoshia lata* (Garman, 1880)	Holotype: SAIAB 431
	Trygon schreineri Gilchrist, 1913	*Bathytoshia brevicaudata* (Hutton, 1875)	Holotype: SAM 16053
	Trygon purpurea Müller & Henle (ex Smith), 1841	*Himantura fai* Jordan & Seale, 1906	No types

.....continued on the next page

TABLE 4. (Continued)

Family	Scientific name	Current status	Type status
	Himantura draco Compagno & Heemstra, 1984	*Pateobatis jenkinsii* (Annandale, 1909)	Holotype: SAIAB 996
GYMNURIDAE	*Gymnura natalensis* (Gilchrist & Thompson, 1911)	valid	Holotype: SAM 10632
MYLIOBATIDAE	*Aetomylus huletti* Smith, 1953	*Aetomylaeus vespertilio* (Bleeker, 1852)	Holotype: SAIAB lost
	Myliobatis cervus Smith, 1935	*Myliobatis aquila* (Linnaeus, 1758)	Syntypes: SAIAB (2) lost
CALLORHINCHIDAE	*Callorhinchus capensis* Duméril, 1865	valid	Syntypes: MNHN A-7981 (1), 4294 (1)
CHIMAERIDAE	*Chimaera notafricana* Kemper, Ebert, Compagno, & Didier, 2010	valid	Holotype: SAM 34517
	Hydrolagus africanus (Gilchrist, 1922)	valid	Neotype: SAM 34420
	Hydrolagus erithacus Walovich, Ebert, & Kemper, 2017	valid	Holotype: SAIAB 200578; Paratypes: several SAIAB, SAM
RHINOCHIMAERIDAE	*Rhinochimaera africana* Compagno, Stehmann, & Ebert, 1991	valid	Holotype: SAIAB 27744 (lost?)

The number of species described from South Africa is extensive with at least 119 species of which 68 are still valid (Table 4). The number of sharks, batoids, and chimaera species described is 61, 53, and five, respectively. Those considered still valid include 31 sharks, 32 batoids and five chimaeras, although some of those currently considered junior synonyms might eventually prove to be valid after further taxonomic resolution. Of the described species, 16 are missing types and five have had neotypes designated to date. Type specimens for 47 species are deposited at the South African Institute for Aquatic Biodiversity (SAIAB) and/or the South African Museum (SAM). Gon and Skelton (1997) provide an excellent history and overview of South Africa museums, their fish collections and importance to ichthyological research. The diverse South Africa chondrichthyan fauna also has a high degree of endemics or near endemics (Ebert & van Hees, 2015).

This paper provides the first complete annotated checklist of all known chondrichthyan fishes occurring in South African waters. Given the increasing conservation and resource exploitation concerns about South Africa's unique biodiversity, the high degree of endemism, the significant taxonomic changes that have taken place at the species and higher taxa levels, and the lack of a current checklist of valid species, this paper provides a contemporary baseline of knowledge. This paper also aims to lay the groundwork for future research on the South Africa shark, batoid, and chimaera fauna.

Materials and methods

The checklist classification follows Ebert *et al*. (2013a), Last *et al*. (2016a), and Didier *et al*. (2012) for sharks, batoids, and chimaeras, respectively, with modifications to reflect recent changes at taxonomic levels above species. The batoids in particular have undergone major changes at the order, family and genera level, and therefore some species have been reassigned to new or different genera or synonymized with other known species (see Last *et al*., 2016a). If the genus name has changed since the original description of a species, the species authority name(s) are listed in parentheses. Species with an uncertain taxonomic status have 'cf.' (Latin for confer or compare with) inserted between the genus name and species name, indicating that the name may be subject to change in the future, and a species with '?' next to the name indicates that we have not been able to confirm independently its occurrence in South African waters.

This checklist was compiled from existing regional species checklists, regional catalogues and guides, literature accounts, museum voucher specimens, personal communications from colleagues, and original data gathered by the authors. Due to South Africa's long taxonomic history dating back nearly 200 years, we have tried to be as comprehensive as possible, but realize there are limitations with the species identity of some of the earlier references. The checklist builds upon and updates the previous southern African list of Ebert & van Hees (2015) by providing more details specific to South Africa's species.

Following each order is the family, genus, and species scientific names followed by authorship and common name, and for genera and species, the type status and deposition of type material, and type locality if available. Each species account has a section with local synonymies for all South African taxa, including authors, followed by voucher specimens with institutional acronyms following Sabaj (2019) and institutional accession numbers. The first author to report a particular species from South Africa is underlined in the synonymy. A section follows covering the distribution within South Africa, to the nearest geographic location and in parenthesis an abbreviation for each province, i.e. Northern Cape Province (NC), Western Cape Province (WC), Eastern Cape Province (EC), and KwaZulu-Natal (KZN). A remarks section follows with information on the taxonomic history, including nomenclature and systematics, if applicable, and the conservation status of each species. Every attempt was made to confirm the occurrence of all species reported from South African waters, including those no longer occurring or reported for the first time. Where the taxonomic status of a species is uncertain, this is documented in the remarks section. Finally, several species groups are currently under investigation and their taxonomic status may change in the future.

The last section of each species account has the current Red List Assessment status. The IUCN Red List of Threatened Species is widely recognized as the most comprehensive source of information on species extinction risk. Assessments consider all available information on a species' taxonomy, distribution, population status, habitat and ecology, major threats, use and trade, and conservation measures. The IUCN Red List Categories and Criteria utilize a series of thresholds to evaluate extinction risk based on population size reduction, geographic range, population size, or the probability of extinction (IUCN, 2012; IUCN Standards and Petitions Subcommittee, 2019).

The IUCN Red List applies the following extinction risk categories (definitions from Mace *et al.*, 2008; IUCN 2012): **Extinct (EX):** 'there is no reasonable doubt that the last individual has died'; **Extinct in the Wild (EW):** a species 'is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range'; **Critically Endangered (CR):** a species 'is facing an extremely high risk of extinction in the wild'; **Endangered (EN):** a species 'is facing a very high risk of extinction in the wild'; **Vulnerable (VU):** a species 'is facing a high risk of extinction in the wild'; **Near Threatened (NT):** a species 'not qualify for CR, EN or VU now, but is close to qualifying for or is likely to qualify for a threatened category in the near future'; **Least Concern (LC):** species do not qualify for CR, EN, VU, or NT; and, **Data Deficient (DD):** species for which there is 'inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status'. A DD assessment is not a category of threat; but future research may find that a threatened category is appropriate (IUCN, 2012).

Each species is assessed using five Red List criteria (Mace *et al.*, 2008; IUCN, 2012; IUCN Standards and Petitions Subcommittee, 2019): **Criterion A:** population size reduction; **Criterion B:** geographic range size; **Criterion C:** small population size and decline; **Criterion D:** very small or restricted population; and, **Criterion E:** quantitative analysis (for example, population viability analysis). To qualify for one of the three threatened categories (CR, EN, or VU), a species has to meet a quantitative threshold for that category in any of the five criteria listed above (A–E; IUCN, 2012). Only one of the five criteria needs to be met for a species to quality for a particular category. If species meet multiple criteria, it is assigned the highest category for which it qualifies.

The Red List Categories provided here are the global assessments of each species. For endemic species, the category can be considered to represent their status at the global scale. For other species, the South African range comprises only part of their broader global range. Their Red List Category is therefore based on the entire global population and reflects status, threats, population trends, and management at the global level. This category may be very different to a species' status within South African waters if a 'national' assessment was undertaken.

Categories were taken from the IUCN Red List of Threatened Species website (IUCN, 2020). The assessment publication year is provided alongside the Category. For all assessments dated 2003–2009, a reassessment is pending. This is also the case for the Not Evaluated (NE) species; these species have not yet been assessed against the IUCN Red List Categories and Criteria. Reassessments will be available at http://www.iucnredlist.org (IUCN, 2020).

Annotated checklist

Order Hexanchiformes

Family Chlamydoselachidae Garman, 1884

Frilled Sharks

Genus *Chlamydoselachus* Garman, 1884

Frilled Sharks

Chlamydoselachus Garman, 1884: 47, 52 (pp. 8, 13 in separate). Type species: *Chlamydoselachus anguineus* Garman, 1884, by monotypy.

Chlamydoselachus africana Ebert & Compagno, 2009

Southern African Frilled Shark

Chlamydoselachus africana Ebert & Compagno, 2009: 3, Figs. 1–4, 6. Holotype: SAM 31028. Type locality: Off Cunene River, Namibia, 19°59'S, 11°48'E, southeastern Atlantic.

Local synonymy: *Chlamydoselachus anguineus*: Smith, 1951: 87; Smith, 1965: 511, fig. 3b; Smith, 1967a: 105, pls. 19–23; Bass *et al*., 1975d: 16, fig. 9, pl. 6; Compagno, 1984a: 14, fig. (in part); Bass, 1986: 47, fig. 3.1; Compagno *et al*., 1989: 20, pl.; Compagno *et al*., 1991: 51. *Chlamydoselachus* sp. A: Ebert, 1990: 217, figs. 3.1, 3.12 (in part); Compagno, 1999: 114; Compagno *et al*., 2005: 66, fig., pl. 1. *Chlamydoselachus* sp. nov.: Compagno, 1999: 114. *Chlamydoselachus africana*: Barnett *et al*., 2012: 967; Ebert, 2013: 33–34; Ebert *et al*., 2013a: 64, fig., pl. 1; Ebert & Mostarda, 2013: 9; NPOA, 2013: 37; Ebert, 2015: 36–40, fig. 34; da Silva *et al*., 2015: 246; Ebert & Mostarda, 2015: 9, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1144; Weigmann, 2016: 887.

South Africa voucher material: None. All known specimens caught in South African waters were discarded.

South Africa distribution: South African range poorly-defined with records off the Cape Peninsula (WC) (R.W. Leslie, formerly, Department of Agriculture, Forestry and Fisheries [DAFF], Cape Town, South Africa, pers. comm.), the EC, and KZN (Ebert & Compagno, 2009).

Remarks: An apparent southern African endemic presently confirmed from southern Angola, Namibia, and South Africa. A single specimen was reported by Smith (1951) to have been caught off the Port Alfred Pier (EC), but the specimen was not retained. Since no specimens have been captured and examined since the description of *C. africana*, all South African literature records of frilled sharks are attributed to this species for now. Records of frilled sharks from seamounts off Mozambique should also be carefully examined (Ebert, 2013).

Conservation status: LC (2019).

Family Hexanchidae Gray, 1851

Cow Sharks

Genus *Heptranchias* Rafinesque, 1810a

Sharpnose Sevengill Sharks

Heptranchias Rafinesque, 1810a: 13. Type species: "*Squalus cinereus* Lacépède" by original designation, equals *S. cinereus* Gmelin *in* Linnaeus & Gmelin, 1789 and a junior synonym of *Squalus perlo* Bonnaterre, 1788.

***Heptranchias perlo* (Bonnaterre, 1788)**

Sharpnose Sevengill Shark

Squalus perlo Bonnaterre, 1788: 10. Holotype: unknown. Type locality: "La Méditerranée" [Mediterranean Sea].

Local synonymy: *Heptranchias cinereus*: Duméril, 1865: 437, pl. 4. ?*Heptranchis pectorosus*: Barnard, 1925: 21, fig. 1, pl. 1 (in part, teeth appear to be *H. perlo*). *Heptranchias perlo*: Smith, 1953: 511; Smith, 1965: 511; Bass *et al.*, 1975d: 11, fig. 7, pl. 4; Compagno, 1984a: 17, fig.; Bass *et al*., 1986: 45, fig. 2.1; Compagno *et al.*, 1989: 18, pl.; Ebert, 1990: 38, fig. 3.13; Compagno, *et al*., 1991: 51; Compagno, 1999: 114; Heemstra & Heemstra, 2004: 52; Compagno *et al*., 2005: 66, fig., pl. 1; Barnett *et al*., 2012: 968; Ebert, 2013: 39, fig. 30; Ebert *et al*., 2013a: 68, fig., pl. 1; Ebert & Mostarda, 2013: 9, fig.; NPOA, 2013: 36; Ebert & Dando, 2014: 77, fig.; da Silva *et al*., 2015: 247; Ebert, 2015: 42, fig. 38; Ebert & Mostarda, 2015: 9, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1148; Weigmann, 2016: 887.

South Africa voucher material: SAIAB 6064, SAIAB 6246 [former ORI 453], SAIAB 6255, SAIAB 189030, SAIAB 193573, SAIAB 201757. Ebert (1990) examined numerous South African specimens, many of which are now in the fish collection (uncatalogued) at SAM.

South Africa distribution: Cape Agulhas (WC) to the KZN border with Mozambique.

Remarks: The species is most common off KZN, but individuals have been taken during survey cruises at least as far west as Cape Agulhas (WC). Early records of this species may have been misidentified with its larger congener (*N. cepedianus*), which mostly occurs in Cape waters. Barnard (1925: fig. 1, pl. 1) illustrates a sevengill shark that appears to be *Notorynchus cepedianus*, but the associated teeth are more consistent with those of *H. perlo*.

Conservation status: NT (2020).

Genus *Hexanchus* Rafinesque, 1810a

Sixgill Sharks

Hexanchus Rafinesque, 1810a: 14. Type species: "*Squalus griseus* Lacépède", by original designation, a junior synonym of *Squalus griseus* Bonnaterre, 1788.

***Hexanchus griseus* (Bonnaterre, 1788)**

Bluntnose Sixgill Shark

Squalus griseus Bonnaterre, 1788: 9. Types: unknown according to Boeseman *in* Hureau & Monod (1973). Type locality: "La Méditerranée" [= Mediterranean Sea].

Local synonymy: *Hexanchus griseus*: Norman, 1922: 319; Barnard, 1925: 22; Barnard, 1947: 9; Smith, 1949a: 38, fig. 1; Bass *et al.*, 1975d: 8, fig. 5, pl. 1; Compagno, 1984a: 19, fig.; Bass *et al*., 1986: 46, fig. 2.2; Compagno

et al., 1989: 18, pl.; Ebert, 1990: 45, fig. 3.13; Compagno, *et al*., 1991: 53; Ebert, 1994: 213; Compagno, 1999: 114; Ebert, 2002a: 359; Heemstra & Heemstra, 2004: 51, fig.; Compagno *et al*., 2005: 67, fig., pl. 1; Barnett *et al*., 2012: 967; Ebert, 2013: 42, fig. 34; Ebert *et al*., 2013a: 69, fig., pl. 1; Ebert & Mostarda, 2013: 9, fig.; NPOA, 2013: 36; Ebert & Dando, 2014: 79, fig.; da Silva *et al*., 2015: 247; Ebert, 2015: 44, fig. 40; Ebert & Mostarda, 2015: 9, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1149; Weigmann, 2016: 887.

South Africa voucher material: SAIAB 6180 [former ORI 2598]. Ebert (1990, 1994, 2002a) and Compagno *et al*. (1991) examined numerous South African specimens, several of which are now in the fish collection (uncatalogued) at SAM.

South Africa distribution: Entire coast from the Orange River (NC) to northern KZN border with Mozambique.

Remarks: Perhaps the most common species of large deep-sea shark, *H. griseus* also occurs close inshore, including Langebaan Lagoon, Saldanha Bay, and St. Helena Bay (WC).

Conservation status: NT (2020).

***Hexanchus nakamurai* Teng, 1962**

Bigeyed Sixgill Shark

Hexanchus griseus nakamurai Teng, 1962: 30, fig. 5. Holotype: TFRI 2515. Type locality: Keelung, Taiwan [lost]. Neotype: NMMB-P 15835, 1565 mm total length (TL) mature male. Type locality: Cheng-gong, Taiwan, 22°58'N, 120°08'E.

Local synonymy: *Hexanchus vitulus*: Bass *et al.*, 1975d: 9; Bass *et al.*, 1986: 46, fig. 2.3; Compagno, 1984a: 20, fig.; Compagno *et al.,* 1989: 18, pl.; Heemstra & Heemstra, 2004: 52. *Hexanchus nakamurai*: Ebert, 1990: 54, fig. 3.13; Compagno, 1999: 114; Compagno *et al*., 2005: 67, fig., pl. 1; Barnett *et al*., 2012: 968; Ebert, 2013: 41, fig. 33; Ebert *et al*., 2013a: 68, fig., pl. 1; Ebert *et al*., 2013b: 20; Ebert & Mostarda, 2013: 9, fig.; Ebert & van Hees, 2015: 144; Weigmann, 2016: 888.

South Africa voucher material: SAIAB 6897, SAIAB 99393 [former ORI 2822], SAIAB 189029.

South Africa distribution: Known from three specimens, all off KZN; an adult male about 155 cm TL, another specimen of about the same size caught in the shark nets off Park Rynie (Bass *et al*., 1975d), and the head only of an individual from off Pumula.

Remarks: KZN may be the southern extent of the range of this species in the WIO, as it appears to be more common off Madagascar, Tanzania, and Kenya. Also, this species is frequently misidentified with smaller (< 150 cm TL) *H. griseus*, which are very common below 200 m in South African waters. The KZN specimens were originally referred to as *H. vitulus* (Bass *et al*., 1975d), but subsequent taxonomic research concluded these are referable to *H. nakamurai* (Ebert, 1990). Recently, *H. vitulus* was resurrected as a valid species (Daly-Engel *et al*., 2019), but it appears to be restricted to the North Atlantic. Any new records of *H. nakamurai* from South Africa should be examined.

Conservation status: NT (2020).

Genus *Notorynchus* Ayres, 1855

Broadnose Sevengill Sharks

Notorynchus Ayres, 1855: 77. Type species: *Notorynchus maculatus* Ayres, 1855, by original designation, a junior synonym of *Squalus cepedianus* Péron, 1807.

***Notorynchus cepedianus* (Péron, 1807)**

Broadnose Sevengill Shark

Squalus cepedianus Péron, 1807: 337. Holotype: unknown. Type locality: Adventure Bay, Tasmania, Australia.

Local synonymy: *Heptanchus indicus*: Bleeker, 1860b: 58 (listed Cape seas). *Notidanus indicus*: Günther, 1870: 399; Gilchrist, 1902: 165. *Heptranchias haswelli*: Ogilby, 1897: 62 (original description based on jaws possibly from Cape of Good Hope, but Ogilby questioned the accuracy of this location). *Heptranchias indicus*: Thompson, 1914: 134. *Heptranchias pectorosus*: Barnard, 1925: 21, fig. 1, pl. 1; Smith, 1949a: 39. *Notorynchus platycephalus*: Fowler, 1925: 188. *Heptranchias cepedianus*: Smith, 1949a: 38, fig. 2. *Notorynchus pectorosus*: Smith [M.M.], 1975: 10. *Notorynchus cepedianus*: Bass *et al.*, 1975d: 14, fig. 8; Compagno, 1984a: 22, fig.; Bass *et al*., 1986: 47, fig. 2.4; Compagno *et al.*, 1989: 18, pl.; Ebert, 1990: 60, fig. 3.13; Ebert, 1991a: 455; Ebert, 1991b: 565; Ebert, 1996: 93; Compagno, 1999: 114; Ebert, 2002b: 517; Heemstra & Heemstra, 2004: 52,

fig.; Compagno *et al*., 2005: 68, fig., pl. 1; Barnett *et al*., 2012: 967; Ebert *et al*., 2013a: 70, fig., pl. 1; Mann, 2013: 86; NPOA, 2013: 36; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 144; Compagno, 2016: 1151; Weigmann, 2016: 888.

South Africa voucher material: SAIAB 1503, SAIAB 1504, SAIAB 4679, SAIAB 7653, SAIAB 10691, SAIAB 12831, SAIAB 19378, SAIAB 44245, SAIAB 46924.

South Africa distribution: The Orange River (NC) to East London (EC).

Remarks: This species is most common along the south coast and WC, but seasonally may range to at least East London (EC).

Conservation status: VU (2020).

Order Echinorhiniformes

Family Echinorhinidae Gill, 1862

Bramble Sharks

Genus *Echinorhinus* Blainville, 1816

Bramble Sharks

Echinorhinus Blainville, 1816: (8), 121 (genus *Squalus* Linnaeus, 1758). Type species: "?*Spinosus*" = *Squalus spinosus* Gmelin, *in* Linnaeus & Gmelin, 1789, by monotypy.

Echinorhinus brucus Bonnaterre, 1788

Bramble Shark

Squalus brucus Bonnaterre, 1788: 11. Holotype: lost. Type locality: "L'Ocean" (North Atlantic).

Local synonymy: *Echinorhinus obesus*: Smith, 1849: pl. 1 (original description, Cape of Good Hope, South Africa). *Echinorhinus spinosus*: Duméril, 1865: 459; Gilchrist, 1902: 166; Thompson, 1914: 151; Barnard, 1925: 46, fig. 6, pl. 2; Barnard, 1947: 16, fig. 3, pl. 3. *Echinorhinus brucus*: Smith, 1949a: 56, fig. 44; Smith, 1965: 56, fig. 44; Bass *et al.*, 1976: 51, fig. 36, pl. 11; Compagno, 1984a: 26, fig.; Bass & Compagno, 1986: 63, fig. 6.1; Compagno *et al*., 1989: 20, pl.; Compagno *et al*., 1991: 54; Compagno, 1999: 114; Compagno *et al*., 2005: 70, fig., pl. 5; Ebert, 2013: 49, fig. 46; Ebert *et al*., 2013a: 72, fig., pl. 2; Ebert & Mostarda, 2013: 18, fig.; Ebert, 2015: 52, fig. 50; Ebert & Mostarda, 2015: 16, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1152; Weigmann, 2016: 888.

South Africa voucher material: SAIAB 6254 [former ORI 936].

South Africa distribution: The west coast from the Orange River (NC) to KZN border with Mozambique.

Remarks: Although this is considered a deep-sea species it is caught occasionally in relatively shallow water, less than 50 m deep, and occasionally off beaches by rock and surf anglers along the west coast during the winter (Compagno *et al*., 1989).

Conservation status: EN (2020).

Order Squaliformes

Family Squalidae Blainville, 1816

Dogfishes

Genus *Cirrhigaleus* Tanaka, 1912

Roughskin Dogfishes

Cirrhigaleus Tanaka, 1912: 151. Type species: *Cirrhigaleus barbifer* Tanaka, 1912. Type by original designation (also monotypic).

Cirrhigaleus asper (Merrett, 1973)

Roughskin Dogfish

Squalus asper Merrett, 1973: 94, fig. 1, pl. 1. Holotype: BMNH 1972.10.10.1. Type locality: Off Aldabra, Western Indian Ocean, 09°27'S, 46°23.5'E, depth 219 m.

Local synonymy: *Squalus asper*: Bass *et al.*, 1976: 18, fig. 12, pl. 4; Compagno, 1984a: 114, fig.; Bass *et al*., 1986: 61, fig. 5.25; Compagno *et al.*, 1989: 22, pl. *Cirrhigaleus asper*: Compagno, 1999: 114; Heemstra & Heemstra, 2004: 54; Compagno *et al*., 2005: 72, fig., pl. 2; Ebert, 2013: 54, fig. 52; Ebert *et al*., 2013a: 74, fig., pl. 3; Ebert & Mostarda, 2013: 19, fig.; NPOA, 2013: 38; da Silva *et al*., 2015: 248; Ebert, 2015: 56, fig. 52; Ebert & van Hees, 2015: 144; Weigmann, 2016: 902.

South Africa voucher material: SAIAB 6037, SAIAB 6038, SAIAB 6040 [former ORI 2786], SAIAB 6092, SAIAB 25423, SAIAB 27027, SAIAB 31890, SAIAB 186460. SAIAB 188839.

South Africa distribution: Port Alfred (EC) to the KZN border with Mozambique.

Remarks: This species does not appear to be as common as several *Squalus* species in South Africa, but that may be due to misidentification with other dogfish species.

Conservation status: DD (2020).

Genus *Squalus* Linnaeus, 1758

Dogfishes

Squalus Linnaeus, 1758: 233. Type species: *Squalus acanthias* Linnaeus, 1758, by subsequent designation of Gill, 1862: 39.

***Squalus acanthias* Linnaeus, 1758**

Spiny Dogfish

Squalus acanthias Linnaeus, 1758: 233. Syntypes: NRM 85 (1 or 2). Possible Syntypes: ZMUU Linn. Coll. 159 (1), ZMUU, Linn. Coll. 160 (1, dry). Type locality: Mediterranean Sea and northeastern Atlantic [original: "Habitat in Oceano Europaeo"].

Local synonymy: *Squalus vulgaris*: Bleeker, 1860b: 57; Thompson, 1914: 149. *Squalus acanthias*: Gilchrist, 1922b: 48; Barnard, 1925: 36; Smith, 1949a: 60, fig. 64; Smith, 1965: 60, fig. 64; Bass *et al*., 1976: 13, figs. 6a, 8e–g, 9, pl. 1; Compagno, 1984a: 111, fig.; Bass *et al*., 1986: 61, fig. 5.24; Compagno *et al*., 1989: 22, pl.; Compagno *et al*., 1991: 66; Ebert *et al*., 1992: 606; Compagno, 1999: 114; Heemstra & Heemstra, 2004: 54; Compagno *et al*., 2005: 73, fig., pl. 3; Ebert *et al*., 2013a: 83, fig., pl. 4; NPOA, 2013: 39; da Silva *et al*., 2015: 248; Ebert, 2015: 58, fig. 60; Ebert & Mostarda, 2015: 17, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1159; Weigmann, 2016: 902. *Squalus acanthias africana*: Myagkov & Kondyurin, 1986: 5 (described from "Wolffish Bay", but co-ordinates [28°S, 17°E] indicate Port Nolloth, South Africa rather than Walvis Bay, Namibia).

South Africa voucher material: SAIAB 4195, SAIAB 6034, SAIAB 6035, SAIAB 7829, SAIAB 8014, SAIAB 21873, SAIAB 21874, SAIAB 21875, SAIAB 21876, SAIAB 21877, SAIAB 21878, SAIAB 25312, SAIAB 25313, SAIAB 25314, SAIAB 25315, SAIAB 25316, SAIAB 25317, SAIAB 25318, SAIAB 25319, SAIAB 25320, SAIAB 25325, SAIAB 25326, SAIAB 25327, SAIAB 25706, SAIAB 25719, SAIAB 25918, SAIAB 26300, SAIAB 26301, SAIAB 26302, SAIAB 27168, SAIAB 40864, SAIAB 48524, SAIAB 63974, SAIAB 201576.

South Africa distribution: Port Nolloth to Cape Point (WC) and possibly to Port Alfred, (EC).

Remarks: Off the west coast of South Africa this is an offshore species of the outer shelf and upper slope that appears to occupy a relative narrow range, mostly between 150–400 m depth and from Port Nolloth to Cape Point (Compagno *et al*., 1991). Records of it along the south coast extending it eastwards to Port Alfred and possibly KZN should be carefully examined to confirm its identification as it may be mistaken for other *Squalus* species.

Conservation status: VU (2020).

***Squalus acutipinnis* Regan, 1908a**

Bluntnose Dogfish

Squalus acutipinnis Regan, 1908a: 248, pl. 37. Lectotype: BMNH 1905.6.8.8 designated by Krefft (1968). Type locality: KwaZulu-Natal, South Africa, Western Indian Ocean.

Local synonymy: *Squalus blainvillei*: Gilchrist, 1902: 165; Thompson, 1914: 149; Bass *et al*., 1976 (in part): 15; Muñoz-Chápuli and Ramos 1989 (in part): 1; Ebert *et al*., 2013 (in part): 85, fig., pl. 4. *Squalus acutipinnis*:

Regan, 1908a: 248, pl. 37; Regan, 1921: 412; Barnard, 1925 (in part): 48; Barnard, 1947: 20, fig. 4, pl. 3; Krefft, 1968 (in part): 34, pl. III A (cited, description, designation of lectotype; South Africa); Bass *et al*., 1986: 62; Myagkov & Kondyurin 1986: 8; Compagno *et al*., 1991: 68; Ebert *et al*., 2010: 22; Ebert, 2015: 57, fig. 55; Ebert & Mostarda, 2015: 18, fig.; Ebert & van Hees, 2015: 144; Viana & de Carvalho, 2016: 628, fig. 1; Veríssimo *et al*., 2017 (in part): 414; Viana *et al*., 2018: 25. *Squalus fernandinus*: Gilchrist, 1922b (in part): 48; Von Bonde, 1923 (in part): 5; Fowler, 1941 (in part): 260–262 (description; South Africa, Mauritius); Smith, 1949a (in part): 60; Smith, 1965 (in part): 60. *Squalus acanthias*: Smith, 1949a: 60, fig. 64; Smith, 1965 (in part): 60, fig. 64. *Squalus megalops*: Bass *et al*., 1976 (in part): 10–11, fig. 11; pl. 3; Compagno, 1984a: 118, fig.; Bass *et al*., 1986 (in part): 62, fig. 5.26; Compagno *et al*., 1989 (in part): 22, pl.; Compagno *et al*., 1991: 68; Ebert *et al*., 1992: 606; Heemstra & Heemstra, 2004; 53; Compagno *et al*., 2005: 76, fig., pl. 3; Ebert, 2013 (in part): 53; Ebert *et al*., 2013a (in part): 91; NPOA, 2013: 39; Compagno, 2016: 1157, 1162; Weigmann, 2016: 904. *Squalus mitsukurii*: Bass *et al*., 1986 (in part): 61. *Squalus probatovi*: Myagkov & Kondyurin, 1986: 567, figs. 1c, g, i.; Gubanov *et al*., 1986: 172; Muñoz-Chápuli & Ramos, 1989: 19; Weigmann, 2016: 904 (synonym of *S. megalops*); Viana *et al*., 2017: 25; Viana *et al*., 2018: 5, 26. *Squalus* cf. *megalops*: Compagno, 1999: 144; Naylor *et al*., 2012a (in part): 58, 148, fig. 42; Naylor *et al*., 2012b (in part): fig. 2.7. *Squalus acutipinna*: da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 144 [amended spelling to *S. acutipinnis*, 2015: 435]. *Squalus blainville*: Veríssimo *et al*., 2017 (in part): 414. *Squalus* cf. *blainvillei* Viana *et al*., 2017: 25 (cited only; Southern Africa); Viana *et al*., 2018: 5, 26. *Squalus margaretsmithae*: Viana *et al*. 2018: 13, figs. 6c–d, 8–14; Viana & de Carvalho, 2018: 628.

South Africa voucher material: *Squalus acutipinnis*: Lectotype: BMNH 1905.6.8.8. Paralectotypes: (3 specimens) BMNH 1859.5.7.68, BMNH 1900.11.6.14. *Squalus margaretsmithae*: Holotype: SAIAB 25389. Paratypes: SAIAB 21856, SAIAB 21858, SAIAB 21859, SAIAB 21939, SAIAB 25362, SAIAB 25366, SAIAB 25377. Non-types: (voucher specimens from Viana & de Carvalho, 2016) SAIAB 7829, SAIAB 10443, SAIAB 19863, SAIAB 21933, SAIAB 25360, SAIAB 25361, SAIAB 25369, SAIAB 25390, SAIAB 25394, SAIAB 26639, SAIAB 34576, SAM 12986, SAM 12996, SAM 28638, SAM 32550, SAM 32894, SAM 34217, ZMB 19151.

South Africa distribution: The Orange River (WC) to KZN border with Mozambique.

Remarks: The South African "short-nose" *Squalus* species-complex (*S. acutipinna*, *S.* cf. *blainville*, *S. mahia*, *S. margaretsmithae*, and *Squalus probatovi*) is in need of extensive taxonomic revision to clarify and identify regional species. The occurrence of five co-occurring "short-nose" species seems unlikely given molecular (Veríssimo *et al*., 2017) and ecological data (Ebert *et al*., 1992; unpubl. data), which does not support this number of species. Therefore, until further detailed data are available *S. margaretsmithae* and *S. probatovi* are considered junior synonyms of *S. acutipinna*.

Conservation status: NT (2020).

***Squalus bassi* Viana, de Carvalho, & Ebert, 2017**

Long-snouted African Dogfish

Squalus bassi Viana, de Carvalho, & Ebert, 2017: 4, figs. 1–6. Holotype: SAM 33476. Type locality: near Agulhas Bank, Western Cape Province, South Africa, 36.21°S, 20.04°E.

Local synonymy: *Acanthias blainvillei*: Bleeker, 1860b: 57; Gilchrist, 1902 (in part): 166; Thompson, 1914 (in part): 149. *Squalus acutipinnis*: Thompson, 1914 (in part): 152; Barnard, 1925 (in part): 48. *Squalus fernandinus*: Gilchrist, 1922b (in part): 48; Smith, 1949a (in part): 60. *Squalus blainvillei*: Bass *et al.*, 1976 (in part): 15, fig. 10; Ebert *et al*., 2002: 355. *Squalus blainville*: Chen *et al.*, 1979: 39; Weigmann, 2016: 902. *Squalus mitsukurii*: Compagno, 1984a: 121, fig.; Bass *et al.*, 1986: 62, fig. 5.27; Compagno *et al.*, 1989: 22, pl.; Heemstra & Heemstra, 2004: 53; Compagno *et al*., 2005: 77, fig., pl. 3; Ebert, 2013: 57, fig. 62; Ebert *et al*., 2013a: 92, fig., pl. 4; NPOA, 2013: 39; Compagno, 2016 (in part): 1157, fig. 4; Veríssimo *et al.*, 2017: 414. *Squalus* cf. *mitsukurii*: Compagno *et al.*, 1991 (in part): 44; Ebert *et al*., 1992: 606; Compagno, 1999: 114; Naylor *et al.*, 2012a: 57; Pickering & Caira, 2012: 107; da Silva *et al*., 2015: 248; Ebert, 2015: 58, fig. 59; Ebert & Mostarda, 2015: 19, fig.; Ebert & van Hees, 2015: 144. *Squalus bassi*: Viana *et al*., 2017: 4, figs. 1–6; Viana & de Carvalho, 2018: 629.

South Africa voucher material: Holotype: SAM 33476. Paratypes: SAIAB 25923, SAIAB 25924, SAIAB 26419, SAIAB 26420, SAIAB 26421, SAIAB 53305, SAM 32611, SAM 33150, SAM 33153, SAM 33154, SAM 34004, SAM 38042, SAM 41904 (formerly SAM 33476). Non-types: (voucher specimens from Viana *et al*.,

2017) SAIAB 21872, SAIAB 25339, SAIAB 25340, SAIAB 25341, SAIAB 25342, SAIAB 26321, SAIAB 26322, SAIAB 26418, SAIAB 203801 (formerly SAIAB 186461), SAIAB 188839, SAM 33155, SAM 33197, SAM 33283, SAM 36412, SAM 38283, SAM 39883, SAM 39885.

South Africa distribution: The Orange River (NC) to KZN, but most common along the west and south coasts of South Africa.

Remarks: *Squalus mitsukurii* appears to be restricted to the northeastern Pacific while *S. bassi*, previously referred to as this species, is restricted to the southern African region.

Conservation status: LC (2020).

***Squalus blainville* (Risso, 1827)**

Longnose Dogfish

Acanthias blainville Risso, 1827: 133, fig., 6, pl. 3. Type: No known types. Type locality: Nice, France, northwestern Mediterranean Sea.

Local synonymy: *Squalus blainvillei*: Bass *et al*., 1976: 15, fig. 10; Muñoz-Chápuli & Ramos 1989a: 6; Ebert *et al*., 2002: 355; Viana *et al*., 2016: 4; Viana *et al*., 2018: 19; Viana & de Carvalho, 2018: 626. *Squalus* cf. *blainville*: Compagno, 1999: 114; Ebert, 2015: 57, fig. 58; Ebert & Mostarda, 2015: 18, fig.; Ebert & van Hees, 2015: 144; Viana *et al*., 2016: 4; Viana *et al*., 2017: 19b; Viana & de Carvalho, 2018: 626. *Squalus blainville*: Ebert, 2013: 57, fig. 62; Ebert *et al*., 2013a: 85, fig., pl. 4; Ebert & Mostarda, 2013: 22, fig.; Compagno, 2016: 1161; Weigmann, 2016: 902; Veríssimo *et al*., 2017: 414.

South Africa voucher material: SAIAB 6015 [former ORI 2449], SAIAB 6020 [former ORI 1528], SAIAB 6021 [former ORI 1535], SAIAB 6022 [former ORI 1386], SAIAB 6023 [former ORI 2450], SAIAB 99114, SAIAB 99115, SAIAB 99116, SAIAB 99117, SAIAB 99118, SAIAB 99119, SAIAB 99120, SAIAB 99121, SAIAB 99122, SAIAB 99123, SAIAB 99124, SAIAB 99125, SAIAB 99126, SAIAB 99127, SAIAB 99128, SAIAB 99129, SAIAB 99130, SAIAB 99130, SAIAB 99131, SAIAB 99132, SAIAB 99133, SAIAB 99134, SAIAB 99135, SAIAB 99136, SAIAB 99137, SAIAB 99138.

South Africa distribution: Uncertain due to confusion with other "short-nose" *Squalus* species, but may range from WC to KZN.

Remarks: The status of *S. blainville* and its relationship to other South African *Squalus* species is currently under investigation to clarify the taxonomic status of this species.

Conservation status: DD (2009).

***Squalus mahia* Viana, Lisher, & de Carvalho, 2017**

Malagasy Skinny Spurdog

Squalus mahia Viana, Lisher, & de Carvalho, 2017: [5], figs 1–6a–b, 7. Holotype: SAIAB 189449. Type locality: Off northern Madagascar, Western Indian Ocean, 15°24.14'S, 46°1.51'E.

Local synonymy: *Squalus megalops*: Bass *et al*., 1976 (in part): 10; Heemstra & Heemstra, 2004: 53 (description; southern Africa); Ebert, 2013 (in part): 53; Weigmann, 2016 (in part): 904. *Squalus mahia*: Viana & de Carvalho, 2018: 628; Viana, Lisher, & de Carvalho, 2018: 1787.

South Africa voucher material: **Paratypes**: SAIAB 25370, SAIAB 186419, SAIAB 186461.

South Africa Distribution: Algoa Bay (EC) to KZN.

Remarks: The status of this species and its distribution along with other southern African "short-nose" *Squalus* species is need of taxonomic revisions.

Conservation status: DD (2020).

Family Centrophoridae Bleeker, 1859

Gulper Sharks

Genus *Centrophorus* Müller & Henle, 1837a

Gulper Sharks

Centrophorus Müller & Henle, 1837a: 115. Type species: *Squalus granulosus* Bloch & Schneider, 1801, by monotypy.

Remarks: *Centrophorus* species from South Africa should be re-examined and re-identified to clarify the species occurring here. Presently, at least four, possibly five, species occur in South African waters.

***Centrophorus granulosus* (Bloch & Schneider, 1801)**

Gulper Shark

Squalus granulosus Bloch & Schneider, 1801: 135. Holotype: ZMB, location unknown. Type locality: no locality. Neotype: AMNH 78263. Type locality: Puerto Santa Cruz de Tenerife, Canary Islands, Spain; neotype designation by White *et al.* (2013).

Local synonymy: *Centrophorus lusitanicus*: Bass *et al*., 1976: 32, fig. 23; Compagno, 1984a: 39, fig.; Bass *et al*., 1986: 50, fig. 5.2; Compagno *et al*., 1989: 24, pl.; Compagno, 1999: 114; Compagno *et al*., 2005: 85, fig., pl. 4; Ebert, 2013: 68, fig. 80; Ebert *et al*., 2013a: 103, fig., pl. 6; Ebert & Mostarda, 2013: 25, fig.; Compagno, 2016: 1171; Weigmann, 2016: 890. *Centrophorus granulosus*: Bass *et al*., 1986: 50, fig. 5.1; Compagno *et al*., 1991: 51; Ebert *et al*., 1992: 603; Compagno, 1999: 114; Compagno *et al*., 2005: 82, fig., pl. 4; Ebert, 2013: 70, fig. 88; Ebert *et al*., 2013a: 102, fig., pl. 6; Ebert & Mostarda, 2013: 25, fig.; White *et al*., 2013: 43, figs. 3–9, 15a; Ebert, 2015: 63, fig. 67; Ebert & Mostarda, 2015: 20, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1170; Weigmann, 2016: 889. *Centrophorus niaukang*: Compagno, 1999: 114; Ebert *et al*., 2013a: 104, fig., pl. 6.

South Africa voucher material: SAM 36184, SAM uncatalogued. Specimens in South African museum collection should be re-examined to confirm their identification.

South Africa distribution: Occurs from off the Orange River (NC) to the KZN border with Mozambique.

Remarks: Prior to White *et al*. (2013, 2017) clarifying the status of *C. granulosus*, most large South African *Centrophorus* species were referred to as *C. lusitanicus* (Bass *et al*., 1976, Compagno *et al*., 1989). However, White *et al*. (2017) determined that *C. lusitanicus* is a junior synonym of *C. granulosus*.

Conservation status: EN (2020).

Centrophorus* cf. *harrisoni

Dumb Gulper Shark

Local synonymy: *Centrophorus* cf. *harrisoni*: Compagno, 1999: 114; Ebert & van Hees, 2015: 144

South Africa voucher material: None.

South Africa distribution: Occurrence in South African waters uncertain.

Remarks: Records of this species are based on a longnosed gulper shark known from a few specimens off KZN. *Centrophorus lesliei* recently described from the eastern Atlantic, Mozambique Channel and Madagascar may be this species (White *et al*., 2017).

Conservation status: NE.

***Centrophorus moluccensis* Bleeker, 1860a**

Smallfin Gulper Shark

Centrophorus moluccensis Bleeker, 1860a: 3. Holotype: RMNH 7415. Type locality: Ambon Island, Molucca Islands, Indonesia, southwestern Pacific.

Local synonymy: *Atractophorus armatus*: Gilchrist, 1922b: 48, fig. 3, pl. 7 (original description, Natal, South Africa); Smith, 1949a: 57, fig. 47; Smith, 1965: 57, fig. 47. *Centrophorus armatus*: Smith, 1967b: 124, pl. 28. *Centrophorus scalpratus*: Bass *et al*., 1976: 29, fig. 21; Bass *et al*., 1986: 51, fig. 5.3. *Centrophorus moluccensis*: Compagno, 1984a: 40, fig.; Compagno *et al*., 1989: 24, pl.; Compagno, 1999: 114; Compagno *et al*., 2005: 85, fig., pl. 4; Ebert, 2013: 72, fig. 90; Ebert *et al*., 2013a: 104, fig., pl. 6; Ebert & Mostarda, 2013: 25, fig.; Ebert & van Hees, 2015: 144; Weigmann, 2016: 890.

South Africa voucher material: SAIAB 6006 [former ORI 2673], SAIAB 6009 [former ORI 1020].

South Africa distribution: Off Durban (KZN) and north to the border with Mozambique.

Remarks: First described as a new species (*Atractophorus armatus*) by Gilchrist (1922b), it has gone by several different scientific names in South Africa, but all are referable to *C. moluccensis*. This species was very common off northern KZN and southern Mozambique (Bass *et al*., 1976).

Conservation status: VU (2020).

***Centrophorus squamosus* (Bonnaterre, 1788)**

Leafscale Gulper Shark

Squalus squamosus Bonnaterre, 1788: 12. Holotype: MNHN A-7829 (head only). Type locality: no locality stated (probably eastern North Atlantic).

Local synonymy: *Centroscymnus fuscus*: Gilchrist & von Bonde, 1924: 2 (original description, off St. Helena Bay, 32°S, l6°E, west coast of South Africa, holotype lost); Barnard, 1925: 51; Smith 1949a: 58; Smith, 1965: 58. *Lepidorhinus squamosus*: Smith, 1967b: 119; Penrith, 1969: 64. *Encheiridiodon hendersoni* Smith, 1967b: 129, pls. 24–27 (original description, Algoa Bay, South Africa, holotype SAIAB [formerly RUSI] 663). *Centrophorus squamosus*: Hulley, 1971: 265, fig. 1; Bass *et al*., 1976: 28, fig. 19; Compagno, 1984a: 43, fig.; Bass *et al*., 1986: 51, fig. 5.4; Compagno *et al*., 1989: 24, pl.; Compagno *et al.*, 1991: 55; Ebert *et al*., 1992: 602; Compagno, 1999: 114; Compagno *et al*., 2005: 86, fig., pl. 4; Ebert, 2013: 68, fig. 77; Ebert *et al*., 2013a: 105, fig., pl. 6; Ebert & Mostarda, 2013: 27, fig.; Ebert, 2015: 64, fig. 68; Ebert & Mostarda, 2015: 21, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1173; Weigmann, 2016: 890.

South Africa voucher material: SAIAB 663 [Holotype: *Encheiridiodon hendersoni*]. SAIAB 26282, SAIAB 99355, SAIAB 99356, SAIAB 99357, SAIAB 99358, SAIAB 99359, SAIAB 99361, SAIAB 99362, SAIAB 99363, SAIAB 99364, SAM 24029, SAM 17161.

South Africa distribution: The Orange River (NC) to the northern KZN border with Mozambique.

Remarks: Smith (1967b), based on a dead specimen collected by the spearfisher in 3–4 m depth, described a new genus and species of gulper shark *Encheiridiodon hendersoni*, but the specimen is actually a *C. squamosus*. Hulley (1971) tentatively synonymized *Centroscymnus fuscus* with this species, but details of its original description suggest it may have been *C. coelolepis*. Unfortunately, the holotype of *C. fuscus* is lost.

Conservation status: EN (2020).

***Centrophorus uyato* (Rafinesque, 1815)**

Little Gulper Shark

Squalus uyato Rafinesque, 1815: 13, fig. 2, pl. 14. Type: no known types. Type locality: off Sicily, Italy, Mediterranean Sea.

Local synonymy: *Centrophorus uyato*: Bass *et al*., 1976: 31, fig. 22; Compagno *et al*., 1989: 24, pl.; Weigmann, 2016: 891. *Centrophorus* cf. *uyato*: Ebert, 2015: 63, fig. 66; Ebert & van Hees, 2015: 144.

South Africa voucher material: SAIAB 25920, SAIAB 25922. Specimens in South African museum collections identified as *C. granulosus* and other unidentified species should be re-examined to confirm their identification as *C. uyato*.

South Africa distribution: Off the west coast from the Orange River (NC) and most likely off the EC and KZN.

Remarks: In South African waters, both *C. granulosus* and *C. uyato* occur, but historically have been misidentified. Compagno *et al*. (1991) listed *C. uyato* in synonymy with *C. granulosus*, but there were in fact two species involved: a large species now known to be *C. granulosus* and a small species now referred to as *C. uyato*. In addition, a third species, *C. lesliei*, recently described from West Africa and the Mozambique Channel, is likely to eventually be found in South African waters. The species name *C. uyato* has been problematic since it appears to have been based on a species of *Squalus* from the Mediterranean Sea. However, only one species of *Centrophorus* occurs in the Mediterranean Sea and it has incorrectly been referred to as *C. granulosus*. A review of the genus is presently ongoing to clarify the status of this small species of *Centrophorus* (D.A. Ebert, W.T. White, unpubl. data).

Conservation status: EN (2020).

Genus *Deania* Jordon & Snyder, 1902

Birdbeaked Dogfishes

Deania Jordan & Snyder, 1902: 80. Type species: *Deania eglantina* Jordan & Snyder, 1902, by monotypy, a junior synonym of *Acanthidium calceum* Lowe, 1839.

Remarks: Three species of *Deania* (*D. calceus*, *D. profundorum*, *D. quadrispinosa*) have long been reported to occur in South African waters, however a fourth species (*D. hystricosa*) was listed by Compagno (1999), but without explanation. Compagno (2016) and Weigmann (2016) subsequently listed this species as occurring off South Africa, but we are unaware of any verified specimens attributed to this species. Furthermore, the

validity of *D. hystricosa* and the nomenclature for the genus is currently under investigation (S. Tanaka, Tokai University, pers. comm.).

***Deania calceus* (Lowe, 1839)**

Birdbeak Dogfish

Acanthidium calceus Lowe, 1839: 92. Holotype (unique): Not BMNH 1861.5.19.33. Type locality: Madeira, North Atlantic.

Local synonymy: *Deania calcea*: Penrith, 1969: 62; Bass *et al*., 1976: 36, fig. 28; Compagno, 1984: 65, fig.; Compagno *et al*., 1989: 26, pl.; Compagno *et al*., 1991: 59; Ebert *et al*., 1992: 604; Compagno, 1999: 114; Compagno *et al*., 2005: 87, pl. 5; Ebert, 2013: 75, fig. 94; Ebert *et al*., 2013a: 108, fig., pl. 7; Ebert & Mostarda, 2013: 28, fig.; Ebert, 2015: 66, fig. 72; Ebert & Mostarda, 2015: 22, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1174; Weigmann, 2016: 891. *Deania calceus*: Bass *et al*., 1986: 53, fig. 5.8.

South Africa voucher material: SAIAB 646, SAIAB 647, SAIAB 648, SAIAB 649, SAIAB 13000, SAIAB 25718, SAIAB 26267, SAIAB 26268, SAIAB 26269, SAIAB 26270, SAIAB 27169, SAIAB 54847, SAM 25556.

South Africa distribution: The Orange River (NC) to at least Algoa Bay (EC).

Remarks: This species is quite common off the west coast between the Orange River to Cape Point, but is likely to be widespread off the South African east coast, including KZN. The species often occurs in considerable numbers, indicating it schools or aggregates (Compagno *et al*., 1991). It is also frequently caught in association with large numbers of *D. profundorum* (D.A. Ebert, pers. obs.). During a series of surveys along the Madagascar Ridge it was also found to be common and frequently encountered in association with *D. profundorum* (D.A. Ebert, unpubl. data).

Conservation status: NT (2020).

***Deania hystricosa* (Garman, 1906)**

Rough Longnose Dogfish

Acanthidium hystricosum Garman, 1906: 206. Holotype (unique): MCZ 1130-S [ex Owston #7784] (missing). Type locality: Sagami Bay, Japan.

Local synonymy: *Deania hystricosum*: Compagno, 1999: 114. *Deania hystricosa*: Compagno *et al*., 2005: 88, pl. 5; Ebert *et al*., 2013a: 108, fig., pl. 7; Compagno, 2016: 1175; Weigmann, 2016: 891.

South Africa voucher material: None.

South Africa distribution: Possibly off the west coast (NC & WC), but the occurrence in South African waters is uncertain.

Remarks: Compagno (1999) listed this species as occurring in southern African waters, while Compagno *et al*. (2005) reported it occurs off the west coast of South Africa. However, the occurrence of this species in South African waters requires confirmation since no specimens are currently available for examination.

Conservation status: DD (2009).

***Deania profundorum* (Smith & Radcliffe, 1912)**

Arrowhead Dogfish

Nasisqualus profundorum Smith & Radcliffe *in* Smith 1912: 681, pl. 53, fig. 3. Type locality: between Leyte and Mindanao Islands, Philippines.

Local synonymy: *Acanthidium natalense*: Gilchrist, 1922: 49, fig. 2, pl. 7 (off Illovo River, KwaZulu-Natal, South Africa); Barnard, 1925: 51, fig. 1, pl. 3; Smith, 1937: 170 (of uncertain validity). *Deania eglantina*: Smith, 1949a: 58, fig. 49 (in part = *D. quadrispinosa*); Smith, 1965: 58, fig. 49. *Deania natalensis*: Penrith, 1969: 62. *Deania profundorum*: Bass *et al.*, 1976: fig. 30; Compagno, 1984a: 67, fig.; Bass *et al*., 1986: 54, fig. 5.9; Compagno *et al*., 1989: 26, pl.; Compagno *et al*., 1991: 59; Ebert *et al*., 1992: 604; Compagno, 1999: 114; Compagno *et al*., 2005: 89, pl. 5; Ebert, 2013: 75, fig. 92; Ebert *et al*., 2013a: 109, fig., pl. 7; Ebert & Mostarda, 2013: 28, fig.; Ebert, 2015: 66, fig. 70; Ebert & Mostarda, 2015: 22, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1175; Weigmann, 2016: 891. *Deania natalense*: Bigelow & Schroeder, 1948b: 106 (Natal, South Africa).

South Africa voucher material: *Acanthidium natalense*: Syntypes: SAIAB [former RUSI] 2 (2 specimens). *Deania profundorum* [non-types]: SAIAB 26274, SAIAB 26275, SAIAB 26276, SAIAB 26277, SAIAB 26308, SAIAB 26335, SAIAB 26336, SAIAB 26436.

South Africa distribution: Off the west coast (NC) and east coast (KZN). This species likely occurs off the entire South African coast along the upper continental slope.

Remarks: The most common *Deania* species after *D. calceus*; both species are frequently caught mixed in large aggregations during research survey cruises.

Conservation status: NT (2020).

***Deania quadrispinosa* (McCulloch, 1915)**

Longsnout Dogfish

Acanthidium quadrispinosum McCulloch, 1915: 100, pl. 14, figs. 5–8. Type: ???. Type locality: Great Australian Bight, southern Australia.

Local synonymy: *Acanthidium quadrispinosum*: Smith, 1937: 168, fig. 1. *Deania eglantina*: Smith, 1949a: 58, fig. 49. (in part = *D. profundorum*); Smith, 1965: 58, fig. 49. *Deania quadrispinosa*: Penrith, 1969: 62; Ebert, 2013: 75, fig. 93; Ebert *et al*., 2013a: 109, fig., pl. 7; Ebert & Mostarda, 2013: 28, fig.; Ebert, 2015: 66, fig. 71; Ebert & Mostarda, 2015: 22, fig.; Compagno, 2016: 1177; Weigmann, 2016: 891. *Deania quadrispinosum*: Bass *et al*., 1976: 37, fig. 29 (caption as *D. quadrispinosa*); Compagno, 1984a: 68, fig.; Compagno *et al*., 1989: 26, pl.; Compagno *et al*., 1991: 60; Compagno, 1999: 114; Compagno *et al*., 2005: 89, pl. 5; Ebert & van Hees, 2015: 144. *Deania quadrispinosus*: Bass *et al*., 1986: 54, fig. 5.10.

South Africa voucher material: SAM uncatalogued, collected during research survey and reported by Compagno *et al*. (1991).

South Africa distribution: A few scattered records from off Cape Town (WC), Algoa Bay (EC), and northern KZN.

Remarks: Records from South Africa are few; this species appears to be more common off Mozambique and Madagascar.

Conservation status: VU (2020).

Family Etmopteridae Fowler, 1934a

Lanternsharks

Genus *Centroscyllium* Müller & Henle, 1841

Combtooth Lanternsharks

Centroscyllium Müller & Henle, 1841: 191. Type species: *Spinax fabricii* Reinhardt, 1825, by monotypy.

***Centroscyllium fabricii* (Reinhardt, 1825)**

Black Dogfish

Spinax fabricii Reinhardt, 1825: 3. Syntypes: ZMUC P 07106 [ex 185] (1 stuffed). Type locality: Julianehåb, Greenland, western North Atlantic.

Local synonymy: *Centroscyllium fabricii*: Compagno, 1984a: 47, fig.; Compagno *et al*., 1989: 28, pl.; Compagno *et al*., 1991: 56; Ebert *et al*., 1992: 603; Compagno, 1999: 114; Ebert *et al*., 2013a: 122, fig., pl. 8; NPOA, 2013: 37; Ebert, 2015: 71, fig. 77; Ebert & Mostarda, 2015: 24, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1185; Weigmann, 2016: 893.

South Africa voucher material: SAIAB 25708, SAIAB 25736, SAIAB 26338, SAIAB 26339, SAIAB 26340, SAIAB 26424, SAIAB 26425, SAIAB 26426, SAIAB 26427, SAIAB 26428, SAIAB 26429, SAIAB 27183, SAIAB 30309.

South Africa distribution: From the Orange River (NC) to southwest of Cape Agulhas (WC).

Remarks: Compagno (1984a) reported the first South African record of this species from off the southwestern Cape. Previous southern African records were from off Namibia (Bass *et al*., 1976). This is one of the most common species of deep-sea lanternsharks off the South African west coast.

Conservation status: LC (2020).

Genus *Etmopterus* Rafinesque, 1810a

Lanternsharks

Etmopterus Rafinesque, 1810a: 14. Type species: *Etmopterus aculeatus* Rafinesque, 1810a, by monotypy.

***Etmopterus alphus* Ebert, Straube, Leslie, & Weigmann, 2016**

Whitecheek Lanternshark

Etmopterus alphus Ebert, Straube, Leslie, & Weigmann, 2016: 2, figs. 1–6. Holotype: SAM MB-F37564. Type locality: east of the Zambezi River, central Mozambique, 18°14'S, 37°31'E.

Local synonymy: *Etmopterus alphus*: Ebert *et al*., 2016: 2, figs. 1–6.

South Africa voucher material: SAIAB 190352.

South Africa distribution: New record. Recently recorded off Durban (KZN).

Remarks: This recently described species was known only from off Mozambique, but is reported here for the first time in South African waters. It also occurs off Madagascar and on the Madagascar Ridge.

Conservation status: LC (2019).

***Etmopterus bigelowi* Shirai & Tachikawa, 1993**

Blurred Lanternshark

Etmopterus bigelowi Shirai & Tachikawa, 1993: 487, figs. 1, 2, 5. Holotype: HUMZ 100176. Type locality: off Angola, 11°37'S, 05°13'W, southeastern Atlantic.

Local synonymy: *Etmopterus bigelowi*: Compagno, 1999: 114; Compagno *et al*., 2005: 95, fig., pl. 8; Ebert, 2013: 83, fig. 104; Ebert *et al*., 2013a: 125, fig., pl. 10; Ebert & Mostarda, 2015: 30, fig.; Ebert, 2015: 75, fig. 81; Ebert & Mostarda, 2015: 27, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1186; Weigmann, 2016: 894.

South Africa voucher material: FAKU 46064, FSFL-S 427, HUMZ 74378. Several uncatalogued SAM specimens from off Mossel Bay (WC).

South Africa distribution: Scattered records from off the west coast (NC) to KZN.

Remarks: The occurrence of this species off South Africa is patchy, but this may be due to misidentification with *E. pusillus*.

Conservation status: LC (2020).

***Etmopterus compagnoi* Fricke & Koch, 1990**

Brown Lanternshark

Etmopterus compagnoi Fricke & Koch, 1990: 2, figs. 1–2. Holotype: SMNS 8999. Type locality: off Cape Town, Western Cape Province, South Africa, 34°41'S, 18°37'E, southeastern Atlantic.

Local synonymy: *Etmopterus spinax*: Gilchrist, 1922b: 49; Barnard, 1925; Barnard, 1947: 20, fig. 5, pl. 3; Smith, 1949a: 59, fig. 51; Smith, 1965: 59, fig. 51; Compagno, 1984: 85, fig. *Spinax spinax*: Norman, 1935: 37. *Etmopterus gracilispinis*: Karrer, 1973: 199; Shcherbachev *et al*., 1978: 186; Compagno, 1984: 76, fig.; Compagno *et al*., 1989: 28, pl.; Compagno, 2016: 1187. *Etmopterus* sp.: Bass *et al*., 1986: 57, fig. 5.16. *Etmopterus compagnoi*: Fricke & Koch, 1990: 2, figs. 1–2; Compagno *et al*., 1991: 61; Ebert *et al*., 1992: 605; Compagno, 1999: 114; Straube *et al*., 2011a: 146; Ebert, 2013: 84, fig. 114; Ebert *et al*., 2013a: 128, fig., pl. 10; Ebert & Mostarda, 2013: 34, fig.; Ebert, 2015: 76, fig. 87; Ebert & Mostarda, 2015: 28, fig.; Ebert & van Hees, 2015: 144; Straube *et al*., 2015: 11; Weigmann, 2016: 894. *Etmopterus unicolor*: Compagno *et al*., 2005: 108, fig., pl. 9.

South Africa voucher material: SAIAB 25737, SAIAB 26271, SAIAB 27586, SAIAB 27587, SAIAB 27588, SAIAB 27589, SAIAB 27590, SAIAB 27591, SAIAB 27592, SAIAB 27593, SAIAB 27594, SAIAB 27595, SAIAB 27596, SAIAB 27597, SAIAB 27598, SAIAB 61706, SAIAB 87361, SAIAB 186423, SAIAB 186458, SAIAB 189169, SAIAB 193038.

South Africa distribution: The Orange River (NC) to at least Port Alfred (EC) and possibly KZN.

Remarks: *Etmopterus compagnoi* has a convoluted taxonomic history with most early literature accounts referring to it as either *E. spinax* or *E. gracilispinis*. However, Straube *et al*. (2015) found this species to be distinct from these other lanternsharks. *Etmopterus compagnoi* was thought to be a South African endemic (Compagno *et al*., 1989; Straube *et al*., 2015). However, it appears to have a wider geographic range occurring from southern Namibia to Cape Point (WC), where it is quite common, and east to off Port Alfred (EC) (Ebert, 2015). It also occurs off southern Mozambique and the northern Madagascar Plateau. However, specimens from outside the WC and EC should be closely examined to confirm their identification.

Conservation status: LC (2019).

***Etmopterus granulosus* (Günther, 1880)**

Southern Lanternshark

Spinax granulosus Günther, 1880: 19, fig. C, pl. 2. Holotype: BMNH 1879.5.14.460. Type locality: Southwestern coast of South America, *Challenger* station 305.

Local synonymy: *Etmopterus granulosus*: Gilchrist, 1922b: 49; Barnard, 1925: 49, fig. 8, pl. 2; Smith, 1949a: 58, fig. 50; Bigelow & Schroeder, 1957: 55; Smith, 1965: 58, fig. 50; Compagno, 1984a: 77, fig.; Bass *et al*., 1986: 55 (Cape Point); Compagno *et al*., 1989: 28, pl.; Straube *et al*., 2011a: 138; Ebert, 2013: 84, fig. 117; Ebert *et al*., 2013a: 132, fig., pl. 9; Ebert & Mostada, 2013: 31, fig.; Ebert, 2015: 78, fig. 91; Ebert & Mostada, 2015: 25, fig.; Ebert & van Hees, 2015: 144; Straube *et al*., 2015: 11; Weigmann, 2016: 895. *Spinax granulosus*: Norman, 1935: 37 (SW of Cape Town, 34°08'S, 17°33'E). *Etmopterus* cf. *granulosus*: Compagno *et al*., 1991: 63; Ebert *et al*., 1992: 605; Compagno, 1999: 114. *Etmopterus baxteri*: Compagno *et al*., 2005: 94, pl. 8; Compagno, 2016: 1185.

South Africa voucher material: SAIAB 25710, SAIAB 26341, SAIAB 26342, SAIAB 26343, SAIAB 26344, SAIAB 26345, SAIAB 26346, SAIAB 26347, SAIAB 26348, SAIAB 26349, SAIAB 26350, SAIAB 26351, SAIAB 26352, SAIAB 26353, SAIAB 26354, SAIAB 26355, SAIAB 26356, SAIAB 26357, SAIAB 26358, SAIAB 26359, SAIAB 26360, SAIAB 26361, SAIAB 26362, SAIAB 26363, SAIAB 26364, SAIAB 26365, SAIAB 26366, SAIAB 26367, SAIAB 26368, SAIAB 26369, SAIAB 26370, SAIAB 26371, SAIAB 26372, SAIAB 26373, SAIAB 26374, SAIAB 26375, SAIAB 26430, SAIAB 26431, SAIAB 26432, SAIAB 26433, SAIAB 26434, SAIAB 26435, SAIAB 27170, SAIAB 27171, SAIAB 27172, SAIAB 27173, SAIAB 27174, SAIAB 27175, SAIAB 27176, SAIAB 27177, SAIAB 27178, SAIAB 27179, SAIAB 27180, SAIAB 27181, SAIAB 27182, SAIAB 27184, SAIAB 27185, SAIAB 27186, SAIAB 30297, SAIAB 81676, SAIAB 186424, SAIAB 186462.

South Africa distribution: West coast from Cape Columbine (WC) to about Algoa Bay (EC).

Remarks: The taxonomic history of this species off South Africa, like most members of this genus, has been rather convoluted, although Straube *et al*. (2015) clarified the name status of this species. *Etmopterus granulosus* is one of the most common lanternsharks off the South African west coast. It is wide-ranging throughout the Southern Hemisphere at higher latitudes.

Conservation status: LC (2018).

***Etmopterus pusillus* (Lowe, 1839)**

Smooth Lanternshark

Acanthidium pusillum Lowe, 1839: 91. Syntypes: BMNH 1855.11.29.27 (2 specimens). Type locality: Madeira, eastern Atlantic.

Local synonymy: *Etmopterus pusillus*: Bass *et al*., 1976: 23, fig. 16 (KZN); Compagno, 1984: 82, fig.; Bass *et al*., 1986: 56, fig. 5.14; Compagno *et al*., 1989: 30, pl.; Compagno *et al*., 1991: 64; Ebert *et al*., 1992: 605; Compagno, 1999: 115; Compagno *et al*., 2005: 107, fig., pl. 7; Ebert, 2013: 83, fig. 105; Ebert *et al*., 2013a: 137, fig., pl. 9; Ebert & Mostada, 2013: 30, fig.; Ebert, 2015: 80, fig. 93; Ebert & Mostada, 2015: 27, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1188; Weigmann, 2016: 897.

South Africa voucher material: SAIAB 6182 [former ORI 1104], SAIAB 6183 [former ORI 1477], SAIAB 6184 [former ORI 2866], SAIAB 6185 [former ORI 2867], SAIAB 6186 [former ORI 2868], SAIAB 6187 [former ORI 2869].

South Africa distribution: West coast from the Orange River (NC) to Cape Point (WC) and off KZN, but not yet confirmed from the EC.

Remarks: Widespread, but patchy off South Africa, this species is often misidentified with *E. bigelowi*.

Conservation status: LC (2020).

***Etmopterus sculptus* Ebert, Compagno, & De Vries, 2011**

Sculpted Lanternshark

Etmopterus sculptus Ebert, Compagno, & De Vries, 2011: 279, figs. 1–2. Holotype: SAM 37569. Type locality: 33°22.9'S, 17°29.1'E, off Cape Town, South Africa.

Local synonymy: *Etmopterus lucifer*: Gilchrist, 1922b: 49; Barnard, 1925: 50; Smith, 1949a: 59, fig. 52; Bigelow & Schroeder, 1957: 56; Smith, 1965: 59, fig. 52; Bass *et al*., 1976: 25, figs. 17, 18c; Compagno, 1984: 79, fig.;

Compagno *et al*., 2005: 102, fig., pl. 8. *Spinax lucifer*: Norman, 1935: 37. *Etmopterus brachyurus*: Bass *et al*., 1986: 55, fig. 5.11; Compagno *et al*., 1989: 30, pl.; Compagno *et al*., 1991: 61. *Etmopterus* cf. *brachyurus*: Ebert *et al*., 1992: 604; Compagno, 1999: 114; Compagno, 2016: 1186, fig. *Etmopterus sculptus*: Ebert, 2013: 83, fig. 108; Ebert *et al*., 2013a: 139, fig., pl. 10; Ebert & Mostada, 2013: 33, fig.; Ebert, 2015: 82, fig. 95; Ebert & Mostada, 2015: 29, fig.; Ebert & van Hees, 2015: 144; Weigmann, 2016: 897.

South Africa voucher material: Holotype: SAM 37569. Paratypes: SAM 33011, 37570 (2 specimens), 37571 (2 specimens). Non-types: SAIAB 6191, SAIAB 6195, SAIAB 2430, SAIAB 2431, SAIAB 2432, SAIAB 2588, SAIAB 21930, SAIAB 21931, SAIAB 25308, SAIAB 25309, SAIAB 25735, SAIAB 26256, SAIAB 26258, SAIAB 26259, SAIAB 26265, SAM F41924-3, SAM F41924-4.

South Africa distribution: Occurs along the entire South African coast from the Orange River (NC) to KZN border with Mozambique.

Remarks: *Etmopterus sculptus* was long misidentified in the South African literature either as *E. brachyurus* or *E. lucifer*, but both of these species occur in the Western Pacific. *Etmopterus sculptus* is one of the most common lanternshark species found in South African waters (after *E. granulosus*).

Conservation status: LC (2019).

***Etmopterus sentosus* Bass, D'Aubrey, & Kistnasamy, 1976**

Thorny Lanternshark

Etmopterus sentosus Bass, D'Aubrey, & Kistnasamy, 1976: 22, figs. 15, 18a. Holotype: SAIAB 6201 [ex ORI 2369]. Type locality: near Bazaruto Island, southern Mozambique.

Local synonymy: *Etmopterus sentosus*: Bass *et al*., 1976: 22, figs. 15, 18a; Compagno, 1984a: 64, fig.; Bass *et al*., 1986: 57, fig. 5.15; Compagno *et al*., 1989: 30, pl.; Compagno, 1999: 115; Compagno *et al*., 2005: 107, fig., pl. 8.; Ebert, 2013: 82, fig. 101; Ebert *et al*., 2013a: 139, fig., pl. 11; Ebert & van Hees, 2015: 144; Weigmann, 2016: 897.

South Africa voucher material: SAIAB 6200 [former ORI 1391].

South Africa distribution: Occurs from off Durban to northern KZN.

Remarks: This distinctive lanternshark species appears to be common where it occurs, especially off southern Mozambique.

Conservation status: LC (2019).

***Etmopterus viator* Straube, 2011**

Traveler Lanternshark

Etmopterus viator Straube, *in* Straube *et al*., 2011: 143, figs. 2a, b, 3, 5. Holotype: MNHN 2008-1899. Type locality: Kerguelen Plateau, 49°39'29"S, 72°45'00"E, Indian Ocean.

Local synonymy: *Etmopterus viator*; Straube, 2011a: 143, figs. 2a, b, 3, 5 (distribution including South Africa); Ebert, 2013: 84, fig. 116; Ebert *et al.*, 2013a: 142, fig., pl. 10; Ebert & Mostada, 2013: 34, fig.; Ebert, 2015: 75, fig. 86; Ebert & van Hees, 2015: 144; Weigmann, 2016: 898.

South Africa voucher material: None.

South Africa distribution: Straube (2011) mentions that this species was recorded from three locations in South African waters, but provides no location information or cites any specimens in museum collection.

Remarks: This appears to be a wide-ranging species around seamounts and islands in the Southern Ocean.

Conservation status: LC (2018).

Family Somniosidae Jordan, 1888

Sleeper Sharks

Genus *Centroscymnus* Barbosa du Bocage & de Brito Capello, 1864

Portuguese Sharks

Centroscymnus Barbosa du Bocage & de Brito Capello, 1864: 263. Type species: *Centroscymnus coelolepis* Barbosa du Bocage & de Brito Capello, 1864 by monotypy.

***Centroscymnus coelolepis* Barbosa du Bocage & de Brito Capello, 1864**

Portuguese Shark

Centroscymnus coelolepis Barbosa du Bocage & de Brito Capello, 1864: 263, fig. 4. Holotype: Museu Bocage, Lisbon, MB T113, destroyed in fire. Type locality: off Portugal, northeastern Atlantic.

Local synonymy: ?*Centroscymnus fuscus*: Gilchrist & von Bonde, 1924: 2 (off St. Helena Bay, South Africa, SE Atlantic); Barnard, 1925: 51; Smith, 1949a: 58; Smith, 1965: 58. *Centrophorus squamosus*: Hulley, 1971: 267, fig. 1; Bass *et al.*, 1976: 28 (in part, for synonymy of *C. fuscus* with this species). *Centroscymnus coelolepis*: Compagno, 1984a: 55, fig.; Compagno *et al*., 1989: 32, pl.; Compagno *et al*., 1991: 56; Ebert *et al*., 1992: 603; Compagno, 1999: 115; Compagno *et al*., 2005: 112, fig., pl. 10; Ebert, 2013: 90, fig. 127; Ebert *et al.*, 2013a: 151, fig., pl. 13; Ebert & Mostada, 2013: 35, fig.; Ebert, 2015: 87, fig. 104; Ebert & Mostada, 2015: 31, fig.; Ebert & van Hees, 2015: 144; White *et al*., 2015: 214; Weigmann *et al*., 2016b: 642; Compagno, 2016: 1189; Weigmann, 2016: 899.

South Africa voucher material: SAIAB 25727, SAIAB 26272, SAIAB 26273, SAIAB 26417, SAIAB 27601.

South Africa distribution: Common off the west coast from the Orange River (NC) to off Cape Agulhas (WC), but also extending to the EC. It has not been found off KZN, but likely occurs there since it has been caught off southern Mozambique and is common on the Walters Shoal (Weigmann *et al*., 2016).

Remarks: *Centroscymnus fuscus* was described from a specimen taken off St. Helena Bay and was recognized as a valid species until Hulley (1971) and Bass *et al*. (1976) synonymized it with *Centrophorus squamosus*. However, details of the original description by Gilchrist and von Bonde (1924) suggest that *C. fuscus* may be a synonym of *C. coelolepis* rather than *C. squamosus*. *Centroscymnus coelolepis* is common in the area off St. Helena Bay where the type specimen was caught, while *C. squamosus* is relatively uncommon in that area. Unfortunately, *C. fuscus* was never illustrated and the holotype is lost.

Conservation status: NT (2020).

***Centroscymnus owstonii* Garman, 1906**

Roughskin Dogfish

Centroscymnus owstonii Garman, 1906: 207. Holotype (unique): MCZ 1037-S [ex Owston #7693]. Type locality: Sagami Bay, Japan.

Local synonymy: *Centroscymnus owstonii*: Compagno, 1999: 115; Compagno *et al*., 2005: 112, fig., pl. 10; Ebert, 2013: 89, fig. 126; Ebert *et al*., 2013a: 151, fig., pl. 13; Ebert & Mostada, 2013: 37, fig.; Ebert, 2015: 89, fig. 106; Ebert & Mostada, 2015: 33, fig.; Ebert & van Hees, 2015: 144; White *et al*., 2015: 214; Compagno, 2016: 1195; Weigmann, 2016b: 899; Weigmann *et al*., 2016: 641.

South Africa voucher material: Uncatalogued specimens at SAM.

South Africa distribution: Mossel Bay (WC) but likely more wide-ranging.

Remarks: Most previous records of this species from South Africa were misidentifications with either *C. coelolepis* or *C. crepidater*, but a few specimens of this species were caught in very deep water off Mossel Bay. This record, along with several specimens caught east of South Africa on the Walters Shoal and Madagascar Ridge, confirm the widespread distribution of this species.

Conservation status: VU (2018).

Genus *Centroselachus* Garman, 1913

Velvet Dogfish

Centroselachus Garman, 1913: 206. Type species: *Centrophorus crepidater* Barbosa du Bocage & de Brito Capello, 1864 by monotypy.

***Centroselachus crepidater* (Barbosa du Bocage & de Brito Capello, 1864)**

Longnose Velvet Dogfish

Centrophorus crepidater Barbosa du Bocage & de Brito Capello, 1864: 262, fig. 3. Holotype (unique): MB t.112(49) [destroyed in fire in 1978]. Denticles from holotype in MCZ 89511. Type locality: [Nossos mares] Portugal, northeastern Atlantic.

Local synonymy: *Centroscymnus crepidater*: Compagno *et al*., 1989: 32, pl.; Compagno *et al*., 1991: 58; Ebert *et al*., 1992: 604; Compagno, 1999: 115. *Centroselachus crepidater*: Compagno *et al*., 2005: 113, fig., pl. 10;

Ebert, 2013: 92, fig. 129; Ebert *et al*., 2013a: 152, fig., pl. 13; Ebert & Mostada, 2013: 39, fig.; Ebert, 2015: 91, fig. 108; Ebert & Mostada, 2015: 35, fig.; Ebert & van Hees, 2015: 144; White *et al*., 2015: 214; Compagno, 2016: 1196; Weigmann, 2016: 899; Weigmann *et al*., 2016b: 642.

South Africa voucher material: SAIAB 25724, SAIAB 26278, SAIAB 26279, SAIAB 26280, SAIAB 26281, SAIAB 26337, SAIAB 27599, SAIAB 27600, SAIAB 27602.

South Africa distribution: The Orange River (NC) to Cape Agulhas (WC), but not yet confirmed from the EC or KZN.

Remarks: First reported in South African waters by Compagno *et al*. (1989) and Compagno *et al*. (1991); previous southern African records were from off Namibia (Bass *et al*., 1976; Bass *et al*., 1986). Although the species has not been reported from the EC or KZN, it is quite common east of South Africa along the Madagascar Ridge. A somewhat common species along the upper continental slope, *C. crepidater* appears to be a faunal associate of *C. coelolepis* since both species are frequently collected together (Compagno *et al*., 1991).

Conservation status: NT (2020).

Genus *Scymnodalatias* Garrick, 1956

Spineless Velvet Dogfishes

Scymnodalatias Garrick, 1956: 564. Type species: *Scymnodon sherwoodi* Archey, 1921 by original designation (also monotypic).

? ***Scymnodalatias albicauda* Taniuchi & Garrick, 1986**

Whitetail Dogfish

Scymnodalatias albicauda Taniuchi & Garrick, 1986: 120, figs. 1–2. Holotype: FUMT-P 197. Type locality: South Indian Ocean, 45°S, 92°E.

Local synonymy: *Scymnodalatias albicauda*: Compagno *et al*., 2005: 114, fig., pl. 11; Ebert, 2013: 96, fig. 135; Ebert *et al*., 2013a: 153, fig., pl. 14; Ebert & Mostada, 2013: 45, fig.; Ebert & Dando, 2014: 87, fig.; Ebert, 2015: 93, fig. 110; Ebert & Mostada, 2015: 39, fig.; Ebert & van Hees, 2015: 144; Weigmann, 2016: 899.

South Africa voucher material: None.

South Africa distribution: Southwest of South Africa (Ebert, 2013, 2015). Presence in South African waters requires confirmation.

Remarks: Reported from a few scattered records southwest of South Africa, there are no voucher specimens in museum collections confirming its presence in South African waters (Ebert, 2013; 2015).

Conservation status: DD (2018).

Genus *Somniosus* Lesueur, 1818

Sleeper Sharks

Somniosus Lesueur, 1818: 222. Type species: *Somniosus brevipinna*, Lesueur, 1818 by monotypy; synonym of *Somniosus microcephalus* (Bloch & Schneider, 1801).

***Somniosus antarcticus* Whitley, 1939**

Southern Sleeper Shark

Somniosus antarcticus Whitley, 1939: 242. Holotype (unique): tooth and skin samples (location unknown). Type locality: Macquarie Island, south of Tasmania, Australia. Species described from a drawing in Waite, 1916: 51, fig. 10.

Local synonymy: *Somniosus microcephalus*: Bass *et al*., 1976: 43; Compagno, 1984a: 103, fig.; Bass *et al*., 1986: 60, fig. 5.23; Compagno *et al*., 1989: 32, pl. *Somniosus* cf. *microcephalus*: Compagno *et al*., 1991: 66. *Somniosus antarcticus*: Compagno, 1999: 115; Yano *et al*., 2004: 369; Compagno *et al*., 2005: 117, fig., pl. 12; Ebert, 2013: 98, fig. 137; Ebert *et al*., 2013a: 156, fig., pl. 15; Ebert & Dando, 2014: 89, fig.; Ebert, 2015: 95, fig. 112; Ebert & van Hees, 2015: 144; Weigmann, 2016: 900.

South Africa voucher material: SAIAB 203925, SAM 23747, SAM 32671, SAM 34721, SAM 35443.

South Africa distribution: Known from a few specimens taken between Cape Columbine and Saldanha Bay, and from southwest of Cape Town (WC).

Remarks: The first record of this species was taken off Cape Columbine (WC) in 1963 and identified as *S.*

microcephalus. However, Yano *et al*. (2004) examined additional specimens from off the WC and in the Southern Hemisphere and concluded that these were a different species, *S. antarcticus*.

Conservation status: LC (2018).

Genus *Zameus* Jordan & Fowler, 1903

Velvet Dogfishes

Zameus Jordan & Fowler, 1903: 632. Type species: *Centrophorus squamulosus* Günther, 1877. Type by original designation, also monotypic.

***Zameus squamulosus* (Günther, 1877)**

Velvet Dogfish

Centrophorus squamulosus Günther, 1877: 433. Holotype: BMNH 1880.5.1.1, *Challenger* station 232, off Inosima, Japan, 35°11'N, 139°28'E.

Local synonymy: *Scymnodon* ? *obscurus*: Bass *et al*., 1976: 35. *Scymnodon obscurus*: Compagno, 1984a: 98, fig. *Centroscymnus obscurus*: Bass *et al*., 1986: 53, fig. 5.7. *Zameus squamulosus*: Taniuchi & Garrick, 1986: 129, fig. 3; Compagno *et al*., 2005: 121, fig., pl. 11; Ebert, 2013: 101, fig. 139; Ebert *et al*., 2013a: 159, fig., pl. 14; Ebert & Mostada, 2013: 43, fig.; Ebert & Dando, 2014: 91, fig.; Ebert, 2015: 97, fig. 114; Ebert & Mostada, 2015: 37, fig.; Ebert & van Hees, 2015: 144; White *et al*., 2015: 213; Compagno, 2016: 1199, fig.; Weigmann, 2016: 901. *Scymnodon squamulosus*: Compagno *et al*., 1989: 32, pl.; Compagno *et al*., 1991: 66; Ebert *et al*., 1992: 607; Compagno, 1999: 115.

South Africa voucher material: SAIAB 6093, SAIAB 99105, SAIAB 99106.

South Africa distribution: Entire coast from the Orange River (NC) to northern KZN.

Remarks: The first records of this species were found in the stomach of a Sperm Whale (*Physeter macrocephalus*) harpooned off Durban in 1971, which had four partially digested *Z. squamulosus* (Bass *et al*., 1976).

Conservation status: LC (2020).

Family Oxynotidae Gill, 1872

Rough Sharks

Genus *Oxynotus* Rafinesque, 1810a

Rough Sharks

Oxynotus Rafinesque, 1810a: 45, 60. Type species: *Oxynotus centrina*, Rafinesque, 1810a, by monotypy, equals *Squalus centrina* Linnaeus, 1758.

***Oxynotus centrina* (Linnaeus, 1758)**

Angular Rough Shark

Squalus centrina Linnaeus, 1758: 233. Holotype: Unknown. Type locality: "Habitat in mari Mediterranao" [Mediterranean Sea].

Local synonymy: *Oxynotus centrina*: Barnard, 1949: 970; Smith, 1965: 513, fig. 54a; Penrith, 1969: 60; Compagno, 1984a: 127, fig.; Bass *et al*., 1986: 59, fig. 5.21; Compagno *et al*., 1989: 20, pl.; Compagno, 1999: 115; Compagno *et al*., 2005: 123, fig., pl. 13; Ebert *et al*., 2013a: 163, fig., pl. 16; Ebert, 2015: 101, fig. 116; Ebert & Mostada, 2015: 16, fig.; Ebert & van Hees, 2015: 145; Compagno, 2016: 1203; Weigmann, 2016: 899. *Oxynotus* sp.: Bass *et al*., 1976: 8, fig. 5. *Oxynotus shubnikovi* Myagkov, 1986: 171, fig. 59; Compagno *et al*., 1991: 72.

South Africa voucher material: SAM 22507.

South Africa distribution: A very rare species in South African waters known from a specimen off Cape Town (WC) (Barnard, 1949).

Remarks: Myagkov (1986) named a new species *O. shubnikovi* from northern Namibia, but a review of the available regional material found no distinct characteristics to separate it from the European *O. centrina*.

Conservation status: VU (2007).

Family Dalatiidae Gray, 1851
Kitefin Sharks

Genus *Dalatias* Rafinesque, 1810a
Kitefin Sharks
Dalatias Rafinesque, 1810a: 10. Type species: *Dalatias sparophagus* Rafinesque, 1810a. Type by subsequent designation.

***Dalatias licha* (Bonnaterre, 1788)**
Kitefin Shark
Squalus licha Bonnaterre, 1788: 12. Holotype: Lost. Type locality: Capbreton, north of Bayonne, France, northeastern Atlantic Ocean.
Local synonymy: *Scymnorhinus brevipinnis*: Smith, 1936: 1, figs. 1–2. *Scymnorhinus licha*: Bass *et al*., 1986: 60, fig. 5.22. *Dalatias licha*: Smith, 1949a: 56, fig. 46; Smith, 1965: 56, fig. 46; Bass *et al*., 1976: 41; Compagno, 1984a: 63, fig.; Compagno *et al*., 1989: 34, pl.; Compagno, 1999: 115; Compagno *et al*., 2005: 125, fig., pl. 14; Ebert, 2013: 109, fig. 148; Ebert *et al*., 2013a: 297, fig., pl. 17; Ebert & Mostada, 2013: 47, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 144; Weigmann, 2016: 892.
South Africa voucher material: SAIAB 27 (Holotype of *Dalatias brevipinnis*). SAIAB 6057, SAIAB 6059, SAIAB 6236, SAIAB 99092, SAM 25555, SAIAB 189052.
South Africa distribution: Off Algoa Bay (EC) to Kosi Bay (KZN).
Remarks: Smith (1936) described *Dalatias brevipinnis* (Holotype SAIAB 27) from three specimens taken off Algoa Bay, 35 miles south of Cape Recife (EC). However, Smith (1949a) later placed his species in synonymy with *D. licha*. A common species off KZN and southern Mozambique, its range extends to off Algoa Bay where it is found in deep water over 400 m. Although it not very common in the EC, Bass *et al*. (1976) reported about five specimens that had been caught off Port Elizabeth.
Conservation status: VU (2018).

Genus *Euprotomicroides* Hulley & Penrith, 1966
Taillight Sharks
Euprotomicroides Hulley & Penrith, 1966: 222. Type species: *Euprotomicroides zantedeschia* Hulley & Penrith, 1966. Type by monotypy.

***Euprotomicroides zantedeschia* Hulley & Penrith, 1966**
Taillight Shark
Euprotomicroides zantedeschia Hulley & Penrith, 1966: 222, figs. a–g. Holotype (unique): SAM 23577. Type locality: West of Cape Town, Western Cape Province, South Africa, southeast Atlantic.
Local synonymy: *Euprotomicroides zantedeschia*: Hulley & Penrith, 1966: 222, figs. a–g; Bass *et al*., 1976: 50, fig. 32h; Compagno, 1984a: 89, fig.; Bass *et al*., 1986: 57, fig. 5.17; Compagno *et al*., 1989: 34, pl.; Compagno *et al*., 1991: 64; Compagno, 1999: 115; Compagno *et al*., 2005, fig., pl. 14; Ebert *et al*., 2013a: 168, fig., pl. 17; Ebert, 2015: 105, fig. 122; Ebert & van Hees, 2015: 144; Weigmann, 2016: 892.
South Africa voucher material: SAM 23577.
South Africa distribution: Known from a single specimen caught west of Cape Town (WC).
Remarks: A rare species known from only three additional specimens; one from off Uruguay, southwest Atlantic, and two off Chile, southeast Pacific.
Conservation status: LC (2019).

Genus *Euprotomicrus* Gill, 1865
Pygmy Sharks
Euprotomicrus Gill, 1865: 264. Type species: *Scymnus* (*Laemargus*) *labordii* Müller & Henle, 1839. Type by monotypy, equal to *Scymnus bispinatus* Quoy & Gaimard, 1824.

***Euprotomicrus bispinatus* (Quoy & Gaimard, 1824)**

Pygmy Shark

Scymnus bispinatus Quoy & Gaimard, 1824: 197, figs. 1–2, pl. 44. Holotype (unique): MNHN 0000-1216. Type locality: Mauritius, Mascarenes, southwestern Indian Ocean.

Local synonymy: *Euprotomicrus bispinatus*: Bass *et al*., 1976: 47, fig. 34; Compagno, 1984a: 90, fig.; Bass *et al*., 1986: 58, fig. 5.18; Compagno *et al*., 1989: 34, pl.; Compagno, 1999: 115; Compagno *et al*., 2005: 126, fig., pl. 14; Ebert, 2013: 111, fig. 150; Ebert *et al*., 2013a: 169, fig., pl. 17; Ebert & Mostada, 2013: 48, fig.; Ebert & Dando, 2014: 81, fig.; Ebert, 2015: 107, fig. 124; Ebert & Mostada, 2015: 41, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1211, fig.; Weigmann, 2016: 892.

South Africa voucher material: SAIAB 6290 [formerly ORI 2621], SAM 26071.

South Africa distribution: Known from off Cape Town (WC) and off Port Shepstone (KZN).

Remarks: Bass *et al*. (1976) reported two specimens, a 14.8 cm TL immature male taken off the KZN coast at the surface over very deep water at night and a 21.2 cm TL mature male taken 800 km northwest of Cape Town.

Conservation status: LC (2015).

Genus *Heteroscymnoides* Fowler, 1934

Longnose Pygmy Sharks

Heteroscymnoides Fowler, 1934: 239. Type species: *Heteroscymnoides marleyi* Fowler, 1934. Type by original designation (also monotypic).

***Heteroscymnoides marleyi* Fowler, 1934**

Longnose Pygmy Shark

Heteroscymnoides marleyi Fowler, 1934: 240, fig. 4. Holotype: ANSP 53046. Type locality: Point Ocean Beach, Durban, KwaZulu-Natal, southwestern Indian Ocean.

Local synonymy: *Heteroscymnus longus*: Fowler, 1925b: 191; Barnard, 1927: 1013. *Heteroscymnoides marleyi*: Fowler, 1934: 240, fig. 4.; Smith, 1949a: 56, fig. 45; Bigelow & Schroder, 1957: 132, figs. 15f, g, 16e; Smith, 1965: 56, fig. 45; Bass *et al*., 1976: 49, fig. 35; Compagno, 1984a: 92, fig.; Bass *et al*., 1986: 58, fig. 5.19; Compagno *et al*., 1989: 34, pl.; Compagno, 1999: 115; Compagno *et al*., 2005: 126, fig., pl. 14; Ebert, 2013: 113, fig. 152; Ebert *et al*., 2013a: 169, fig., pl. 17; Ebert & Mostada, 2013: 48, fig.; Ebert & Dando, 2014: 83, fig.; Ebert, 2015: 108, fig. 126; Ebert & Mostada, 2015: 41, fig.; Ebert & van Hees, 2015: 144; Weigmann, 2016: 892.

South Africa voucher material: ANSP 53046.

South Africa distribution: Known from a single specimen picked up on a beach at Durban (Fowler, 1934).

Remarks: The holotype was picked up on a beach near Vetches Pier, Durban, on 4 January 1923. The 12.6 cm TL female specimen was collected by H.W. Bell-Marley who sent it to H.W. Fowler who originally mistook it for *Heteroscymnus longus* Tanaka, 1912; a species referable to the genus *Somniosus*. Fowler (1934) later revised his original identification and described it as a new genus and species. The species appears to be wide-ranging in the Southern Hemisphere with the only six known specimens occurring in three widely dispersed locations in the southwestern Indian Ocean, southeastern Atlantic Ocean, and southeastern Pacific Ocean (Ebert, 2015).

Conservation status: LC (2019).

Genus *Isistius* Gill, 1865

Cookiecutter Sharks

Isistius Gill, 1865: 264. Type species: *Scymnus brasiliensis* Müller & Henle, 1841. Type by monotypy; equals *Scymnus brasiliensis* Quoy & Gaimard, 1824.

***Isistius brasiliensis* (Quoy & Gaimard, 1824)**

Cookiecutter Shark

Scymnus brasiliensis Cuvier, *in* Quoy & Gaimard, 1824: 198. Holotype: MNHN A-7787, 172 mm TL female. Type locality: off Brazil, western Atlantic.

Local synonymy: *Isistius brasiliensis*: Jahn & Haedrich, 1987: 297; Compagno, 1999: 115; Compagno *et al*., 2005: 127, fig., pl. 14; Ebert, 2013: 115, fig. 154; Ebert *et al*., 2013a: 170, fig., pl. 17; Ebert & Mostada, 2013: 49, fig.; NPOA, 2013: 38; Ebert & Dando, 2014: 85, fig.; da Silva *et al*., 2015: 246; Ebert, 2015: 110, fig. 128; Ebert

& Mostada, 2015: 42, fig.; Ebert & van Hees, 2015: 144; Compagno, 2016: 1211; Weigmann, 2016: 892; de Figueiredo Petean & de Carvalho, 2018: 13, fig. 11.

South Africa voucher material: ZMH 108396, ZMH 108492, ZMH 108493.

South Africa distribution: Known from a few scattered records off the South African coast from WC to KZN (Jahn & Haedrich, 1987).

Remarks: This species is poorly documented in South African waters and any specimens collected should be retained. A deep-sea Stingray (*Plesiobatis davisei*) was once caught off northern KZN with bite wounds from this species (Ebert *et al*., 2002; Ebert, 2013, 2014).

Conservation status: LC (2018).

***Isistius plutodus* Garrick & Springer, 1964**

Largetooth Cookiecutter Shark

Isistius plutodus Garrick & Springer, 1964: 679, figs. 1–2. Holotype (unique): USNM 188386. Type locality: Off coast of Alabama, U.S.A., 28°58'N, 88°18'W.

Local synonymy: *Isistius plutodus*: Jahn & Haedrich, 1987: 298, fig. 47; Ebert *et al*., 2013a: 171, fig., pl. 17: Ebert & van Hees, 2015: 144; Compagno, 2016: 1212; Weigmann, 2016: 892; de Figueiredo Petean & de Carvalho, 2018: 36, fig. 23.

South Africa voucher material: None.

South Africa distribution: Unconfirmed from South African waters, but its occurrence would not be unexpected.

Remarks: Jahn & Haedrich (1987) reported this species from off South Africa, but no specimens are available to confirm its presence in these waters.

Conservation status: LC (2015).

Order Squatiniformes

Family Squatinidae Bonaparte, 1838

Angel Sharks

Genus *Squatina* Duméril, 1805

Angel Sharks

Squatina Duméril, 1805: 102, 342. Type species: *Squalus squatina* Linneaus 1758, by subsequent designation.

***Squatina africana* Regan, 1908a**

African Angelshark

Squatina africana Regan, 1908a: 248, pl. 38. Holotype: BMNH 1906.11.19.21, male, 800 mm TL. Type locality: Durban Bay, KwaZulu-Natal, South Africa, southwestern Indian Ocean.

Local synonymy: *Squatina africana*: Regan, 1908a: 248, pl. 38; Gilchrist & Thompson, 1916: 284; Barnard, 1925: 54, fig. 5, pl. 3; Smith, 1949a: 61, fig. 55, pl. 3; Smith, 1965: 6, fig. 55, pl. 3; Bass *et al*., 1975d: 21; Compagno, 1984a: 141, fig.; Bass, 1986: 107, fig. 21.2; Compagno *et al*., 1989: 36, pl.; Compagno, 1999: 115; Compagno *et al*., 2005: 138, fig., pl. 17; Ebert, 2013: 131, fig. 169; Ebert *et al*., 2013a: 190, fig., pl. 20; Ebert & Mostada, 2013: 10, fig.; NPOA, 2013: 51; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 145; Weigmann, 2016: 905.

South Africa voucher material: Holotype: BMNH 1906.11.19.21. Non-types: SAIAB 6221, SAIAB 6222, SAIAB 6223, SAIAB 6224, SAIAB 7082, SAIAB 8532, SAIAB 11458, SAIAB 26960, SAIAB 27583, SAIAB 48523, SAIAB 53275, SAIAB 99189, SAIAB 188976, SAIAB 188977.

South Africa distribution: Mostly from Algoa Bay (EC) to northern KZN, but occasionally west to Mossel Bay and Knysna (WC).

Remarks: A common species off KZN, but it is uncommon to rare off Mozambique, Tanzania, and Madagascar. Records from off Somalia, Socotra Island (Yemen), and Mauritius (Fricke, 1999a) should be carefully examined to determine if this is the same or a different species. A single specimen landed at a fishing port in India (Ambily *et al.*, 2018) is likely to have originated in African waters given that fishing vessels fish widely in the Indian Ocean.

Conservation status: NT (2019).

Order Pristiophoriformes

Family Pristiophoridae Bleeker, 1859
Sawsharks

Genus *Pliotrema* Regan, 1906a
Sixgill Sawsharks
Pliotrema Regan, 1906a: 1. Type species: *Pliotrema warreni* Regan, 1906, by original description.

Pliotrema warreni Regan, 1906a
Sixgill Sawshark
Pliotrema warreni Regan, 1906a: 1, pl. 1. Syntypes: BMNH 1899.2.10.4 (skeleton in spirit), ~704 mm TL; BMNH 1905.6.8.9 (1). Type locality: False Bay, Cape of Good Hope, Western Cape Province, South Africa and off the coast of KwaZulu-Natal, South Africa.

Local synonymy: *Pliotrema warreni*: Regan, 1906a: 1, pl. 1; Thompson, 1914: 152; Gilchrist, 1922b: 50; Barnard, 1925: 53, fig. 3, pl. 3; Barnard, 1947: 20, fig. 6, pl. 3; Smith, 1949a: 62, pl. 3; Smith, 1965: 62, pl. 3; Bass *et al*., 1975d: 20, fig. 11, pl. 8; Compagno, 1984a: 132, fig.; Bass & Heemstra, 1986: 106, fig. 20.1; Compagno *et al*., 1989: 36, pl.; Compagno *et al*., 1991: 73; Compagno, 1999: 115; Ebert & Cailliet, 2011: 501; Ebert & Wilms, 2013: 86; Ebert, 2013: 153, fig. 162; Ebert *et al*., 2013a: 179, fig., pl. 18; Ebert & Mostada, 2013: 12, fig.; NPOA, 2013: 51; da Silva *et al*., 2015: 247; Ebert, 2015: 116, fig. 130; Ebert & Mostada, 2015: 10, fig.; Ebert & van Hees, 2015: 145; Weigmann, 2016: 907; Weigmann *et al*., 2020: 1, figs. 26–27. ?*Pristiophorus cirratus* (*non* Latham): Thompson, 1914: 153. A single record of this species is based on a specimen from False Bay (WC) that was a misidentification by G.A. Boulenger, but later used by Regan as one of the two syntypes for *P. warreni* (see Barnard, 1925: 53; Smith, 1949a: 61; Smith, 1965: 61).

South Africa voucher material: Syntypes: BMNH 1899.2.10.4, BMNH 1905.6.8.9. Non-types: SAIAB 4125, SAIAB 6225, SAIAB 8056, SAIAB 12978, SAIAB 14602, SAIAB 18301, SAIAB 26447, SAIAB 26448, SAIAB 26449, SAIAB 27434, SAIAB 69152, SAIAB 88248, SAIAB 99181, SAIAB 99182, SAIAB 99183, SAIAB 186452, SAIAB 189132, SAIAB 208021.

South Africa distribution: Table Bay (WC) to the KZN border with Mozambique.

Remarks: The genus *Pliotrema* has been considered to be monotypic, but a recent revision has revealed two new species in the genus (Weigmann *et al.*, 2020); both new species do not occur off South Africa. The global distribution of *P. warreni* is now considered to range from central Namibia to southern Mozambique, with most of the population occurring on the Agulhas Bank (EC), South Africa.

Conservation status: LC (2020).

Order Orectolobiformes

Family Ginglymostomatidae Gill, 1862
Nurse Sharks

Genus *Nebrius* Rüppell, 1837
Tawny Nurse Sharks
Nebrius Rüppell, 1837: 62. Type species: *Nebrius concolor* Rüppell, 1837, by monotypy.

Nebrius ferrugineus (Lesson, 1831)
Tawny Nurse Shark
Scyllium ferrugineum Lesson, 1831: 95. Syntypes: location unknown. Type locality: Port Praslin, New Ireland, Bismarck Archipelago; and Offack Bay, Waigeo, Indonesia.

Local synonymy: *Nebrius doldi*: Smith, 1953: 512, pl. (original description, holotype not saved). *Nebrius concolor*: Bass *et al*., 1975c: 44, fig. 21, pl. 14; Bass, 1986: 65, fig. 7.3. *Nebrius ferrugineus*: Compagno, 1984a: 208, fig.; Compagno *et al*., 1989: 38, pl.; Compagno, 1999: 118; Compagno, 2001: 196, fig. 161; Compagno *et al*., 2005:

172, fig., pl. 26; Ebert *et al*., 2013a: 271, fig., pl. 35; Ebert & van Hees, 2015: 145; Weigmann, 2016: 843.

South Africa voucher material: None.

South Africa distribution: Occurs only marginally in South Africa in northern KZN.

Remarks: Bass *et al*. (1975c: plate 14) described and illustrated the jaws of a 183 cm TL specimen collected in northern KZN. The species appears to be more common north of South Africa off the East African coast and around WIO islands.

Conservation status: VU (2003).

Family Stegostomatidae Gill, 1862

Zebra Sharks

Genus *Stegostoma* Müller & Henle, 1837a

Zebra Sharks

Stegostoma Müller & Henle, 1837a: 112. Type species: *Squalus fasciatus* Bloch & Schneider, 1801, by original designation, equals *Squalus fasciatus* Hermann, 1783.

***Stegostoma tigrinum* (Forster, 1781)**

Zebra Shark

Squalus tigrinus Forster, 1781: 24, fig. 2, pl. 13. Types: No types known. Type locality: Description and illustration based on juvenile individuals from Sri Lanka, Indian Ocean.

Local synonymy: *Stegostoma tigrinum*: Barnard, 1937: 45; Dahl *et al*., 2019: 524. *Stegostoma fasciatum*: Smith, 1949a: 51, fig. 30, pl. 2; Smith, 1965: 51, fig. 30, pl. 2; Smith, 1975: 13; Compagno, 1984a: 200, fig.; Bass, 1986: 65, fig. 7.4, pl. 4; Compagno *et al*., 1989: 38, pl.; Compagno, 1999: 118; Compagno, 2001: 186, fig. 156; Heemstra & Heemstra, 2004: 54; Ebert *et al*., 2013a: 268, fig., pl. 35; Ebert & van Hees, 2015: 145; Weigmann, 2016: 848. *Stegostoma varium*: Bass *et al*., 1975c: 46, fig. 22.

South Africa voucher material: SAIAB 6203, SAIAB 6204, SAIAB 7127, SAIAB 7128.

South Africa distribution: Cape St. Francis (EC) to KZN, but rare south of KZN.

Remarks: The species *S. tigrinum* has a complicated taxonomic history with at least 15 different scientific names having been ascribed to it. Until recently, the scientific name most widely accepted for this species was *S. fasciatum* (Hermann, 1783) based on *Squalus varius* Seba, 1759. However, a recent review on the taxonomic history concluded that *S. tigrinus* (Forster, 1781) is the proper valid name for this species (Dahl *et al*., 2019).

Conservation status: EN (2019).

Family Rhincodontidae Müller & Henle, 1839

Whale Sharks

Genus *Rhincodon* Smith, 1829

Whale Sharks

Rhincodon Smith, 1829: 443. Type species: *Rhiniodon typus* Smith, 1828, by monotypy, as interpreted by the ICZN, 1984 (Opinion 1278). Misspelled *Rineodon, Rhiniodon, Rhinodon*, and *Rhinecodon*. Misspelled *Rhinodon* by Müller & Henle, 1839: 77. *Rhiniodon* Smith, 1828: 2 on Official Index for purposes of priority (Opinion 1278). Appeared first as *Rhiniodon* Smith, 1828, but not accepted by ICZN.

***Rhincodon typus* Smith, 1928**

Whale Shark

Rhiniodon typus Smith, 1828: 2. Holotype: MNHN 9855 (stuffed and mounted). Type locality: Table Bay, Western Cape Province, South Africa.

Local synonymy: *Rhincodon typus*: Smith, 1828: 2; Smith, 1829: 443; Smith, 1949a: 50, fig. 29; Smith, 1965: 50, fig. 29; Compagno, 1984a: 210, fig.; Bass, 1986: 66, fig. 8.1, pl. 1; Compagno *et al*., 1989: 38, pl.; Compagno, 1999: 119; Compagno, 2001: 203; Heemstra & Heemstra, 2004: 55; Compagno *et al*., 2005: 174, fig., pl. 28; Ebert *et al*., 2013a: 272, fig., pl. 26; Ebert & Dando, 2014: 69, fig.; Ebert & van Hees, 2015: 145; Compagno,

2016: 1253; Weigmann, 2016: 848. *Rhinodon typicus*: Muller & Henle, 1841: 77; Smith, 1849: pl. 26; Bass *et al*., 1975c: 50, fig. 24; Smith, 1975: 12. *Rhineodon typicus*: Gray, 1851: 67. *Rhinodon typicus*: Thompson, 1914: 149; Barnard, 1925: 37, pl. 2. *Rhineodon typus*: Barnard, 1935: 647, figs. 2–3, pls. 23–25.

South Africa voucher material: SAIAB 6279 [former ORI 6279], SAIAB 51225, SAIAB 204421.

South Africa distribution: Table Bay (WC) to KZN border with Mozambique.

Remarks: Although considered a mostly tropical to subtropical species, *R. typus* is now known to make excursions into temperate waters even as far as Table Bay (WC) on the west coast where the holotype of this species was captured.

Conservation status: EN (2016).

Order Lamniformes

Family Mitsukurinidae Jordan, 1898

Goblin Sharks

Genus *Mitsukurina* Jordan, 1898

Goblin Sharks

Mitsukurina Jordan, 1898: 199. Type species: *Mitsukurina owstoni* Jordan, 1898, by monotypy.

Mitsukurina owstoni Jordan, 1898

Goblin shark

Mitsukurina owstoni Jordan, 1898: 200, pls. 11–12. Holotype: ZMUT, uncat. [lost].

Local synonymy: *Scapanorhynchus owstoni*: Bass *et al*., 1975c: 18, fig. 8, pl. 7; Piotrovskiy & Prut'ko, 1980: 124. *Mitsukurina owstoni*: Compagno, 1984a: 223, fig.; Bass & Compagno, 1986: 103, fig. 17.1; Compagno *et al*., 1989: 40, pl.; Compagno *et al*., 1991: 73; Compagno, 1999: 118; Compagno, 2001: 69; Compagno *et al*., 2005: 178, fig., pl. 27; Ebert, 2013: 149, fig. 184; Ebert *et al*., 2013a: 216, fig., pl. 25; Ebert & Mostada, 2013: 13, fig.; Ebert, 2015: 126, fig. 138; Ebert & Mostada, 2015: 11, fig.; Ebert & van Hees, 2015: 145; Compagno, 2016: 1227; Weigmann, 2016: 851.

South Africa voucher material: SAIAB 6206 [former ORI 2348]. At least four other specimens caught off the east coast (EC and KZN) were either discarded or lost in transit.

South African distribution: West of Cape Town (WC) to off Port Shepstone (KZN).

Remarks: South African records include a single specimen west of Cape Town (WC), two from off the Transkei coast (EC), and two from off Port Shepstone, KZN. The species is likely wide-ranging in deep water, along the upper continental slope around South Africa. A couple additional specimens were caught along the Madagascar Ridge east of South Africa.

Conservation status: LC (2018).

Family Carchariidae Müller & Henle, 1838a

Sand Tiger Sharks

Genus *Carcharias* Rafinesque, 1810a

Sand Tiger Sharks

Carcharias Rafinesque, 1810a: 10. Type species: *Carcharias taurus* Rafinesque, 1810a, by monotypy.

Carcharias taurus Rafinesque, 1810a

Ragged-tooth Shark

Carcharias taurus Rafinesque, 1810a: 10, pl. 14 (fig. 1). Holotype unknown. Type locality: Sicily, Mediterranean Sea.

Local synonymy: *Odontaspsis taurus*: Müller & Henle, 1841: 73, pl. 30; Bleeker, 1860: 58. *Odontapsis americanus*: Bleeker, 1860b: 58; Günther, 1870: 392; Gilchrist, 1902: 164; Thompson, 1914: 146. *Carcharias taurus*:

Barnard, 1925: 36, fig. 2, pl. 2; von Bonde, 1934: 15; Smith, 1949a: 48, fig. 25, pl. 1 [in part]; D'Aubrey, 1964a: 12, pl. 1; Compagno *et al*., 1989: 40, pl.; Compagno, 1999: 118; Compagno, 2001: 58; Heemstra & Heemstra, 2004: 73; Compagno *et al*., 2005: 175, fig., pl. 27; Ebert *et al*., 2013a: 217, fig., pl. 25; Mann, 2013: 134; NPOA, 2013: 50; Ebert & van Hees, 2015: 145; Compagno, 2016: 1223; Weigmann, 2016: 852. *Carcharias tricuspidatus*: Smith, 1949a: 48, fig. 24 [in part]. *Odontaspis taurus*: Bass *et al*., 1975c: 12, fig. 7. *Eugomphodus taurus*: Compagno, 1984a: 216, fig.; Bass & Compagno, 1986: 104, fig. 19.1, pl. 2.

South Africa voucher material: SAIAB 6266 [former ORI 2858], SAIAB 6927 [former ORI 7], SAIAB 6928 [former ORI 9], SAIAB 6929 [former ORI 95], SAIAB 6930 [former ORI 98], SAIAB 6931 [former ORI 201], SAIAB 6932 [former ORI 224], SAIAB 6933 [former ORI 353], SAIAB 6934 [former ORI 388], SAIAB 6935 [former ORI 428], SAIAB 6936 [former ORI 463], SAIAB 6937 [former ORI 373], SAIAB 6938 [former ORI 1151], SAIAB 6939 [former ORI 2094], SAIAB 12823, SAIAB 27025, SAIAB 27435, SAIAB 46922, SAIAB 46925, SAIAB 49159, SAIAB 49160, SAIAB 51208, SAIAB 63806, SAIAB 75608, SAIAB 75609, SAIAB 75610, SAIAB 98914.

South African distribution: Occurs along the entire coast but appears to be more common along the EC and KZN coasts.

Remarks: Some literature accounts cite plate 44 in Rafinesque's original description as an illustration of this species, however it is plate 14 that illustrates the species. Females migrate seasonally between mating (central KZN) and pupping grounds (northern KZN). Juvenile sharks display site fidelity to summer nursery areas and the species is possibly philopatric (Dicken *et al*., 2007). Three adults tagged by KZN Sharks Board and recaptured after more than 20 years at liberty suggest long lifespan (S.P. Wintner, unpubl. data). A popular shark frequently displayed in public aquaria as well as in diving ecotourism. Current South African legislation prohibits both commercial and recreational catch (NPOA, 2013).

Conservation status: VU (2009).

Family Odontaspididae Müller & Henle, 1839

Deep-sea Sand Tiger Sharks

Genus *Odontaspis* Agassiz, 1838

Deep-sea Sand Tiger Sharks

Odontaspis Agassiz, 1838: 86, 87. Type confirmed by ICZN, on Official List (Opinion 723). Type species: *Carcharias ferox* Risso, 1827, by monotypy, equals *Squalus ferox* Risso, 1810. This genus takes precedence over *Carcharias* Rafinesque, 1810a when the two were considered synonyms, by special endorsement in Opinion 1469.3 (ICZN, 1987).

***Odontaspis ferox* (Risso, 1810)**

Smalltooth Sand Tiger Shark

Squalus ferox Risso, 1810: 38. Holotype unknown; type locality off Nice, France, in the Mediterranean Sea.

Local synonymy: *Odontaspis herbsti:* Bass *et al*., 1975c: 10, fig. 6. *Odontaspis ferox:* Smith, 1975: 12; Compagno, 1984a: 219, fig.; Bass, 1986: 98, fig. 14.1, pl. 1; Compagno *et al*., 1989: 40, pl.; Compagno, 1999: 118; Compagno, 2001: 64, fig. 55; Heemstra & Heemstra, 2004: 74; Compagno *et al*., 2005: 176, fig., pl. 27; Ebert, 2013: 146, fig. 182; Ebert *et al*., 2013a: 218, fig., pl. 25; Ebert & Mostada, 2013: 13, fig.; Ebert & Dando, 2014: 63, fig.; Ebert & van Hees, 2015: 145; Compagno, 2016: 1125; Weigmann, 2016: 852.

South Africa voucher material: SAIAB 6234 [former ORI 2341], SAIAB 6265 [former ORI 2396], SAIAB 6926.

South African distribution: KZN coast to at least Port Shepstone, and possibly off the Transkei coast (EC).

Remarks: Occasionally taken off the KZN coast, a few dozen specimens were landed during a short-lived deep-sea fishery off Port Shepstone that also landed *Dalatias licha* and *Mitsukurina owstoni* among other deep-sea species (D.A. Ebert & P.D. Cowley, unpubl. data). The species is known to occasionally venture into shallow water, but to date no known records have been caught by the KZN Sharks Board. The first confirmed records of this species were from off Durban in October 1966, February 1968, and April 1972.

Conservation status: VU (2016).

Family Megachasmidae Taylor, Compagno, & Struhsaker, 1983
Megamouth Sharks

Genus *Megachasma* Taylor, Compagno, & Struhsaker, 1983
Megamouth Shark
Megachasma Taylor, Compagno, & Struhsaker, 1983: 87, 96, figs. 1–15. Type species: *Megachasma pelagios* Taylor, Compagno, & Struhsaker, 1983 by original designation (also monotypic).

***Megachasma pelagios* Taylor, Compagno, & Struhsaker, 1983**
Megamouth Shark
Megachasma pelagios Taylor, Compagno, & Struhsaker, 1983: 87, 96, figs. 1–15. Holotype: BPBM 22730, off Oahu, Hawaiian Islands, 21°51'N, 157°46'W.
Local synonymy: *Megachasma pelagios*: Smale *et al*., 2002: 350, fig. 1; Compagno *et al*., 2005: 178, fig., pl. 28; Ebert *et al*., 2013a: 219, fig., pl. 26; NPOA, 2013: 32; Ebert & Dando, 2014: 71, fig.; Ebert & van Hees, 2015: 145; Weigmann, 2016: 851.
South Africa voucher material: SAM 36030.
South African distribution: Known from a single specimen that washed ashore at Nature's Valley near Plettenberg Bay (EC).
Remarks: The South African record is the western most record in the Indian Ocean.
Conservation status: LC (2019).

Family Pseudocarchariidae Compagno, 1973
Crocodile Sharks

Genus *Pseudocarcharias* Cadenat, 1963
Crocodile Sharks
Pseudocarcharias Cadenat, 1963: 526 (proposed as a subgenus of *Carcharias* Rafinesque, 1810a, but used throughout in generic form). Type species: *Pseudocarcharias pelagicus* Cadenat, 1963, by original designation, a junior synonym of *Carcharias kamoharai* Matsubara, 1936.

***Pseudocarcharias kamoharai* (Matsubara, 1936)**
Crocodile Shark
Pseudocarcharias kamoharai Matsubara, 1936: 380. Holotype: FAKU 1823; apparently lost according to Compagno (2001). Type locality: Koti, Japan.
Local synonymy: *Carcharias kamoharai*: D'Aubrey, 1964a: 14, pl. 2; D'Aubrey, 1964b: 9, figs. 1–4. *Odontaspis kamoharai*: Bass *et al*., 1975c: 8, fig. 5. *Pseudocarcharias kamoharai*: Compagno, 1984a: 225, fig.; Bass, 1986: 103, fig. 18.1; Compagno *et al*., 1989: 40, pl.; Compagno, 1999: 118; Compagno, 2001: 72, fig. 58; Compagno *et al*., 2005: 177, fig., pl. 27; Ebert, 2013: 152, fig. 186; Ebert *et al*., 2013a: 214, fig., pl. 25; Ebert & Mostada, 2013: 14, fig.; NPOA, 2013: 50; Ebert & Dando, 2014: 67, fig.; da Silva *et al*., 2015: 247; Ebert, 2015: 129, fig. 140; Ebert & Mostada, 2015: 11, fig.; Ebert & van Hees, 2015: 145; Compagno, 2016: 1229, Weigmann, 2016: 853.
South Africa voucher material: SAIAB 6181 [former ORI 528], SAIAB 6205 [former ORI 1745].
South African distribution: Known from a few specimens in the WC between Saldanha Bay and Cape Point, including a couple that washed up on beaches. Likely occurs along the entire coast offshore.
Remarks: D'Aubrey (1964b) compared a specimen captured off Cape Town to all other known synonyms for this species, concluding that only a single species exists worldwide. At least two specimens were found washed up on beaches or swimming feebly in the surf in False Bay and near Cape Point and another was caught off Saldanha Bay on a longline (WC). The species is very common in the Mozambique Channel and so it is likely to be found along the entire coast of South Africa.
Conservation status: LC (2019).

Family Alopiidae Bonaparte, 1838
Thresher Sharks

Genus *Alopias* Rafinesque, 1810a
Thresher Sharks
Alopias Rafinesque, 1810a: 13. Type species: *Alopias macrourus* Rafinesque, 1810a, by monotypy, a junior synonym of *Squalus vulpinus* Bonnaterre, 1788: 9.

***Alopias pelagicus* Nakamura, 1935**
Pelagic Thresher Shark
Alopias pelagicus Nakamura, 1935: 2, 3, pl. 1, fig. 2. Syntypes: location unknown. Type locality: Su-Ao fish market, Taiwan.
Local synonymy: *Alopias pelagicus*: D'Aubrey, 1964a: 18, pl. 5 (Natal = *A. vulpinnus*); Bass *et al*., 1975c: 34, fig. 17; Compagno, 1984a: 229, fig.; Bass, 1986: 102, fig. 16.1; Cliff & Wilson, 1986: 13; Compagno *et al*., 1989: 42, pl.; Compagno, 1999: 118; Heemstra & Heemstra, 2004: 72; Compagno *et al*., 2005: 179, fig., pl. 29; Ebert *et al*., 2013a: 226, fig., pl. 27; NPOA, 2013: 49; Ebert & Dando, 2014: 57, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 145; Weigmann, 2016: 848.
South Africa voucher material: SAIAB 6247 [former ORI 2789], SAIAB 27436.
South African distribution: KZN coast to the border with Mozambique.
Remarks: Often confused with *A. vulpinus*. Caught commercially in various fisheries (NPOA, 2013).
Conservation status: EN (2019).

***Alopias superciliosus* (Lowe, 1839)**
Bigeye Thresher Shark
Alopecias superciliosus Lowe, 1841: 39. Also Lowe, 1849: 18 (sometimes dated 1839). Holotype: lost. Type locality: Madeira, Eastern Atlantic.
Local synonymy: *Alopias superciliosus:* Bass *et al*., 1975c: 38, fig. 19; Gruber & Compagno, 1981: 617; Compagno, 1984a: 231, fig.; Bass, 1986: 102, fig. 16.2; Cliff & Wilson, 1986: 13; Compagno *et al.,* 1989: 42, pl.; Compagno, 1999: 118; Heemstra & Heemstra, 2004: 73; Compagno *et al*., 2005: 180, fig., pl. 29; Ebert, 2013: 155, fig. 188; Ebert *et al*., 2013a: 226, fig., pl. 27; Ebert & Mostada, 2013: 14, fig.; NPOA, 2013: 50; Ebert & Dando, 2014: 59, fig.; da Silva *et al*., 2015: 246; Ebert, 2015: 132, fig. 142; Ebert & Mostada, 2015: 12, fig.; Ebert & van Hees, 2015: 145; Compagno, 2016: 1235; Weigmann, 2016: 849.
South Africa voucher material: SAIAB 6248 [former ORI 2921], SAIAB 8654, SAM 25543.
South African distribution: Cape Peninsula (WC) to the east coast (KZN).
Remarks: Readily identifiable from other thresher sharks by the arrangement of the eyes which give this species dorsal binocular vision. Caught commercially in various fisheries (NPOA, 2013).
Conservation status: VU (2019).

***Alopias vulpinus* (Bonnaterre, 1788)**
Thresher Shark
Squalus vulpinus Bonnaterre, 1788: 9. Types unknown according to Compagno (2001), type locality: Mediterranean Sea.
Local synonymy: *Alopias vulpes*: Bleeker, 1860b: 58; Thompson, 1914: 147; Barnard, 1925: 34; Barnard, 1947: 14, fig. 3, pl. 2. *Alopecias vulpes*: Günther, 1870: 393 (Cape seas); Gilchrist, 1902: 164. *Alopias vulpinus*: Smith, 1949a: 47, fig. 22; Smith, 1965: 47, fig. 22; Bass *et al*., 1975c: 35, fig. 18, pl. 11; Compagno, 1984a: 232, fig.; Bass, 1986: 102, fig. 16.3; Cliff & Wilson, 1986: 13; Compagno *et al*., 1989: 42, pl.; Compagno *et al*., 1991: 44; Compagno, 1999: 118; Heemstra & Heemstra, 2004: 72; Compagno *et al*., 2005: 180, fig., pl. 29; Ebert *et al*., 2013a: 223, fig., pl. 27; NPOA, 2013: 50; Ebert & Dando, 2014: 61, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 145; Compagno, 2016: 1236; Weigmann, 2016: 849. *Alopias pelagicus*: D'Aubrey, 1964a: 18, pl. 5 (east coast of South Africa).
South Africa voucher material: SAIAB 8654, SAIAB 26219, SAIAB 27024, SAIAB 75572, SAIAB 75573, SAIAB 99326.

South African distribution: NC to KZN; less common on the east coast.

Remarks: The most common of the three thresher species in South Africa, it is caught commercially in various fisheries (NPOA, 2013) and by anglers in the WC.

Conservation status: VU (2019).

Family Cetorhinidae Gill, 1862

Basking Sharks

Genus *Cetorhinus* Blainville, 1816

Basking Shark

Cetorhinus Blainville, 1816: 121. Type species: not designated; Blainville included the species "*Gunneri*; *Peregrinus*; *Shavianus*; *Homianus*?" in *Cetorhinus* without further comment. Gill (1862) designated *Squalus maximus* "Linnaeus" (= Gmelin, 1789) as type of *Cetorhinus*, but this was not an included species. Jordan & Gilbert (1883) designated "*Cetorhinus gunnerianus* Blainv. = *S. maximus* L." (a junior synonym of *Squalus maximus* Gunnerus, 1765) as type of *Cetorhinus*, which may be the earliest valid type designation.

***Cetorhinus maximus* (Gunnerus, 1765)**

Basking Shark

Squalus maximus Gunnerus, 1765: 33, pl. 2. No known types. Type locality: Trondheim, Norway.

Local synonymy: *Cetorhinus maximus:* Barnard, 1925: 34, fig. 1, 1a, pl. 2; Barnard 1937: 43, fig. 1, pls 6, 7; Bass et *al.*, 1975c: 31, fig. 16; Compagno, 1984a: 234, fig.; Bass, 1986: 101, fig. 15.1, pl. 2; Compagno *et al*., 1989: 44, pl.; Compagno, 1999: 118; Compagno, 2001: 91; Compagno *et al*., 2005: 181, fig., pl. 28; Ebert, 2013: 158, fig. 190; Ebert *et al*., 2013a: 222, fig., pl. 26; NPOA: 35; Ebert & Dando, 2014: 73, fig.; Ebert, 2015: 135, fig. 144; Ebert & Mostada, 2015: 12, fig.; Ebert & van Hees, 2015: 145; Compagno, 2016: 1238; Weigmann, 2016: 849. *Halsydrus maximus* Smith, 1949a: 47, fig. 23; Smith, 1965: 47, fig. 23.

South Africa voucher material: Uncatalogued specimen at SAM.

South African distribution: The Orange River (NC) to Salt Rock, southern KZN.

Remarks: Occasionally observed in the western Cape, usually between Table Bay and Cape Agulhas, one was once caught in the surf off Macassar Beach, False Bay. A small juvenile measuring 260 cm TL was once captured in the KZN Sharks Board bather protection gear at Salt Rock (KZN).

Conservation status: EN (2019).

Family Lamnidae Müller & Henle, 1838a

Mackerel Sharks

Genus *Carcharodon* Smith *in* Müller & Henle, 1838a

Great White Sharks

Carcharodon Smith *in* Müller & Henle, 1838a: 37. Type species: *Squalus carcharias* Linnaeus, 1758, by subsequent monotypy through *Carcharias lamia* Rafinesque, 1810a.

***Carcharodon carcharias* (Linnaeus, 1758)**

Great White Shark

Squalus carcharias Linnaeus, 1758: 235. Holotype unknown, type locality: "Europa".

Local synonymy: *Carcharodon rondeletii*: Müller & Henle, 1839: 70 (original description including South Africa); Gray, 1851: 61; Bleeker, 1860b: 57; Günther, 1870: 392; Gilchrist, 1902: 164; Thompson, 1914: 145. *Carcharodon capensis*: Smith, 1849: no page no., pl. 4 (original description Cape Seas, South Africa); Bleeker, 1860b: 58. *Carcharodon carcharias*: Barnard, 1925: 33, fig. 7, pl. 1; Smith, 1949a: 49, pl. 1; Smith, 1951: 729, figs. 1–2; D'Aubrey, 1964a: 16, pl. 4; Smith, 1965: 49, pl. 1; Bass *et al*., 1975c: 22, fig. 10; Compagno, 1984a: 238, fig.; Bass, 1986: 98, fig. 14.1 pl. 1; Cliff & Wilson, 1986: 10; Compagno *et al.,* 1989: 44, pl.; Smale & Heemstra, 1997: 243, fig. 1; Compagno, 1999: 118; Compagno, 2001: 100, fig. 71; Heemstra & Heemstra,

2004: 70; Compagno *et al*., 2005: 181, fig., pl. 30; Ebert *et al.*, 2013a: 227, fig., pl. 28; Mann, 2013: 98; NPOA, 2013: 49; Ebert & Dando, 2014: 47, fig.; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 145; Compagno, 2016: 1243; Weigmann, 2016: 850.

South Africa voucher material: SAIAB 6253 [former ORI 1129], SAIAB 6641 [former ORI 214], SAIAB 6642 [former ORI 229], SAIAB 6643 [former ORI 416], SAIAB 6644 [former ORI 2041], SAIAB 12998, SAIAB 27198, SAIAB 44242, SAIAB 50000, SAIAB 51268, SAIAB 75569, SAIAB 75570, SAIAB 99331, SAIAB 201708.

South African distribution: Occurs along the entire South African coast, with regional, seasonal distribution centered in the southwestern Cape, but also known for transoceanic migrations.

Remarks: A protected species (since 1991) in South Africa due to historical persecution and highly valued jaws and teeth. This species is the focus of a considerable amount of research in South Africa, and also a cage-diving tourism industry. A specimen tagged in 2003 near Cape Town travelled to Australia and back in nine months. An albino specimen was once captured off Algoa Bay (EC).

Conservation status: VU (2019).

Genus *Isurus* Rafinesque, 1810a

Mako Sharks

Isurus Rafinesque, 1810a: 12, pl. 13, fig. 1. Type species: *Isurus oxyrinchus* Rafinesque, 1810a, by monotypy.

***Isurus oxyrinchus* Rafinesque, 1810a**

Shortfin Mako Shark

Isurus oxyrinchus Rafinesque, 1810a: 12, pl. 13, fig. 1. Also Rafinesque, 1810b: 45. Holotype unknown. Type locality: Sicily, Mediterranean Sea.

Local synonymy: *Lamna glauca*: Müller & Henle, 1839: 69, pl. 29; Günther, 1870: 391 (Cape seas); Gilchrist, 1902 164; Thompson, 1914: 145. *Isurus glaucus*: Müller & Henle, 1839: 69, pl. 29; Fowler, 1941: 104 (Cape of Good Hope); Barnard, 1947: 10, fig. 1, pl. 2; Smith, 1949a: 50, pl. 1; Smith, 1957d: 94, fig. 1; D'Aubrey, 1964a: 15, pl. 3. *Isurus glauca*: Barnard, 1925: 33 (Cape seas; not fig. 6, pl. 1, = *Lamna nasus*). *Isurus bideni*: Phillipps, 1932: 227, fig. 2 (original description, South Africa); Fowler, 1941: 104; Barnard, 1948: 342. *Isurus oxyrinchus*: Bigelow & Schroeder, 1948b: 124; Smith, 1957d: 94, fig. 1; Smith, 1958a: 134, fig. 2; Smith, 1965: 511, fig. 28a; Bass *et al*., 1975c: 27, figs. 13–14, pl. 2; Compagno, 1984a: 242, fig.; Bass, 1986: 99, fig. 14.2, pl. 1; Cliff & Wilson, 1986: 11; Compagno *et al.*, 1989: 44, pl.; Compagno *et al.*, 1991: 74; Compagno, 1999: 118; Heemstra & Heemstra, 2004: 71; Compagno *et al*., 2005: 182, fig., pl. 30; Ebert *et al*., 2013a: 230, fig., pl. 28; Foulis & Groeneveld, 2013: 100; Mann, 2013: 100; NPOA, 2013: 49; Ebert & Dando, 2014: 49, fig.; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 145; Compagno, 2016: 1245; Weigmann, 2016: 850. *Isurus tigris*: Smith, 1957d: 94, fig. 1. *Isurus tigris africanus*: Smith, 1957d: 96, fig. 1, pl. 1 (original description of subspecies); Smith, 1958a: 134. *Isurus africanus*: Smith, 1958a: 134; Smith, 1965: 565, pl. 108.

South Africa voucher material: SAIAB 426, SAIAB 6014 [former ORI 2418], SAIAB 6916 [former ORI 92], SAIAB 6917 [former ORI 97], SAIAB 6918 [former ORI 101], SAIAB 6919 [former ORI 272], SAIAB 6920 [former ORI 307], SAIAB 6921 [former ORI 329], SAIAB 6922 [former ORI 449], SAIAB 6923 [former ORI 240], SAIAB 12828, SAIAB 12999, SAIAB 25194, SAIAB 75571, SAIAB 200724, SAIAB 200726, SAIAB 200727, SAIAB 202983, SAIAB 203562.

South African distribution: Occurs along the entire coast from the Orange River (NC) to the KZN border with Mozambique.

Remarks: A common offshore, pelagic species in South African waters.

Conservation status: EN (2019).

***Isurus paucus* Guitart, 1966**

Longfin Mako Shark

Isurus paucus Guitart, 1966: 3, figs. 1, 2A, 3A, 3C. Syntypes: possibly in the Instituto de Biologia or Instituto de Oceanologia, Cuba, collected in the Caribbean near Cuba. No type known according to Compagno (2001). Type locality: unknown.

Local synonymy: (?) *Isurus paucus*: Compagno, 1999: 118; Compagno, 2001: 115, fig. 75; Heemstra & Heemstra,

2004: 71; Compagno *et al*., 2005: 183, fig., pl. 30; Ebert *et al*., 2013a: 231, fig., pl. 28; Ebert & Dando, 2014: 51, fig.; Ebert & van Hees, 2015: 145; Compagno, 2016: 1249.

South Africa voucher material: Jaws from the personal collection of a fisher from the south coast (WC) examined by D.A. Ebert and L.J.V. Compagno (unpubl. data) is the only material.

South African distribution: ? Cape Agulhas (WC).

Remarks: Although there are no confirmed records, this species is provisionally included as occurring in South African waters based on a set of jaws examined by D.A. Ebert and L.J.V. Compagno (unpubl. data) from a large mako shark caught off Cape Agulhas by a commercial fisher. A poorly known and uncommon species, it is frequently misidentified as *I. oxyrinchus*. This species is of little commercial value as the flesh is soft and of poor quality.

Conservation status: EN (2019).

Genus *Lamna* Cuvier, 1816

Porbeagle Sharks

Lamna Cuvier, 1816: 126. Type species: *Squalus cornubicus* Bloch & Schneider, 1801 by monotypy, equals *S. cornubicus* Gmelin, 1789: 1497, and a junior synonym of *S. nasus* Bonnaterre, 1788.

***Lamna nasus* (Bonnaterre, 1788)**

Porbeagle Shark

Squalus nasus Bonnaterre, 1788 (ex Pennant): 10, fig. 350, pl. 85. No known types. Based on the 'Porbeagle' of Pennant, 1769: 92. Type locality: Cornwall, England, northeastern Atlantic.

Local synonymy: *Lamna nasus*: Smith, 1949a: 49, pl. 1; Smith, 1949b: 367; Smith, 1965: 49, pl. 1; Bass *et al.*, 1975c: 21, fig. 9; Compagno, 1984a: 248, fig.; Bass, 1986: 100, fig. 14.4, pl. 1; Compagno *et al*., 1989: 44, pl.; Compagno, 1999: 118; Compagno, 2001: 121, fig. 79; Compagno *et al*., 2005: 184, fig., pl. 30; Ebert *et al*., 2013a: 232, fig., pl. 28; NPOA, 2013: 49; Ebert & Dando, 2014: 53, fig.; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 145; Compagno, 2016: 1249; Weigmann, 2016: 851.

South Africa voucher material: Bass *et al*. (1975c) commented on a young specimen of 125 cm TL in the SAM collection (no number) caught in False Bay, April 1928. Smith (1949b) recorded one from off Knysna, but without any details.

South African distribution: Southwest of Cape Town to possibly off Knysna (WC).

Remarks: Uncommon off the South African mainland, but common to the south and around Prince Edwards Islands where water temperatures are below 18°C.

Conservation status: VU (2019).

Order Carcharhiniformes

Family Pentanchidae Smith, 1912

Deep-sea Catsharks

Genus *Apristurus* Garman, 1913

Demon Catsharks

Apristurus Garman, 1913: 96. Type species: *Scyliorhinus indicus* Brauer, 1906. Type by original designation.

Remarks: The genus *Apristurus* has a complicated taxonomic history in South Africa, with two locally described species (*A. microps* and *A. saldanha*), but also may include another two or three unidentified species. These unidentified species along with additional material recently collected is presently being investigated to revise the southern Africa genus *Apristurus* (D.A. Ebert & J.A. Cordova, Moss Landing Marine Laboratories, unpubl. data).

***Apristurus* cf. *manis* Springer, 1979**

Ghost Catshark

Parmaturus (*Compagnoia*) *manis* Springer, 1979: 102, fig. 60. Holotype: MCZ 38299. Type locality: southwest of Nantucket, Massachusetts, U.S.A., 39°52'N, 70°50'W.

Local synonymy: *Apristurus manis*: Compagno, 1999: 119; Compagno *et al*., 2005: 195, fig., pl. 31; Ebert *et al*., 2006: 1056, fig. 3; Flammang *et al*., 2007: 311, fig. 3; Ebert, 2013: 169, fig. 218; Ebert *et al*., 2013a: 295, fig., pl. 36; Ebert, 2015: 144, fig. 157; Ebert & Mostada, 2015: 44, fig.; Ebert & van Hees, 2015: 147; Weigmann, 2016: 868.

South Africa voucher material: Four specimens, all uncatalogued at the SAM.

South African distribution: Off Cape Town (WC).

Remarks: The only records of this species from South Africa were caught during an experimental trawl survey in the late 1990s. One of us examined these specimens (D.A. Ebert, unpubl. data, Sept. 2003) and tentatively identified them as *A*. cf. *manis*. However, subsequent to this identification, Sasahara *et al*. (2008) described a new species *A. ampliceps* from Australia and New Zealand, which bears strong resemblance to the South African *A*. cf. *manis* specimens reported here. Additional specimens of a robust-bodied, *A. spongiceps*-group, *Apristurus* collected during a series of surveys in the southwestern Indian Ocean also appears to fit the description of *A. ampliceps*. A taxonomic revision of southern African *Apristurus* species is currently in progress, which may shed light on the taxonomic status of this group.

Conservation status: NE.

***Apristurus microps* (Gilchrist, 1922b)**

Smalleye Catshark

Scylliorhinus microps Gilchrist, 1922b: 46, fig. 1, pl. 7. Holotype: lost (additional material, possible syntype: 1, lost). Type locality: off Cape Town, Western Cape Province, South Africa, southeastern Atlantic, 33°45.8'S, 17°17.1'E, S.S. *Pickle* station 253, depth 1446 m.

Local synonymy: *Scylliorhinus microps*: Gilchrist, 1922b: 46, fig. 1, pl. 7; Barnard, 1925: 41. *Pentanchus microps*: Fowler, 1941: 61; Smith, 1949a: 54, fig. 41; Smith, 1965: 54, fig. 41. *Apristurus microps*: Bigelow & Schroeder, 1948b: 221; Bass *et al*., 1975a: 7; Springer, 1979: 23; Compagno, 1984b: 275, fig.; Bass, 1986: 88, fig. 11.1; Compagno, 1988a: 170; Compagno *et al*., 1989: 46, pl.; Compagno *et al*., 1991: 75; Ebert *et al*., 1996: 234; Compagno, 1999: 119; Compagno *et al*., 2005: 196, fig., pl. 31; Ebert *et al*., 2006: 1056, fig. 3c; Flammang *et al*., 2007: 308; Ebert, 2013: 169, fig. 218; Ebert *et al*., 2013a: 295, fig., pl. 36; Ebert & Mostada, 2013: 53, fig.; Ebert, 2015: 144, fig. 157; Ebert & Mostada, 2015: 44, fig.; Ebert & van Hees, 2015: 147; Weigmann, 2016: 868.

South Africa voucher material: SAIAB 26318, SAIAB 26319, SAIAB 26320, SAIAB 27439.

South African distribution: The Orange River (NC) to at least Cape Agulhas, and possibly to Algoa Bay (EC).

Remarks: *Apristurus microps* was described from South Africa, and is also known from the North Atlantic, but appears to have a disjunct population since there are no confirmed records of this species between the Orange River (NC), South Africa and European Atlantic waters between Scotland and Iceland.

Conservation status: LC (2019).

***Apristurus saldanha* (Barnard, 1925)**

Saldanha Catshark

Scylliorhinus saldanha Barnard, 1925: 44. Holotype: lost. Type locality: off Saldanha Bay, Western Cape Province, South Africa.

Local synonymy: *Scylliorhinus saldanha*: Barnard, 1925: 44. *Scyliorhinus* (*Apristurus*) *saldanha*: Norman, 1935: 36. *Pentanchus saldanha*: Fowler, 1941: 59. *Apristurus saldanha*: Bigelow & Schroeder, 1948b: 221; Bass *et al*., 1975a: 8, figs. 5, 20a; Springer, 1979: 29; Compagno, 1984b: 282, fig.; Bass, 1986: 89, fig. 11.2; Compagno, 1988a: 169; Compagno *et al*., 1989: 46, pl.; Compagno *et al*., 1991: 77; Ebert *et al*., 1996: 235; Compagno, 1999: 119; Compagno *et al*., 2005: 200, fig., pl. 31; Ebert *et al*., 2006: 1058, fig. 4c; Flammang *et al*., 2007: 308; Ebert, 2013: 168, fig. 210; Ebert *et al*., 2013a: 295, fig., pl. 36; Ebert & Mostada, 2013: 53, fig.; NPOA, 2013: 45; Kawauchi *et al*., 2014: 9; Ebert, 2015: 146, fig. 161; Ebert & Mostada, 2015: 43, fig.; Ebert & van Hees, 2015: 147; Compagno, 2016: 1264, fig.; Weigmann, 2016: 869. *Pentanchus microps*: Smith, 1949a: 54 (in part, *Scylliorhinus saldanha* in synonymy; Smith, 1965: 54 (in part).

South Africa voucher material: SAIAB 25464, SAIAB 25934, SAIAB 25935, SAIAB 27438, SAIAB 54997, SAIAB 61751, SAIAB 64133, SAIAB 190354.

South African distribution: Endemic. Cape Columbine (WC) to about Algoa Bay (EC). A possible record from southern Namibia requires confirmation.

Remarks: A very large *Apristurus* species, up to at least 88 cm TL, *A. saldanha* was briefly described without an illustration, and the holotype was subsequently lost.

Conservation status: LC (2019).

***Apristurus* sp.**

Black Wonder Catshark

Local synonymy: *Apristurus* sp.: Compagno *et al*., 1991: 77; Ebert *et al*., 1996: 235; Compagno, 1999: 119; Ebert *et al*., 2006: 1059.

South Africa voucher material: Uncatalogued specimens at SAIAB and SAM.

South African distribution: The Orange River (NC) to Cape Agulhas (WC).

Remarks: This species may be a juvenile *A. saldanha* or a distinctly different species. It is currently under investigation with other South African *Apristurus* species (D.A. Ebert, unpubl. data).

Conservation status: NE.

Genus *Galeus* Rafinesque, 1810a

Sawtail Catsharks

Galeus Rafinesque, 1810a: 13. Type species: *Galeus melastoma* Rafinesque, 1810a. Type by subsequent designation.

***Galeus polli* Cadenat, 1959**

African Sawtail Catshark

Galeus polli Cadenat, 1959: 396, figs. 1–4, 7–18. Syntypes: (17, plus young) MNHN 1959-0044; MNHN 1959-0045. Type locality: off Senegal, West Africa.

Local synonymy: *Galeus polli*: Compagno *et al*., 2005: 299, fig., pl. 37; Ebert *et al*., 2013a: 345, fig., pl. 45; Ebert, 2015: 148, fig. 163; Ebert & Mostada, 2015: 47, fig.; Ebert & van Hees, 2015: 147; Compagno, 2016: 1265, fig.; Weigmann, 2016: 875.

South Africa voucher material: Uncatalogued specimens at SAM from the Northern Cape Province, west coast of South Africa.

South African distribution: Known from a few specimens collected during research survey cruises south of the Orange River, off the NC, west coast of South Africa (Ebert, 2015).

Remarks: The species is most common from about central Namibia northwards, but is less common south of Lüderitz, Namibia, where it is replaced by *Holohalaelurus regani* and *Scyliorhinus capensis* (Compagno *et al*., 1991; Ebert, 2015).

Conservation status: LC (2004).

Genus *Halaelurus* Gill, 1862

Tiger Catsharks

Halaelurus Gill, 1862: 407. Type species: *Scyllium buergeri* Müller & Henle, 1838c. Type by original designation (also monotypic).

***Halaelurus lineatus* Bass, D'Aubrey, & Kistnasamy, 1975a**

Lined Catshark

Halaelurus lineatus Bass, D'Aubrey, & Kistnasamy, 1975a: 12, figs, 8, 20e. Holotype: SAIAB [formerly RUSI] 6148 [ex ORI 2935].

Local synonymy: *Halaelurus lineatus*: Bass *et al*., 1975a: 12, figs. 8, 20e; Springer, 1979: 79; Compagno, 1984b: 327, fig.; Bass, 1986: 90, fig. 11.5; Compagno, 1988a: 147; Compagno *et al*., 1989: 52, pl.; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 66; Compagno *et al*., 2005: 233, fig., pl. 39; Ebert *et al*., 2013a: 351, fig., pl. 47; NPOA, 2013: 45; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 876.

South Africa voucher material: Holotype: SAIAB [formerly RUSI] 6148 [ex ORI 2935]. Paratypes: SAIAB [formerly RUSI] 6161 [ex ORI 2614] (1, hatched from egg case), 6162 [ex ORI 2619] (1, hatched from egg case), 6147 [ex ORI 2936].

South African distribution: East London (EC) to the KZN border with Mozambique.
Remarks: A common coastal catshark frequently caught by shore anglers and by commercial offshore trawlers.
Conservation status: LC (2019).

***Halaelurus natalensis* (Regan, 1904)**
Tiger Catshark
Scyllium natalense Regan, 1904: 128. Syntypes: (2 specimens) BMNH 1904.6.28.29 (1). Type locality: KwaZulu-Natal, South Africa.
Local synonymy: *Scyllium natalense*: Regan, 1904: 128. *Scyliorhinus natalensis*: Regan, 1908a: 241; Regan, 1908b: 461; Fowler, 1936a: 361. *Scylliorhinus natalensis*: Gilchrist & Thompson, 1911: 55; Thompson, 1914: 138; Gilchrist & Thompson, 1916: 283; Gilchrist, 1921: 56; Gilchrist, 1922b: 44 (in part with *H. lineatus*?); von Bonde, 1923: 4 (in part with *H. lineatus*?); Barnard, 1925: 43; von Bonde, 1934: 15; Barnard, 1947: 16. *Halaelurus natalensis*: Garman, 1913: 84; Fowler, 1941: 45; Smith, 1949a: 54, pl. 2; Smith, 1965: 54, pl. 2; Springer & D'Aubrey, 1972: 3; Bass *et al*., 1975a: 14, figs. 9, 20f; Springer, 1979: 83, figs. 48–50; Compagno, 1984b: 330, fig.; Bass, 1986: 91, fig. 11.7, pl. 3; Compagno, 1988a: 147; Compagno *et al*., 1989: 52, pl.; Compagno *et al*., 1991: 78; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 66; Compagno *et al*., 2005: 233, fig., pl. 39; Ebert *et al*., 2013a: 352, fig., pl. 47; NPOA, 2013: 45; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 876.
South Africa voucher material: Syntypes: BMNH 1904.6.28.29 (2 specimens). Non-types: SAIAB 6154, SAIAB 6155, SAIAB 6156, SAIAB 6157, SAIAB 6158, SAIAB 6159, SAIAB 6363, SAIAB 6859, SAIAB 6860, SAIAB 6861, SAIAB 6862, SAIAB 6863, SAIAB 6864, SAIAB 6865, SAIAB 6866, SAIAB 6867, SAIAB 6868, SAIAB 6869, SAIAB 6870, SAIAB 6871, SAIAB 6872, SAIAB 6873, SAIAB 6874, SAIAB 6875, SAIAB 6876, SAIAB 6877, SAIAB 6878, SAIAB 6879, SAIAB 6880, SAIAB 6881, SAIAB 6882, SAIAB 6883, SAIAB 6884, SAIAB 6885, SAIAB 6886, SAIAB 6887, SAIAB 7559, SAIAB 7618, SAIAB 7619, SAIAB 7620, SAIAB 7621, SAIAB 7622, SAIAB 7623, SAIAB 7624, SAIAB 7834, SAIAB 8264.
South African distribution: Endemic. Cape Point (WC) to East London (EC), but may possibly extend to Saldanha Bay (WC) in the west and eastwards to KZN.
Remarks: The species is most common off the southern and eastern Cape coasts, but records for extreme locations on the west and east coasts require confirmation.
Conservation status: VU (2020).

Genus *Haploblepharus* Garman, 1913
Shysharks
Haploblepharus Garman, 1913: 101. Type species: *Squalus edwardsii* Schinz, 1822. Type by monotypy. Type species originally was given as *Scyllium edwardsii* Voigt 1832. The name *Squalus edwardsii* was attributed to Schinz, 1822 in Opinion 2056; the name *edwardsii* had been spelled *edwartsii* by Schinz, 1822, but *edwardsii* was ruled the correct spelling.

***Haploblepharus edwardsii* (Schinz, 1822)**
Puffadder Shyshark
Squalus edwardsii Schinz, 1822: 214 (in van Oijen, 2001). Neotype: SAM 36079. Type locality: Millers Point, False Bay, Western Cape Province, South Africa, 34°14'S, 18°28.6'E.
Local synonymy: *Squalus edwardsii*: Schinz, 1822: 214. *Scyllium edwardsii*: Müller & Henle, 1838c: 4, pl.; Gray, 1851: 28; Duméril, 1853: 79; Bleeker, 1860b: 57; Günther, 1870: 401; Gilchrist, 1902: 164; Lampe, 1914: 213. *Scyllium edwardsii*: Voigt, *in* Cuvier, 1832: 504 (in van Oijen, 2001). *Catulus edwardii*: Smith, 1837: 85. *Scyliorhinus edwardsii*: Regan, 1908b: 463. *Scylliorhinus edwardsi*: Thompson, 1914: 137; Barnard, 1925: 41. *Scylliorhinus edwardsii*: Gilchrist & Thompson, 1916: 283; Gilchrist, 1922a: 4. *Haploblepharus edwardsii*: Smith, 1950: 879, fig. 1; Smith, 1965: 512, fig. 39a; Bass *et al*., 1975a: 17, fig. 11a (in part, illustration is actually *H. kistnasamyi*); Springer, 1979: 88; Compagno, 1984b: 332, fig.; Bass, 1986: 91, (fig. 11.8 caption as *H. edwardsii* is actually *H. kistnassamyi*); Compagno, 1988a: 15; Compagno *et al*., 1989: 50, pl.; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 66; Compagno *et al*., 2005: 234, fig., pl. 40; Human & Compagno, 2006: 41; Human, 2007: 7, fig. 3; Ebert *et al*., 2013a: 354, fig., pl. 48; NPOA, 2013: 46; da Silva *et al*., 2015:

248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 876. (non) *Haploblepharus edwardsii*: Smith, 1950: 54, fig. 39 (= *H. fuscus*).

South Africa voucher material: Human (2007) provides an extensive list of specimens in the SAM.

South African distribution: Endemic. This species is confirmed from Langebaan Lagoon (WC) to Algoa Bay (EC) (Human, 2007), but is most common from False Bay to southeast of Cape Agulhas (WC). Records of this species from East London (EC) could be this species or more likely *H. kistnasamyi* (Human, 2007).

Remarks: This species was the most common *Haploblepharus* species between False Bay and Hermanus (WC) during the 1980s and early 1990s, but in recent years appears to have been replaced in this area by *H. pictus* due to cooling oceanographic conditions.

Conservation status: EN (2020).

***Haploblepharus fuscus* Smith, 1950**

Brown Shyshark

Haploblepharus fuscus Smith, 1950: 883, fig. 2. Holotype: SAIAB [formerly RUSI] 21. Type locality: off East London, Eastern Cape Province, South Africa, 33°00'S, 27°55'E.

Local synonymy: *Haploblepharus edwardsii*: Günther, 1870: 401 (in part); Smith, 1949a: 54, fig. 39 (= *H. fuscus*). *Haploblepharus fuscus*: Smith, 1950: 883, fig. 2; Smith, 1965: 54, fig. 39; Bass *et al*., 1975a: 19, fig. 12; Springer, 1979: 89; Compagno, 1984b: 334, fig.; Bass, 1986: 92, fig. 11.9, pl. 3; Compagno, 1988a: 151; Compagno *et al*., 1989: 50, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 235, fig., pl. 40; Human & Compagno, 2006: 41; Human, 2007: 22, fig. 7; Ebert *et al*., 2013a: 354, fig., pl. 48; NPOA, 2013: 46; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 876.

South Africa voucher material: Holotype: SAIAB [formerly RUSI] 21. Non-types: SAIAB [formerly ORI] 2477, SAIAB [formerly ORI] 2595, SAIAB [formerly RUSI] 3700, SAIAB [formerly RUSI] 3701, SAIAB 6079 [formerly ORI 2470], SAIAB 6081 [formerly ORI 2487), SAIAB 6082 [formerly ORI 2471], SAIAB [formerly RUSI] 7617, SAIAB [formerly RUSI] 10289, SAIAB [formerly RUSI] 12826, SAIAB [formerly RUSI] 13144, SAIAB [formerly RUSI] 14005, SAIAB [formerly RUSI] 19993, SAIAB [formerly RUSI] 25182, SAIAB [formerly RUSI] 41963, SAM 32523, SAM 32614. See Human (2007) for details.

South African distribution: Endemic. The species occurs from just west of Cape Agulhas (WC) to Hibberdene, southern KZN, although it is most common from Storms River to East London (EC). It is less common to the west between Cape Agulhas and Storms River, with one anomalous specimen recorded from Langebaan Lagoon (SAM 32614) on the west coast. East London (EC) appears to be the eastern limits for the species, although Bass *et al*. (1975) reported two specimens from southern KZN (ORI 2595). Similar to other *Haploblepharus* species, improved species-specific identification will help in determining the distributional limits of this South African endemic.

Remarks: Knysna (EC) is also frequently listed as a type location, but this second specimen, a possible 'paratype' according to Human (2007) appears to never have been catalogued despite a search of the SAIAB collection. Both Bass *et al*. (1975a) and Springer (1979) refer to the two specimens described by Smith (1950) but make no mention of a paratype. One of us (D.A. Ebert) along with L.J.V. Compagno also searched the J.L.B. Smith (= SAIAB) collection (ca. 1988–89) and could not locate this second specimen.

Conservation status: VU (2020).

***Haploblepharus kistnasamyi* Human & Compagno, 2006**

Eastern Shyshark

Haploblepharus kistnasamyi Human & Compagno, 2006: 44, fig. 2. Holotype: SAIAB 39835. Type locality: Landers Reef off Park Rynie, KwaZulu-Natal, South Africa, 30°19'S, 30°47'E.

Local synonymy: *Haploblepharus edwardsii*: Smith, 1949a: 54 (in part); Smith, 1950: 879 (in part); Bass *et al*., 1975a: 17, fig. 11a (in part); Compagno, 1984b: 332 (in part); Bass, 1986: 91, (fig. 11.8 caption as *H. edwardsii* is actually *H. kistnasamyi*); Compagno, 1988a: 151 (in part); Compagno *et al*., 1989: 50, pl. (in part). *Haploblepharus* sp. nov.: Compagno, 1999: 98, 119. *Haploblepharus* sp. A: Compagno, *et al.*, 2005: 236; Human *et al*., 2006: 389. *Haploblepharus kistnasamyi*: Human & Compagno, 2006: 44, fig. 2; Human, 2007: 29, figs. 10–12; Ebert *et al*., 2013a: 355, fig., pl. 48; Ebert & van Hees, 2015: 147; Weigmann, 2016: 876.

South Africa voucher material: Paratypes: SAIAB 6075 [formerly ORI 2424], SAIAB 6077 [formerly ORI 2574].

Non-types: SAIAB 14005, SAIAB 26156, SAIAB 26934, SAIAB 26937, SAIAB 26939, SAIAB 26964, SAIAB 26965, SAIAB 48494, SAIAB 48496, SAM 29884, SAM 32527, SAM 32553, SAM 32554. See Human (2006) for details.

South African distribution: Endemic. Mossel Bay (WC) to Zinkwazi north of Durban (KZN).

Remarks: The least known and perhaps rarest species of *Haploblepharus*, it is known from very few specimens and is rarely observed despite it being a coastal nearshore species usually found at less than 30 m depth. A further detailed morphological and genetic study is required to fully delineate and define this species from the other members of the genus.

Conservation status: VU (2019).

***Haploblepharus pictus* (Müller & Henle, 1838c)**

Dark Shyshark

Scyllium pictum Müller & Henle, 1838c: 4. Syntypes: BMNH (6 specimens dried, possibly lost?), ?NMW 78529 (2 specimens), RMNH 4161-4164 (2 dried). See van Oijen, 2001 for type information. Type locality: Cape of Good Hope, Western Cape Province.

Local synonymy: *Scyllium pictum*: Müller & Henle, 1838c: 4. *Scyllium edwardsii*: Günther, 1870: 401 (in part); Regan, 1908b: 463 (in part). *Haploblepharus edwardsii*: Garman, 1913: 102 (in part); Thompson, 1914: 137 (in part); Gilchrist & Thompson, 1916: 283 (in part); Fowler, 1941: 64 (in part); von Bonde, 1945a: 1 (in part); von Bonde, 1945b: 220 (in part); Smith, 1949a: 54 (in part); Smith, 1950: 879 (in part); Smith, 1965: 54 (in part). *Haploblepharus pictus*: Bass *et al*., 1975a: 21, fig. 13; Springer, 1979: 91; Compagno, 1984b: 335, fig.; Bass, 1986: 92, fig. 11.10; Compagno *et al*., 1989: 50, pl.; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 67; Human & Compagno, 2006: 41; Human, 2007: 14, fig. 5; Ebert *et al*., 2013a: 355, fig., pl. 48; NPOA, 2013: 46; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Compagno, 2016: 1266: Weigmann, 2016: 877.

South Africa voucher material: RMNH 4161-4164 (probable Syntypes). SAIAB [formerly RUSI] 4115, SAIAB [formerly RUSI] 4117, SAIAB [formerly RUSI] 6083 [previously ORI 6083], SAIAB [formerly RUSI] 6084 [previously ORI 2874], SAIAB [formerly RUSI] 6160 [previously ORI 2932], SAIAB [formerly RUSI] 39993, SAIAB [formerly RUSI] 44494, SAIAB [formerly RUSI] 48499, SAIAB [formerly RUSI] 48500, SAM 3225, SAM 10142, SAM 21941, SAM 22996, SAM 23296, SAM 23307, SAM 23578, SAM 23598, SAM 23811, SAM 24345, SAM 24545, SAM 26385, SAM 29303, SAM 29337, SAM 32526, SAM 32556, SAM 32617. See Human (2007) for details.

South African distribution: West coast (NC) from the Orange River to east of the Storms River mouth (EC).

Remarks: *Haploblepharus pictus* was synonymized or misidentified by most authors before Bass *et al*. (1975) resurrected it as a valid species. The species is most often misidentified with *H. edwardsii* where the two species overlap between False Bay and Hermanus (WC). A near endemic to South Africa, the northern range of this species is just north of Lüderitz, Namibia (Human, 2007).

Conservation status: LC (2019).

Genus *Holohalaelurus* Fowler, 1934a

Izak Catsharks

Holohalaelurus (subgenus of *Halaelurus*) Fowler, 1934a: 235. Type species: *Scyliorhinus regani* Gilchrist, 1922b. Type by original designation.

***Holohalaelurus favus* Human, 2006b**

Honeycomb Izak Catshark

Holohalaelurus favus Human, 2006b: 36, figs. 11–12. Holotype: SAIAB [RUSI] 6139. Type location: off Durban, KwaZulu-Natal, South Africa, about 29°51'S, 31°00'E, southwestern Indian Ocean.

Local synonymy: *Holohalaelurus regani*: Smith, 1949a: 60 (in part); Bass, 1973: 6 (in part); Bass *et al.*, 1975a: 25 (in part); Compagno, 1984b: 338, fig. (in part); Bass, 1986: 93 (in part); Compagno, 1988a: 152 (in part); Compagno *et al*., 1989: 54, pl. (in part); Compagno, 1999: 98, 119 (in part); Richardson *et al*., 2000: 553 (in part). *Holohalaelurus regani*: Compagno *et al.*, 2005: 237, fig. (northeastern subspecies). *Holohalaelurus favus*: Human, 2006b: 36, figs. 11–12; Human, 2010: 25; Ebert, 2013: 182, fig. 244; Ebert *et al*., 2013a: 358, fig., pl. 48; Ebert & Mostada, 2013: 62, fig.; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 877.

South Africa voucher material: Holotype: SAIAB [former RUSI] 6139. Paratype: SAIAB 6138.

South African distribution: From Durban to the KZN border with Mozambique.

Remarks: A near endemic with a very limited range of about five degrees latitude from about off Durban (KZN) to just northeast of Maputo, Mozambique (Human, 2006b). This species is of serious conservation concern since a single record from 2007 represents the only contemporary record despite its range being subject to surveys (Pollom *et al.*, 2020).

Conservation status: EN (2020).

***Holohalaelurus punctatus* (Gilchrist, 1914)**

Whitespotted Izak Catshark

Scylliorhinus punctatus Gilchrist, 1914: 129, fig. Neotype: SAIAB 6128 [formerly RUSI 6128; previously ORI 2529] designated by Human, 2006b: 6, fig. 2. Type locality: Red Cliff off Bazaruto, Mozambique.

Local synonymy: *Scylliorhinus punctatus*: Gilchrist, 1914: 129, fig.; Thompson, 1914: 138; Gilchrist, 1921: 44; Gilchrist, 1922b: 44; Barnard, 1925: 43; von Bonde, 1934: 15. *Scyliorhinus* (*Halaelurus*) *polystigma* Regan, 1921: 413 (original description); Norman, 1939: 10, fig. 2b. *Halaelurus* (*Holohalaelurus*) *punctatus*: Fowler, 1934a: 235; Fowler, 1941: 42. *Halaelurus punctatus*: Fowler, 1935: 361, fig. 1; Fowler, 1941: 42. *Scyliorhinus* (*Halaelurus*) *punctatus*: Norman, 1939: 10. *Holohalaelurus punctatus*: Smith, 1949a: 55, fig. 42, pl. 2; Smith, 1965: 55, fig. 42, pl. 2; Bass *et al*., 1975a: 23, fig. 14; Springer, 1979: 92, fig. 56; Compagno, 1984b: 337, fig.; Bass, 1986: 93, fig. 11.11, pl. 3; Compagno, 1988a: 156; Compagno *et al*., 1989: 54, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 237, fig., pl. 40; Human, 2006b: 6, fig. 2; Human, 2010: 25; Ebert, 2013: 183, fig. 246; Ebert *et al*., 2013a: 359, fig., pl. 48; Ebert & van Hees, 2015: 147; Weigmann, 2016: 877.

South Africa voucher material: BMNH 1921.3.1.1 (Holotype of *H. polystigma* from off Umvoti River, KZN). SAIAB 6134, SAIAB 6135, SAIAB 40829, SAIAB 188971, SAIAB 188972, SAIAB 188973, SAIAB 190082.

South African distribution: North of Durban to the KZN border with Mozambique. Outside South Africa, this regional endemic is known only from southern Mozambique and Madagascar.

Remarks: Human (2006b) highlighted three issues that contributed to the taxonomic confusion of this species. This includes the loss of the holotype and whether it was ever formally accessioned, the type locality, and the species-complex in the KZN and southern Mozambique region. The specimen and illustration depicted by Gilchrist (1914) would qualify as the holotype, and it is likely to have gone to the SAM, but may never have been catalogued. During that period there is no reference to a scyliorhinid shark collected by Gilchrist in the SAM catalogue (Human, 2006a). Although Gilchrist (1914) gives the type locality as Cape Point with no further details, Human (2006a) suggested that he was referring to Cape St. Lucia (KZN) rather that Cape Point (WC). This would make sense since despite thousands of survey trawls in the WC over the past five decades this species has not been observed. However, its occurrence in KZN waters is not unexpected. Furthermore, the survey vessel S.S. *Pickle* traveled continuously between the WC and KZN during the early 1900s. The KZN and southern Mozambique region has several species of *Holohalaelurus* co-occurring and until recently a lack of accurate descriptions precluded species-specific identification (Human, 2006).

Conservation status: EN (2020).

***Holohalaelurus regani* (Gilchrist, 1922b)**

Izak Catshark

Scylliorhinus regani Gilchrist, 1922b: 45. Neotype: SAM 32448. Syntypes or non-types: SAIAB [formerly RUSI] 952 (2). Type locality: Southeast of Hondeklip Bay, Northern Cape Province, 30°57'S, 16°46'E, South Africa

Local synonymy: *Scylliorhinus regani*: Gilchrist, 1922b: 45; Barnard, 1925: 42; von Bonde, 1934: 15. Not *Scyliorhinus regani*: Fowler, 1925b: 188; Fowler, 1926: 399; Barnard, 1927: 1013 (= *Poroderma marleyi* (Fowler, 1934a). *Halaelurus* (*Holohalaelurus*) *regani*: Fowler, 1934a: 235; Fowler, 1941: 42. *Scyliorhinus* (*Halaelurus*) *regani*: Norman, 1935: 36, fig. 13. *Holohalaelurus regani*: Smith, 1949a: 55, fig. 43, pl. 2; Smith, 1965: 55, fig. 43, pl. 2; Bass *et al*., 1975a: 25; Springer, 1979: 93, figs. 57–58; Compagno, 1984b: 338, fig.; Bass, 1986: 93, fig. 11.12, pl. 3; Compagno, 1988a: 156; Compagno *et al*., 1989: 54, pl.; Compagno *et al*., 1991: 80; Ebert *et al*., 1996: 236; Compagno, 1999: 119; Richardson *et al*., 2000: 553 (in part); Compagno *et al*., 2005: 237, fig., pl. 40; Ebert *et al*., 2006: 1060, fig. 7c; Human, 2006b: 18, fig. 5; Human, 2010: 25; Ebert,

2013: 181, fig. 243; Ebert *et al*., 2013a: 360, fig., pl. 48; Ebert & Mostada, 2013: 62, fig.; NPOA, 2013: 46; da Silva *et al*., 2015: 248; Ebert, 2015: 150, fig. 165; Ebert & Mostada, 2015: 47, fig.; Ebert & van Hees, 2015: 147; Weigmann, 2016: 877.

South Africa voucher material: Neotype: SAM 32448. Non-types: BMNH 1935.5.2.55, SAIAB 21827, SAIAB 21828, SAIAB 21829, SAIAB 21830, SAIAB 21831, SAIAB 21832, SAIAB 21833, SAIAB 21834, SAIAB 21835, SAIAB 21836, SAIAB 21837, SAIAB 21838, SAIAB 21839, SAIAB 21840, SAIAB 21841, SAIAB 21842, SAIAB 21843, SAIAB 21844, SAIAB 21845, SAIAB 21846, SAIAB 21847, SAIAB 21848, SAIAB 21849, SAIAB 21849, SAIAB 21850, SAIAB 21851, SAIAB 21852, SAIAB 21853, SAIAB 21854, SAIAB 21855, SAIAB 21936, SAIAB 21937, SAIAB 21938, SAM 12987, SAM 12988, SAM 12989, SAM 12990, SAM 12991, SAM 24408, SAM 32995, SAM 34500, SAM 34648.

South African distribution: A near endemic which is most common in the WC with its range extending to the east and north to Durban (KZN) where it is rare, and up the west coast to southeast of Lüderitz, Namibia.

Remarks: A very common species in the western Cape along the outer continental shelf and upper slope. Its eastern distribution is somewhat confused due to misidentification with other *Holohalaelurus* species in KZN.

Conservation status: LC (2020).

Family Scyliorhinidae Gill, 1862

Catsharks

Genus *Cephaloscyllium* Gill, 1862

Swellsharks

Cephaloscyllium Gill, 1862: 407. Type species: *Scyllium laticeps* Duméril, 1853. Type by original designation (also monotypic).

***Cephaloscyllium sufflans* (Regan, 1921)**

Balloon Shark

Scyliorhinus (*Cephaloscyllium*) *sufflans* Regan, 1921: 413. Holotype (unique): BMNH 1921.3.1.2. Type locality: About 24–35 kilometers off Umvoti River, KwaZulu-Natal, South Africa, southwestern Indian Ocean.

Local synonymy: *Scylliorhinus sufflans*: Regan, 1921: 413; Gilchrist, 1922b: 46; Barnard, 1925: 41; Barnard, 1947: 16. *Cephaloscyllium sufflans*: Fowler, 1936: 362, figs. 2–3; Fowler, 1941: 33; Smith, 1949a: 52, fig. 34; Smith, 1965: 52, fig. 34; Bass *et al*., 1975a: Springer, 1979: 29; Compagno, 1984b: 302, fig.; Bass, 1986: 89, fig. 11.3; Compagno, 1988a: 113; Compagno *et al*., 1989: 46, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 218, fig., pl. 36; Ebert, 2013: 174, fig. 228; Ebert *et al*., 2013a: 331, fig., pl. 43; Ebert & Mostarda, 2013: 61, fig.; Ebert & van Hees, 2015: 147; Weigmann, 2016: 874.

South Africa voucher material: Holotype: BMNH 1921.3.1.2.

South African distribution: From off Durban to the KZN border with Mozambique.

Remarks: This species was recently recorded from Madagascar (Fricke *et al*., 2018). Also, a 48 cm TL species was once found in the stomach of a coelacanth from the Comoro Islands (Heemstra *et al*., 2006). Records from the Gulf of Aden are dubious.

Conservation status: NT (2020).

Genus *Poroderma* Smith, 1838

Pyjama Sharks

Poroderma (subgenus of *Scyllium*) Smith, 1838: 85. Type species: *Squalus africanus* Gmelin, 1789. Type by subsequent designation.

***Poroderma africanum* (Gmelin, 1789)**

Pyjama Shark

Squalus africanus Gmelin, 1789: 1494. Types: No known types exist. Type locality: South Africa.

Local synonymy: *Squalus africanus*: Gmelin, 1789: 1494. *Squalus vittatus*: Walbaum, 1792: 516; Shaw *in* Shaw & Nodder, 1798: no page number, pl. 346 (*in* Garman, 1913: 70); Compagno, 1984b: 347, fig.; and Human,

2006a: 6). According to Human (2006a), this species was incorrectly attributed to Walbaum, 1792: 516, by Fowler, 1941: 40. However, it appears the name *Squalus vittatus* was already preoccupied (Walbaum, 1792). *Scyllium africanum*: Cuvier, 1816: 359; Smith, 1837: 85; Müller & Henle, 1841: 12, pl.; Smith, 1849: 9, fig. 1, pl. 25; Gray, 1851: 31; Duméril, 1853: 82; Duméril, 1865: 321; Günther, 1870: 405; Gilchrist, 1902: 103; Gilchrist, 1914: 111; Lampe, 1914: 209. *Squalus striatus*: Forster *in* Lichtenstein, 1844: 407 (*in* Garman, 1913: 70; Fowler, 1941: 40; Compagno, 1984b: 347; Human, 2006a: 6). *Poroderma africanum*: Fowler, 1908: 53; Garman, 1913: 170; Fowler, 1925: 189, fig. 1; von Bonde, 1948: 465, pls. 13–16; Smith, 1949a: 53, fig. 37, pl. 2; Smith, 1965: 53, fig. 37, pl. 2; Bass *et al*., 1975a: 28, fig. 16; Springer, 1979: 112; Compagno, 1984b: 346, fig.; Bass, 1986: 94, fig. 11.13, pl. 3; Compagno, 1988a: 15; Compagno *et al*., 1989: 48, pl.; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 67; Compagno *et al*., 2005: 242, fig., pl. 39; Human, 2006a: 6, fig. 1; Ebert *et al*., 2013a: 370, fig., pl. 50; Mann, 2013: 185; NPOA, 2013: 47; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 878. *Scyliorhinus africanus*: Regan, 1908b: 456; Bigelow & Schroeder, 1948b: 197. *Scylliorhinus africanus*: Thompson, 1914: 136; Gilchrist & Thompson, 1916: 270; Gilchrist, 1922b: 44; Barnard, 1925: 39; Barnard, 1927: 1013; von Bonde, 1933: 41; von Bonde, 1934: 15; Barnard, 1947: 16, pl. 3; Barnard, 1948: 342. *Conoporoderma africanum*: Smith & Smith, 1966: 25.

South Africa voucher material: SAIAB 2607, SAIAB 2869, SAIAB 6003, SAIAB 6278, SAIAB 7129, SAIAB 7130, SAIAB 7131, SAIAB 7132, SAIAB 7133, SAIAB 7825, SAIAB 11428, SAIAB 11959, SAIAB 12849, SAIAB 13129, SAIAB 13148, SAIAB 13149, SAIAB 16730, SAIAB 17034, SAIAB 19991, SAIAB 25343, SAIAB 25344, SAIAB 25345, SAIAB 26307, SAIAB 26477, SAIAB 26478, SAIAB 26479, SAIAB 26480, SAIAB 26481, SAIAB 26880, SAIAB 26885, SAIAB 27021, SAIAB 41531, SAIAB 41533, SAIAB 41540, SAIAB 48498, SAIAB 53687, SAIAB 55004, SAIAB 55512, SAIAB 99202, SAIAB 99203. SAM 28624, SAM 28633, SAM 29304, SAM 32571.

South African distribution: Endemic. Granger Bay, Table Bay (WC) to just north of East London (EC) (Human, 2006a). Records from outside South Africa are dubious and require confirmation.

Remarks: Human (2006a) provides a detailed discussion on the synonymy of this distinctive catshark. This species has been reported from Madagascar and Mauritius (Fricke, 1999a; Fricke *et al*., 2018), but it would seem implausible for a shallow, coastal species to cross such a great distance to reach either location. More likely these records were erroneous in their location as suggested by Human (2006a).

Conservation status: LC (2020).

***Poroderma pantherinum* (Smith, *in* Müller & Henle, 1838c)**

Leopard Catshark

Scyllium pantherinum Smith, *in* Müller & Henle, 1838c: 13. Syntypes: BMNH 1845.7.3.145 (stuffed); RMNH uncatalogued (1, lost); UTZI uncatalogued (1, lost). According to Fricke *et al*. (2020) appeared first as name only in Smith, 1838: 85.

Local synonymy: *Poroderma pantherinum*: Smith, 1837: 85 (name only); Smith, *in* Müller & Henle, 1838c: 13; Garman, 1913: 70; Fowler, 1925b: 189; Fowler, 1941: 37; Smith 1949a: 53, fig. 33; Smith, 1965: 53, fig. 33; Bass *et al*., 1975a: 30, fig. 18; Springer, 1979: 114; Compagno, 1984b: 349, fig.; Bass, 1986: 95, fig. 11.15, pl. 3; Compagno, 1988a: 117; Compagno *et al*., 1989: 48, pl.; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 67; Compagno *et al*., 2005: 243, fig., pl. 39; Human, 2006a: 6, fig. 3; Ebert *et al*., 2013a: 370, fig., pl. 50; Mann, 2013: 187; NPOA, 2013: 47; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 878. *Poroderma submaculatum* Smith, 1837: 85 (name only). *Poroderma variegatum* Smith, 1837: 85 (name only). *Scyllium leopardinum* Müller & Henle, 1838c: 13 (Fowler, 1941: 38 attributes this name to Van Horst *in* Müller & Henle, although no reference to Van Horst is given in Müller & Henle). *Scyllium maeandrinum* von Rapp *in* Müller & Henle, 1838c: 13. *Scyllium variegatum* Smith *in* Müller & Henle, 1838c: 14; Smith, 1849: 11, fig. 3, pl. 25; Duméril 1853: 83; Bleeker 1878: 1, 8; Sauvage 1891: 511. *Scyllium pantherinum*: Smith *in* Müller & Henle, 1838c: 13; Smith 1849: 11, fig. 2, pl. 25; Gray, 1851: 31; Bleeker, 1860: 57; Duméril, 1865: 322; Gilchrist, 1902: 164. *Scyllium africanum*: Günther, 1870: 405; Lampe, 1914: 209. *Scyllium africanum* var. *pantherina*: Günther, 1870: 405; Lampe, 1914: 212. *Scyllium africanum* var. *striata*: Günther, 1870: 405; Lampe, 1914: 212. *Scyllium africanum* var. *variegata*: Günther, 1870: 405; Lampe, 1914: 212. *Scyliorhinus pantherinus*: Regan, 1908b: 456. *Scyllium africanum* var. *punctata* Lampe, 1914: 212. *Scylliorhinus pantherinus*: Smith, 1849: 11, fig. 2, pl. 25; Thompson, 1914: 138; Gilchrist & Thompson, 1916: 270; Gilchrist, 1922a: 4; Barnard, 1925:

40, fig. 5, pl. 2; Barnard, 1927: 1013. *Scyliorhinus regani*: Fowler, 1925b: 188, fig. 1; Fowler, 1926: 32, fig. 3, not *Holohalaelurus regani* (Gilchrist, 1922b). *Poroderma marleyi* Fowler, 1934a: 234 (original description); Fowler, 1941: 38; Bigelow & Schroeder, 1948b: 197; Smith, 1949a: 53, pl. 2; Springer & Garrick, 1964: 86; Smith, 1965: 53, pl. 2; Bass *et al*., 1975a: 29, fig. 17; Springer, 1979: 114; Compagno, 1984b: 348, fig.; Bass, 1986: 94, fig. 11.14; Compagno, 1988a: 118; Human, 2006a: fig. 5. *Scyliorhinus leopardus*: Fowler, 1935: 361. *Conoporoderma pantherinum*: Bigelow & Schroeder, 1948b: 197.

South Africa voucher material: SAIAB 5910, SAIAB 6000, SAIAB 6001, SAIAB 6002, SAIAB 10273, SAIAB 10372, SAIAB 10737, SAIAB 11960, SAIAB 12016, SAIAB 13130, SAIAB 16728, SAIAB 17326, SAIAB 17783, SAIAB 18179, SAIAB 19992, SAIAB 25181, SAIAB 25214, SAIAB 25215, SAIAB 25216, SAIAB 25217, SAIAB 25336, SAIAB 25921, SAIAB 25921, SAIAB 25928, SAIAB 26283, SAIAB 26284, SAIAB 26285, SAIAB 26286, SAIAB 26287, SAIAB 26288, SAIAB 26289, SAIAB 26441, SAIAB 26442, SAIAB 26443, SAIAB 27206, SAIAB 27207, SAIAB 27649, SAIAB 34577, SAIAB 37057, SAIAB 39990, SAIAB 48495, SAIAB 53684, SAIAB 53685, SAIAB 189034.

South African distribution: Endemic. Saldanha Bay (WC) to Durban (KZN), but most common on the south and southeast coasts (Human, 2006a).

Remarks: Fowler (1934a) described a new *Poroderma* species (*P. marleyi*) based on an extreme color morph from off Durban. However, examination of additional color morphs throughout its range reveals this species to be a junior synonym of *P. pantherinum* (Human, 2006a). Furthermore, it appears that "marleyi" color morph occurs at the extreme ends of its range, both in the Saldaha (WC) and KZN areas (D.A. Ebert, unpubl. data)

Conservation status: LC (2020).

Genus *Scyliorhinus* Blainville, 1816

Scyliorhinus (subgenus of *Squalus*) Blainville, 1816: 121. Type species: *Scyliorhinus canicula* (Linnaeus, 1758). Type by subsequent designation.

***Scyliorhinus capensis* (Müller & Henle, 1838c)**

Yellowspotted Catshark

Scyllium capense Müller & Henle, 1838c: 11. Lectotype: BMNH 1845.7.3.141 (lectotype designated by Soares & de Carvalho, 2019). Type locality: Cape of Good Hope, Western Cape Province, South Africa.

Local synonymy: *Scyllium capense*: Smith, 1837: 85 (name only); Müller & Henle, 1838c: 11; Gray, 1851: 31; Bleeker, 1860b: 57; Duméril, 1865: 320; Günther, 1870: 404; Gilchrist, 1902: 165 (listed, "Cape Seas"). *Scyliorhinus capensis*: Regan, 1908b: 458; Fowler, 1941: 35; Smith, 1949a: 54, fig. 38, pl. 2; Smith, 1965: 54, fig. 38, pl. 2; Bass *et al*., 1975a: 32, fig. 19; Springer, 1979: 132, fig. 84; Compagno, 1984b: 359, fig.; Bass, 1986: 95, figs. 11, 16, pl. 3; Compagno, 1988a: 122; Compagno, 1988b: 606, figs. 2, 6b, 7b, 8c–d (compared to *S. comoroensis*); Compagno *et al*., 1989: 46, pl.; Compagno *et al*., 1991: 83; Ebert *et al*., 1996: 236; Compagno, 1999: 119; Compagno *et al*., 2005: 248, fig., pl. 41; Ebert *et al*., 2006: 1053; Ebert, 2013: 186, fig. 250; Ebert *et al*., 2013a: 379, fig., pl. 51; Ebert & Mostarda, 2013: 66, fig.; Ebert, 2015: 153, fig. 167; Ebert & Mostarda, 2015: 48, fig.; NPOA, 2013: 47; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 147; Weigmann, 2016: 879 (listed); Soares & de Carvalho, 2019: 32. *Catulus capensis*: Garman, 1913: 74. *Scylliorhinus capensis*: Thompson, 1914: 137; Gilchrist, 1921: 71 (listed, Cape of Good Hope); Gilchrist, 1922b: 45; von Bonde, 1923: 5; Barnard, 1925: 40, fig. 8b; von Bonde, 1934: 15; Barnard, 1947: 16, fig. 1, pl. 3. *Scyliorhinus* (*Scyliorhinus*) *capensis*: Norman, 1935: 36. *Haploblepharus capensis*: White, 1937: 121.

South Africa voucher material: Lectotype: BMNH 1845.7.3.141. Paralectotypes: BMNH 1845.7.3.144; BMNH 1953.5.10.2. Soares & de Carvalho (2019) lists 81 additional institutional specimens in appendix.

South African distribution: Most common in the west from the Orange River (NC) to Cape Agulhas (WC), but does extend at least to Waterloo Bay (EC) (Soares & de Carvalho, 2019) where it is uncommon, and with a record of one specimen from KZN (Bass *et al*., 1975a; Compagno *et al*., 1989).

Remarks: *Scyliorhinus capensis* is a near endemic to South Africa, although there is at least one record of this species from southwest of Lüderitz, southern Namibia (Compagno *et al*., 1991).

Conservation status: NT (2020).

Family Proscylliidae Fowler, 1941
Finback Catsharks

Genus *Eridacnis* Smith, 1913
Ribbontail Catsharks
Eridacnis Smith, 1913: 599. Type species: *Eridacnis radcliffei* Smith, 1913. Type by original designation (also monotypic).

***Eridacnis sinuans* (Smith, 1957a)**
African Ribbontail Catshark
Neotriakis sinuans Smith, 1957a: 262, Fig. 2 Holotype: SAIAB [formerly RUSI] 31. Off Durban, KwaZulu-Natal, South Africa, southwestern Indian Ocean.
Local synonymy: *Neotriakis sinuans* Smith, 1957a: 262, fig. 2 (original description, off Durban, KwaZulu-Natal, South Africa); Smith, 1961a: 565, fig. 16a, pl. 108; Smith, 1964: 284; Smith, 1965: 565, fig. 16a, pl. 108. *Eridacnis sinuans*: Bass *et al*., 1975b: 12, fig. 6; Compagno, 1984b: 374, fig.; Bass & Compagno, 1986: 88, fig. 10.3; Compagno, 1988a: 185; Compagno *et al*., 1989: 54, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 256, fig., pl. 43; Ebert, 2013: 191, fig. 257; Ebert *et al*., 2013a: 389, fig., pl. 53; Ebert & Mostarda, 2013: 68, fig.; Ebert & van Hees, 2015: 145; Weigmann, 2016: 865.
South Africa voucher material: Holotype: SAIAB [former RUSI] 31. Non-types: SAIAB 6095 [ex ORI 1533], SAIAB 6098 [ex ORI 1023], SAIAB 6099 [ex ORI 1529], SAIAB 6100 [ex ORI 1485], SAIAB 6102 [ex ORI 1107], SAIAB 6103 [ex ORI 1108], SAIAB 6749 [ex ORI 1311], SAIAB 6750 [ex ORI 1314], SAIAB 6751 [ex ORI 1318], SAIAB 6752 [ex ORI 1504], SAIAB 6753 [ex ORI 1507], SAIAB 6754 [ex ORI 1580], SAIAB 6755 [ex ORI 1581], SAIAB 6756 [ex ORI 1583], SAIAB 6757 [ex ORI 1589], SAIAB 6758 [ex ORI 163], SAIAB 6759 [ex ORI 1827], SAIAB 6760 [ex ORI 1865], SAIAB 39887.
South African distribution: Central to northern KZN.
Remarks: Smith (1957a) described a new genus (*Neotriakis*) for this species, but subsequent reviews determined it to be in the genus *Eridacnis* (Compagno, 1970, 1984b, 1988a; Bass *et al*., 1975b). The species appears to be relatively common in KZN waters, but also occurs off Mozambique and Tanzania.
Conservation status: LC (2019).

Family Triakidae Gray, 1851
Houndsharks

Genus *Galeorhinus* Blainville, 1816
Tope Sharks
Galeorhinus (subgenus of *Squalus*) Blainville, 1816: 121. Type species: *Squalus galeus* Linnaeus, 1758. Type by subsequent designation.

***Galeorhinus galeus* (Linnaeus, 1758)**
Soupfin Shark
Squalus galeus Linnaeus, 1758: 234. No known types. Neotype designated by Fricke, 1999a: 16, but withdrawn in Fricke, 2000: 639. Type locality: Mediterranean Sea and Northeastern Atlantic [original: "in Oceano Europe"].
Local synonymy: *Galeus canis*: Gray, 1851: 52; Gilchrist 1902: 163. *Galeorhinus canis*: Thompson, 1914: 140; Barnard, 1925: 28, fig. 3, pl. 1; von Bonde, 1933: 40; von Bonde, 1934: 14. *Galeorhinus galeus*: Fowler, 1936: 57, fig. 14; Fowler, 1941: 190; Barnard, 1947: 10, figs. 5, 5a, pl. 1; Smith, 1949a: 44; fig. 15; Smith, 1957b: 586, fig. 1, pl. 18; D'Aubrey, 1964a: 21, pl. 7; Davies, 1964: 48; Smith, 1965: 44; fig. 15; Smith & Smith, 1966: 21, fig.; Bass *et al*., 1975b: 20, fig. 14, pl. 1; van der Elst, 1981: 40, fig.; Compagno, 1984b: 386, fig.; Bass *et al*., 1986: 78, fig. 9.20; Compagno, 1988a: 249; Compagno *et al*., 1989: 56, pl.; Compagno *et al*., 1991: 84; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 63; Compagno *et al*., 2005: 262, fig., pl. 44; Ebert *et al*., 2013a: 408, fig., pl. 46; Mann, 2013: 287; NPOA, 2013: 43; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 145; Compagno, 2016: 1276; Weigmann, 2016: 882.

South Africa voucher material: SAIAB 2732, SAIAB 6834, SAIAB 6835, SAIAB 6836, SAIAB 6837, SAIAB 11429, SAIAB 11430, SAIAB 11962, SAIAB 11963, SAIAB 12122, SAIAB 12819, SAIAB 12832, SAIAB 12979, SAIAB 25596, SAIAB 27023, SAIAB 39371, SAIAB 41964, SAIAB 41965, SAIAB 44246, SAIAB 46923, SAIAB 99193, SAIAB 99194, SAIAB 99195, SAIAB 99196.

South African distribution: The Orange River (NC) to East London (EC).

Remarks: Although wide-ranging globally, within the southern African region, this species appears to be mostly confined to South African waters, with only a few records north of the Orange River in Namibian waters. A highly migratory species, it shows strong segregation by sex and size (Compagno *et al*., 1991).

Conservation status: CR (2020).

Genus *Hypogaleus* Smith, 1957b

Pencil Sharks

Hypogaleus Smith, 1957b: 589, pl. 19. Subgenus of *Galeorhinus* Blainville, 1816. Type species: *Galeorhinus (Hypogaleus) zanzibarensis* Smith, 1957b, by original designation (also monotypy); a junior synonym of *Hypogaleus hyugaensis* (Miyosi, 1939).

***Hypogaleus hyugaensis* (Miyosi, 1939)**

Pencil Shark

Eugaleus hyugaensis Miyosi, 1939: 91, fig. 1. Holotype (unique): MGHSJ (lost). Type locality: off Hyuga Nada, east coast of Miyazaki Prefecture, Japan.

Local synonymy: *Galeorhinus zanzibarensis*: D'Aubrey, 1964a: 22, pl. 8. *Hypogaleus hyugaensis*: Bass *et al*., 1975b: 22, fig. 15; Compagno, 1984b: 394, fig.; Bass *et al*., 1986: 79, fig. 9.22; Compagno, 1988a: 15; Compagno *et al*., 1989: 56, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 265, fig., pl. 44; Ebert *et al*., 2013a: 412, fig., pl. 54; Ebert & van Hees, 2015: 145; Weigmann, 2016: 882.

South Africa voucher material: SAIAB 6163, SAIAB 6215 [ex ORI 2692], SAIAB 6217 [ex ORI 2928], SAIAB 10113, SAIAB 99086, SAIAB 99087, SAIAB 99088.

South African distribution: The entire KZN coast.

Remarks: Smith (1957b) described the genus *Hypogaleus* in his description of *H. zanzibarensis* from Zanzibar, but Bass *et al*. (1975b) found no differences between it and the western North Pacific *H. hyugaensis*. Subsequent authors (Compagno, 1984b; 1988a) concurred with those findings and consider the genus to be monotypic with *H. hyugaensis* taking precedence.

Conservation status: LC (2016).

Genus *Mustelus* Linck, 1790

Houndsharks

Mustelus Linck, 1790: 31. Type species: *Squalus mustelus* Linnaeus, 1758, by subsequent designation by the ICZN (Opinion 93: 1925: 5).

Remarks: The genus *Mustelus* in South African waters, like many other regions, is very convoluted and confused due to poor characteristics separating species, misidentification of local species, and new or previously unknown species. Bass *et al*. (1975b) noted the confusion within the genus. Therefore, the local synonymy for each of the species occurring in South Africa should be treated with caution until a more thorough study has been undertaken.

***Mustelus mosis* Hemprich & Ehrenberg, 1899**

Hardnose Houndshark

Mustelus mosis Hemprich & Ehrenberg, 1899: 8, pl. 7 (fig. 3 + a–d). Syntypes: ZMB 4501 (1). Type locality: Red Sea.

Local synonymy: *Mustelus mosis*: Bass *et al*., 1986: 82, fig. 9.26; Compagno, 1988a: 223; Compagno *et al*., 1989: 58, pl.; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 64; Compagno *et al*., 2005: 275, fig., pl. 48; Ebert *et al*., 2013a: 421, fig., pl. 58; NPOA, 2013: 44; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 145; Weigmann, 2016: 885.

South Africa voucher material: SAIAB 6229, SAIAB 7979, SAIAB 9499, SAIAB 10739, SAIAB 19387.

South African distribution: KZN from about Durban to the border with Mozambique.

Remarks: Van der Elst (1981) tentatively identified this species as *Mustelus canis* (non Mitchill), a western North Atlantic species, but Bass *et al*. (1986) subsequently identified it as *M. mosis*. Although its range in South African waters is only from about Durban north to Kosi Bay, it appears to have a very large regional range, occurring into the northern Indian Ocean (assuming it is the same species). A detailed revision of the WIO *Mustelus* is needed to clarify the status of this and other species in the region.

Conservation status: NT (2019).

***Mustelus mustelus* (Linnaeus, 1758)**

Smooth Houndshark

Squalus mustelus Linnaeus, 1758: 235. No known types. Type locality: Mediterranean Sea and Northeastern Atlantic [original: "in Oceano Europe"].

Local synonymy: *Mustelus laevis*: Gilchrist, 1902: 163 (in part, including *Triakis megalopterus*); Thompson, 1914: 142 (in part, including *Triakis megalopterus*); Barnard, 1925: 29 (in part, including *Triakis megalopterus*). *Mustelus manazo*: Smith, 1949a: 45 (in part?); Smith, 1957c: 357 (in part?); Smith, 1965: 45 (in part?). *Mustelus punctulatus*: Smith, 1949a: 45 (in part). *Mustelus canis*: Fowler, 1936: 61 (in part); Fowler, 1941: 204 (in part); Smith, 1949a: 46 (in part); Smith, 1965: 46 (in part). *Mustelus mustelus*: Smith, 1949a: 46 (in part); Compagno, 1984b: 419, fig.; Bass *et al*., 1986: 82, fig. 9.27; Compagno, 1988a: 223; Compagno *et al*., 1989: 58, pl.; Compagno *et al*., 1991: 85; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 64; Compagno *et al*., 2005: 275, fig., pl. 46; Ebert *et al*., 2013a: 422, fig., pl. 56; Mann, 2013: 289; NPOA, 2013: 44; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 145; Compagno, 2016: 1279; Weigmann, 2016: 885.

South Africa voucher material: SAIAB 2741, SAIAB 2884, SAIAB 6198, SAIAB 6259, SAIAB 6261, SAIAB 6262, SAIAB 7848, SAIAB 10609, SAIAB 10725, SAIAB 11929, SAIAB 12146, SAIAB 12330, SAIAB 12352, SAIAB 19393, SAIAB 19790, SAIAB 26445, SAIAB 30333, SAIAB 38495, SAIAB 46917, SAIAB 46918, SAIAB 46919, SAIAB 48503, SAIAB 48577, SAIAB 51204, SAIAB 56971, SAIAB 98651, SAIAB 200110, SAIAB 200627, SAIAB 202975.

South African distribution: The Orange River (NC) to KZN.

Remarks: A very common coastal houndshark, it has a very wide range, occurring from South Africa to European Atlantic waters and into the Mediterranean Sea. Recent molecular research has revealed that at least two subpopulations exist for this species, one west to the west of Cape Agulhas and another to the east (Maduna *et al*., 2016). During a long-term series of bottom trawl surveys by the F.R.S. *Africana* this species was never encountered at depths >50 m (Compagno *et al*., 1991). It is one of the most common species caught locally by shore anglers.

Conservation status: VU (2009).

***Mustelus palumbes* Smith, 1957c**

Whitespotted Houndshark

Mustelus palumbes Smith, 1957c: 358, figs. 1e–f. Holotype: SAIAB [former RUSI] 24. Type locality: Knysna Estuary, Western Cape Province, South Africa.

Local synonymy: *Mustelus vulgaris*: ?Bleeker, 1860b: 57; ?Gilchrist, 1902: 163; von Bonde, 1923: 4. *Mustelus canis*: Thompson, 1914: 141; Barnard, 1925: 30; Norman, 1935: 36; Smith, 1949a: 46 (in part); Smith, 1965: 46 (in part). *Mustelus mustelus*: Fowler, 1936: 61 (in part); Fowler, 1941: 207 (in part); Smith, 1949a: 46 (in part); Smith, 1965: 46 (in part). *Mustelus manazo*: Smith, 1949a: 45 (in part?); Smith, 1957c: 357 (in part?); Smith, 1965: 45 (in part?). *Mustelus palumbes*: Smith, 1965: 565; Smith & Smith, 1966: 22, fig.; Compagno, 1984b: 422, fig.; Bass *et al*., 1986: 82, fig. 9.28, pl. 4; Compagno, 1988a: 223; Compagno *et al*., 1989: 58, pl.; Compagno *et al*., 1991: 87; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 64; Compagno *et al*., 2005: 277, fig., pl. 46; Ebert *et al*., 2013a: 423, fig., pl. 56; NPOA, 2013: 44; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 146; Compagno, 2016: 1281; Weigmann, 2016: 885.

South Africa voucher material: SAIAB 24, SAIAB 6070, SAIAB 6228, SAIAB 6230, SAIAB 6231, SAIAB 6232, SAIAB 6260, SAIAB 8370, SAIAB 10724, SAIAB 11964, SAIAB 12000, SAIAB 12118, SAIAB 12120, SAIAB 12123, SAIAB 12124, SAIAB 12125, SAIAB 12126, SAIAB 12127, SAIAB 12128, SAIAB 12129, SAIAB 12804, SAIAB 12806, SAIAB 19391, SAIAB 21883, SAIAB 21884, SAIAB 21885, SAIAB 25184,

SAIAB 25185, SAIAB 25328, SAIAB 25329, SAIAB 25330, SAIAB 25331, SAIAB 25332, SAIAB 25333, SAIAB 25335, SAIAB 26640, SAIAB 44190, SAIAB 46920, SAIAB 48506, SAIAB 99365, SAIAB 99366, SAIAB 99367, SAIAB 99382, SAIAB 189111.

South African distribution: The Orange River (NC) to central KZN.

Remarks: This relatively common houndshark species tends to occur mostly at depths over 70 m, while its relatives *M. mustelus* and *T. megalopterus*, both occur coastally at depths less than 50 m (Compagno *et al*., 1991).

Conservation status: LC (2020).

Genus *Scylliogaleus* Boulenger, 1902

Flapnose Houndsharks

Scylliogaleus Boulenger, 1902: 51. Type species: *Scylliogaleus quecketti* Boulenger, 1902. Type by monotypy.

***Scylliogaleus quecketti* Boulenger, 1902**

Flapnose Houndshark

Scylliogaleus quecketti Boulenger, 1902: 51, pl. 4. Holotype (unique): BMNH 1903.2.6.21. Type locality: off Umkomaas, KwaZulu-Natal, South Africa, southwestern Indian Ocean.

Local synonymy: *Scylliogaleus quecketti*: Boulenger, 1902: 51, pl. 4; Garman, 1913: 179; Fowler, 1941: 210; Barnard, 1947: 10, fig. 7, pl. 1; Smith, 1950: 878; Smith, 1957c: 353, figs. 1a, b; Bass *et al*., 1975b: 13, fig. 8; Compagno, 1984b: 427, fig.; Bass *et al*., 1986: 85, fig. 9.34; Compagno, 1988a: 16; Compagno *et al*., 1989: 56, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 280, fig., pl. 45; Ebert *et al*., 2013a: 427, fig., pl. 55; Ebert & van Hees, 2015: 146, Weigmann, 2016: 886. *Scylliogaleus queketti*: Boulenger, 1903: 63; Gilchrist & Thompson, 1916: 283; Barnard, 1925: 31, pl. 1; Barnard, 1927: 1013; von Bonde, 1934: 14; Smith, 1949a: 44; fig. 16; Smith, 1965: 44; fig. 16.

South Africa voucher material: SAIAB 6096 [ex ORI 2096], SAIAB 6097 [ex ORI 1121], SAIAB 6109 [ex ORI 2096], SAIAB 6110 [ex ORI 2587], SAIAB 6213 [ex ORI 754], SAIAB 6214 [ex ORI 2586], SAIAB 6227, SAIAB 6978 [ex ORI 2074], SAIAB 6979 [ex ORI 2096], SAIAB 6980 [ex ORI 1121], SAIAB 12822, SAIAB 12977, SAIAB 14915, SAIAB 16308, SAIAB 19430, SAIAB 99204, SAIAB 99205.

South African distribution: Endemic. Known only from East London (EC) to Richards Bay (KZN).

Remarks: This species has a very restricted nearshore coastal distribution.

Conservation status: VU (2019).

Genus *Triakis* Müller & Henle, 1838a

Leopard Sharks

Triakis Müller & Henle, 1838a: 36. Type species: *Triakis scyllium* Müller & Henle, 1839, by subsequent monotypy; appeared first without species.

***Triakis megalopterus* (Smith, 1839)**

Mustelus megalopterus Smith, 1839: no pagination, pl. 2. Syntypes: BMNH 1845.7.3.149 (1), BMNH 1845.7.3.159 (1). Type locality: Cape Town, South Africa, southeastern Atlantic.

Local synonymy: *Mustelus megalopterus*: Smith, 1839: no pagination, pl. 2; Gray, 1851: 58; Bleeker, 1860b: 57; Smith, 1957c: 357, fig. 2l. *Mustelus natalensis*: Steindachner, 1866: 482, pl. 1; Thompson, 1914: 143; Smith, 1957c: 357, fig. 26g, h, i. *Mustelus laevis* (in part): Günther, 1870: 385; Gilchrist, 1902: 163; Thompson, 1914: 142; Barnard, 1925: 29. *Mustelus punctatus*: Smith, 1949a: 45, fig. 18. *Mustelus nigropunctatus*: Smith, 1949a: 45, fig. 18; Smith, 1952a: 223, pl. 13; Smith, 1957c: 357, fig. 23k. *Triakis natalensis*: Bass *et al*., 1975b: 17, fig. 11. *Triakis megalopterus*: Bass *et al*., 1975b: 16, fig. 10; Compagno, 1984b: 430, fig.; Bass *et al*., 1986: 86, fig. 9.36; Compagno, 1988a: 214; Compagno *et al*., 1989: Heemstra & Heemstra, 2004: 65; Compagno *et al*., 2005: 282, fig., pl. 45; Ebert *et al*., 2013a: 429, fig., pl. 55; Mann, 2013: 291; NPOA, 2013: 45; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 146; Compagno, 2016: 1283; Weigmann, 2016: 886.

South Africa voucher material: SAIAB [formerly RUSI] 424 (Holotype of *Mustelus nigropunctatus*). SAIAB 6208, SAIAB 6270, SAIAB 7978, SAIAB 12568, SAIAB 19392, SAIAB 19594, SAIAB 19792, SAIAB 19994, SAIAB 200309, SAIAB 200329, SAIAB 26298, SAIAB 27022, SAIAB 38496, SAIAB 46948, SAIAB 51228, SAIAB 2418 (accessioned as *Mustelus natalensis*), SAIAB 98942 (accessioned as *Mustelus nigropunctatus*).

South African distribution: The Orange River (NC) to Coffee Bay, Transkei coast (EC).

Remarks: A large-bodied houndshark, *T. megalopterus* is a common nearshore species found almost exclusively at depths of less than 50 m.

Conservation status: LC (2020).

Family Hemigaleidae Hasse, 1879

Weasel Sharks

Genus *Hemipristis* Agassiz, 1843

Snaggletooth Sharks

Hemipristis Agassiz, 1835: pl. 27 (fig. 18–38). Type species: *Hemipristis serra* Agassiz, 1835. Type by subsequent designation, based on a fossil type species. First appeared in 1835 in plate volume, as pl. 27, with a description following later in 1843: v. 3, pp. 237, 302. According to Fricke *et al*. (2020) authorship should be ascribed to Agassiz, 1835 and not 1843 as often dated.

***Hemipristis elongata* (Klunzinger, 1871)**

Snaggletooth Shark

Dirrhizodon elongatus Klunzinger, 1871: 665. Holotype: SMNS 1640 (dry); probably lost. Type locality: Al-Qusair, Egypt, Red Sea.

Local synonymy: *Hemipristis elongatus*: Bass *et al.*, 1975b: 29, fig. 18; Compagno, 1984b: 440, fig.; Compagno, 1988a: 16; Compagno *et al.*, 1989: 60, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 285, fig., pl. 49. *Hemipristis elongata* Bass *et al.*, 1986: 79, fig. 9.21; Ebert *et al*., 2013a: 435, fig., pl. 60; Ebert & van Hees, 2015: 146; Weigmann, 2016: 863.

South Africa voucher material: No South African caught specimens are held at SAIAB or SAM.

South African distribution: Margate (KZN) is the southernmost extent of its range in South African waters (Bass *et al*., 1975b).

Remarks: The species is occasionally observed in South African waters but appears to be more common to the north in East Africa.

Conservation status: VU (2016).

Genus *Paragaleus* Budker, 1935

Slender Weasel Sharks

Paragaleus Budker, 1935: 107. Type species: *Paragaleus gruveli* Budker, 1935, by monotypy.

***Paragaleus leucolomatus* Compagno & Smale, 1985**

Whitefin Weasel Shark

Paragaleus leucolomatus Compagno & Smale, 1985: 9, figs. 2–8. Holotype (unique): SAIAB [formerly RUSI] 21175. Type locality: Southeast of Kosi Bay mouth, KwaZulu-Natal, South Africa, southwestern Indian Ocean, depth 20 m.

Local synonymy: *Paragaleus leucolomatus*: Compagno & Smale, 1985: 9, figs. 2–8; Bass *et al.*, 1986: 83, fig. 9.30; Compagno, 1988a: 35; Compagno *et al.*, 1989: 60, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 286, fi.g, pl. 49; Ebert *et al*., 2013a: 435, fig., pl. 60; Ebert & van Hees, 2015: 146; Weigmann, 2016: 863.

South Africa voucher material: Holotype: SAIAB 21175. A few other specimens are in the fish collections of SAIAB and SAM, but are uncatalogued.

South African distribution: Sodwana Bay to the KZN border with Mozambique.

Remarks: A rare species known from a few specimens caught between southern Mozambique and Sodwana Bay. Local beach anglers in northern KZN are familiar with this species, but release them if caught (R. Kyle, Oceanographic Research Institute, pers. comm.).

Conservation status: VU (2020).

Family Carcharhinidae Jordan & Evermann, 1896
Requiem Sharks

Genus *Carcharhinus* Blainville, 1816
Whaler Sharks
Carcharhinus (subgenus of *Squalus*) Blainville, 1816: 121. Type species: *Carcharias melanopterus* Quoy & Gaimard, 1824, by subsequent designation of the ICZN.
Remarks: The taxonomic nomenclature of the *Carcharhinus* species in South Africa is very convoluted with numerous examples of misidentifications, new species descriptions that later were reduced to junior synonyms, and changes to the genus name. Therefore, caution is advised with the individual species synonymies. The synonymies presented were taken from primary literature sources, especially Bass *et al*. (1973, 1986) and Eschmeyer's Catalogue of Fishes (Fricke *et al*., 2020), and from research by the present authors and discussions with knowledgeable individuals.

***Carcharhinus albimarginatus* (Rüppell, 1837)**
Silvertip Shark
Carcharias albimarginatus Rüppell, 1837: 164, pl. 18 (fig. 1). Lectotype: SMF 3582 (dry and mounted); lectotype designation by Rosenblatt & Baldwin (1958). Type locality: Ras Muhammad, Sinai, Egypt, Red Sea.
Local synonymy: *Carcharias albimarginatus*: Bass *et al*., 1973: 17, fig. 6; Garrick, 1982: 116, figs. 53–54; Compagno, 1984b: 455, fig.; Bass *et al*., 1986: 69, fig. 9.1; Compagno, 1988a: 294; Compagno *et al*., 1989: 70, pl.; Compagno, 1999: 119; Compagno *et al*., 2005: 289, fig., pl. 52; Ebert *et al*., 2013a: 457, fig., pl. 63; Ebert & Dando, 2014: 29, fig.; Ebert & van Hees, 2015: 146; Weigmann, 2016: 853.
South Africa voucher material: SAIAB 25353.
South African distribution: Northern KZN.
Remarks: Although widely distributed in the tropical Indo-Pacific, it was not widely reported from South African waters until Bass *et al*. (1973) commented that it was rather common on the northern KZN coast.
Conservation status: VU (2016).

***Carcharhinus altimus* (Springer, 1950)**
Bignose Shark
Eulamia altima Springer, 1950: 9. Holotype: USNM 133828. Type locality: Cosgrove Reef, Key West, Florida, U.S.A.
Local synonymy: *Carcharhinus altimus*: D'Aubrey, 1964a: 35, pl. 18; Garrick, 1967: 89; Bass *et al*., 1973: 20, fig. 7; Garrick, 1982: 142, figs. 64–65; Compagno, 1984b: 457, fig.; Bass *et al*., 1986: 69, fig. 9.2; Compagno, 1988a: 317; Compagno *et al*., 1989: 62, pl.; Compagno, 1999: 119; Heemstra & Heemstra, 2004: 57; Compagno *et al*., 2005: 289, fig., pl. 57; Ebert, 2013: 206, fig. 274; Ebert *et al*., 2013a: 456, fig., pl. 66; Ebert & Mostarda, 2013: 70, fig.; Ebert & Dando, 2014: 31, fig.; Ebert & van Hees, 2015: 146; Weigmann, 2016: 853.
South Africa voucher material: SAIAB 6219 [ex ORI 2678], SAIAB 10277, SAIAB 26159.
South African distribution: Port Alfred (EC) to northern KZN.
Remarks: Usually an outer shelf and upper continental slope species, this species does occasionally come to the surface and inshore. A 242 cm TL specimen [SAIAB 26159] was caught at the surface 22 km off Kenton-on-Sea (EC) by a skiboat angler. It is rarely caught in the bather protective shark nets off KZN.
Conservation status: NT (2020).

***Carcharhinus amblyrhynchos* (Bleeker, 1856)**
Grey Reef Shark
Carcharias (*Prionodon*) *amblyrhynchos* Bleeker, 1856: 467. Holotype: RMNH 7377 (head and skin). Type locality: near Solombo Island, Java Sea, Indonesia.
Local synonymy: *Carcharhinus spallanzani*: D'Aubrey, 1964a: 29, pl. 13; Bass *et al.*, 1973: 77, fig. 31. *Carcharhinus amblyrhynchos*: Bass *et al.*, 1973: 79, fig. 32; Garrick, 1982: 106, figs. 48–49; Bass *et al*., 1986: 70, fig. 9.3; Compagno, 1988a: 315; Compagno, 1999: 119; Compagno *et al*., 2005: 290, fig., pl. 52; Ebert *et al.*, 2013a: 458, fig., pl. 63; Ebert & Dando, 2014: 33, fig.; Ebert & van Hees, 2015: 146; Weigmann, 2016: 854.

Carcharhinus wheeleri: Garrick, 1982: 111, figs. 50–51; Compagno, 1984b: 501, fig.; Bass *et al*., 1986: 77, fig. 9.18; Compagno, 1988a: 319; Compagno *et al.*, 1989: 66, pl.

South Africa voucher material: SAIAB 25352, SAIAB 27166.

South African distribution: Sodwana Bay and Kosi Bay, northern KZN.

Remarks: This species has a complicated nomenclatural history. D'Aubrey (1964a) referred to it as *C. spallanzani* and noted its occurrence from Sodwana Bay and northern KZN. Bass *et al*. (1973) listed both *C. amblyrhynchos* and *C. spallanzani* as separate species commenting that the former was rare in East Africa, while the latter occurred in the shallow waters of northern KZN. Garrick (1982) reviewed the issue and described it as a new species *C. wheeleri*. The name *C. wheeleri* was considered valid by subsequent authors (Bass *et al*., 1986; Compagno *et al*., 1989), but was later synonymized with *C. amblyrhynchos* (Bonfil & Abdallah, 2004). Naylor *et al*. (2012a) found molecular support for reviving *C. wheeleri* as a separate species while White (2012) stated that its status required further study. The use of *C. amblyrhynchos* is retained here, but with the caveat that the issue is still unresolved and should be investigated to clarify the validity of *C. wheeleri*.

Conservation status: EN (2020).

***Carcharhinus amboinensis* (Müller & Henle, 1839)**

Pigeye Shark

Carcharias (*Prionodon*) *amboinensis* Müller & Henle, 1839: 40, pl. 19 (teeth). Holotype: RMNH D2582 (skin). Type locality: Ambon Island, Indonesia.

Local synonymy: *Carcharhinus zambezensis*: Smith, 1952a: 857, fig. 1, pl.; Smith, 1952e: 6, fig. 1; Smith, 1953: 42, fig. 9. *Carcharhinus leucas*: Davies, 1964: 32, pl. 25 (in part). *Carcharhinus amboinensis*: D'Aubrey, 1964a: 40, pl. 22; Bass *et al*., 1973: 44, fig. 16; Garrick, 1982: 91, fig. 42; Compagno, 1984b: 461, fig.; Bass *et al*., 1986: 70, fig. 9.4; Cliff & Wilson, 1986: 15; Compagno, 1988a: 305; Compagno *et al*., 1989: 64, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 59; Compagno *et al*., 2005: 291, fig., pl. 54; Ebert *et al*., 2013a: 459, fig., pl. 70; NPOA, 2013: 40; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Weigmann, 2016: 854.

South Africa voucher material: SAIAB 6241 [ex ORI 2360], SAIAB 6250 [ex ORI 769], SAIAB 57941, SAIAB 75556.

South African distribution: Algoa Bay (EC) to northern KZN.

Remarks: Although the species can be misidentified with *C. leucas*, it apparently occupies a slightly deeper habitat, from 30–60 m deep, and tends to avoid freshwater systems while *C. leucas* occurs generally in shallower waters (0–30 m) and utilizes rivers and estuaries (Bass *et al.*, 1973).

Conservation status: DD (2009).

***Carcharhinus brachyurus* (Günther, 1870)**

Copper Shark

Carcharias brachyurus Günther, 1870: 369. Neotype: NMNZ P. 2262, female 2420 mm TL, off Wanganui, New Zealand; neotype designation by Garrick (1982); original type material in BMNH are apparently lost, and two Australian embryos referred to by Günther (1870) are actually *C. leucas* (see Garrick, 1982).

Local synonymy: *Carcharinus obscurus*: Barnard, 1925: 25 (misidentified). *Eulamia obscurus*: von Bonde, 1934: 14 (misidentified after Barnard, 1925). *Carcharhinus obscurus*: Bigelow & Schroeder, 1948b: 382, figs. 71–72 (in part, South African records refer to Barnard's 1925 specimen). *Carcharhinus improvisus*: Smith, 1952c: 761, fig. 1 (original description, Algoa Bay); Smith, 1952e: 6, fig. 3; Smith, 1953: 41, pl. 104; Smith, 1963, 364, figs. 1–3. *Carcharhinus ahenea*: Smith, 1962a: 28; D'Aubrey, 1964a: 31, pl. 15. *Carcharhinus limbatus*: Doyle, 1964: 18, pl. *Carcharhinus brachyurus*: Bass *et al*., 1973: 23, fig. 8; Garrick, 1982: 171, figs. 78–81; Compagno, 1984b: 464, fig.; Bass *et al*., 1986: 71, fig. 9.5, pl. 2; Cliff & Wilson, 1986: 21; Compagno, 1988a: 316; Compagno, *et al*., 1989: 62, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 57; Compagno *et al*., 2005: 292, fig., pl. 61; Ebert *et al*., 2013a: 461, fig., pl. 67; Mann, 2013: 31; NPOA, 2013: 40; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Compagno, 2016: 1299; Weigmann, 2016: 854.

South Africa voucher material: SAIAB 6121, SAIAB 6347, SAIAB 10442, SAIAB 10722, SAIAB 12820, SAIAB 13024, SAIAB 14864, SAIAB 27580, SAIAB 30170, SAIAB 44231, SAIAB 201711, SAIAB 202978.

South African distribution: Almost the entire coast from the Orange River (NC) to central KZN.

Remarks: This species has a long checkered nomenclatural history. Barnard (1925) first recorded *C. brachyurus* in South African waters based on a specimen from Table Bay (WC), however, he had misidentified it as *C. obscurus*. The name *C. obscurus* appeared in the literature until Smith (1952b) described a new species, *C. improvisus* from Algoa Bay. Smith (1962a) later recorded this species as *C. ahenea* from False Bay (WC) and considered them different species. D'Aubrey (1964a) considered both *C. ahenea* and *C. improvisus* to be synonymous under the name *C. ahenea*. The specimen originally identified by Barnard (1925) as *C. obscurus* had been stuffed and was on exhibit at SAM when it was examined by Bass *et al*. (1973) who confirmed it as *C. brachyurus* based on the jaws. Garrick (1982) reviewed the various names, including *C. ahenea* and *C. improvisus*, and assigned them all to the same species, *C. brachyurus*.

Conservation status: VU (2020).

***Carcharhinus brevipinna* (Müller & Henle, 1839)**

Spinner Shark

Carcharias brevipinna Müller & Henle, 1839: 31, pl. 9. Holotype: RMNH D2525 (mounted skin), 785 mm TL, Java, Indonesia.

Local synonymy: *Carcharhinus johnsoni*: Smith, 1951: 88, figs. 1–2 (original description, Port Elizabeth, Eastern Cape Province); Smith, 1952b: 857; Smith, 1952c: 760; Smith, 1952e: 22, fig. 3; Smith, 1953: 41, pl. 104; Smith & Smith, 1966: 20, fig. 5a. *Carcharnidus johnsoni*: Smith, 1958c: 17. *Carcharhinus maculipinnis*: Davies, 1963: 24; Davies, 1964: 34. *Carcharhinus maculipinnis*: D'Aubrey, 1964a: 44, pl. 25; Davies & Joubert, 1966: 3, fig. 2; Davies & Joubert, 1967: 115, fig. 7–2; Garrick, 1967: 88. *Carcharhinus brevipinna*: Bass *et al.*, 1973: 26, fig. 9; Compagno, 1984b: 466, fig.; Bass *et al*., 1986: 71, fig. 9.6, pl. 2; Cliff & Wilson, 1986: 19; Compagno, 1988a: 315; Compagno *et al.*, 1989: 66, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 58; Compagno *et al*., 2005: 293, fig., pl. 57; Ebert *et al.*, 2013a: 462, fig., pl. 66; NPOA, 2013: 40; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Compagno, 2016: 1301; Weigmann, 2016: 855.

South Africa voucher material: SAIAB [former RUSI] 422 (Holotype of *C. johnsoni*), SAIAB [former ORI] 430 (Paratype of *C. johnsoni*). SAIAB [former RUSI] 427, SAIAB 6169 [ex ORI 2024], SAIAB 6170 [ex ORI 1009], SAIAB 6171 [ex ORI 957], SAIAB 6172 [ex ORI 1926], SAIAB 12992, SAIAB 25351, SAIAB 26878, SAIAB 201700.

South African distribution: Mossel Bay (WC) to KZN border with Mozambique.

Remarks: Smith (1951) described this shark as a new species (*C. johnsoni*) from South Africa noting that it was similar to the western North Atlantic *C. maculipinnis*, but considered them to be different species. D'Aubrey (1964a) considered it as a junior synonym of *C. maculipinnis*, but Bass *et al*. (1973) reviewed the issue and concluded that these various names were all synonymous with *C. brevipinna*.

Conservation status: VU (2020).

***Carcharhinus falciformis* (Müller & Henle, 1839)**

Silky Shark

Carcharias (*Prionodon*) *falciformis* Bibron *in* Müller & Henle, 1839: 47. Holotype: MNHN 0000-1134. Type locality: Cuba, Western Atlantic.

Local synonymy: *Carcharhinus falciformis*: D'Aubrey, 1964a: 34, pl. 17; Bass *et al.*, 1973: 29, fig. 11; Garrick, 1982: 159, figs. 73–74; Compagno, 1984b: 470, fig.; Bass *et al*., 1986: 72, fig. 9.7; Compagno, 1988a: 7; Compagno *et al.*, 1989: 70, pl.; Compagno, 1999: 120; Compagno *et al*., 2005: 295, fig., pl. 51; Ebert *et al.*, 2013: 464, fig., pl. 62; NPOA, 2013: 41; Ebert & Dando, 2014: 35, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Compagno, 2016: 1303; Weigmann, 2016: 855.

South Africa voucher material: SAIAB 202926.

South African distribution: Central KZN to the border with Mozambique.

Remarks: A common offshore, pelagic species in warm temperate to tropical seas, *C. falciformis* was not recorded in the area until the 1960s when D'Aubrey (1964a) reported it from off Durban. It is frequently misidentified with *C. obscurus*.

Conservation status: VU (2017).

***Carcharhinus humani* White & Weigmann, 2014**

Human's Whaler Shark

Carcharhinus humani White & Weigmann, 2014: 72, figs. 1–6. Holotype: ZMH 26030. Type locality: Off Socotra Islands, 12°04'48"S, 53°12'36"W–12°09'12"S, 53°10'06"W.

Local synonymy: *Carcharhinus dussumieri*: Smith, 1952e: 22, fig. 3; Smith, 1952b: 858; Smith, 1965: 42, fig. 8. *Carcharhinus menisorrah*: Smith, 1961b: 29. *Carcharhinus tjutjot*: D'Aubrey, 1964a: 41, pl. 23; Davies & Joubert, 1966: 15; Davies & Joubert, 1967: 121; Garrick, 1967: 8. *Carcharhinus sealei*: Bass *et al*., 1973: 70, fig. 28, pl.14; Garrick, 1982: 48, fig. 24; Compagno, 1984b: 497, fig.; Bass *et al*., 1986: 76, fig. 9, pl. 9.16; Compagno, 1988a: 327; Compagno *et al*., 1989: 68, pl.; Compagno, 1999: 120; Compagno *et al*., 2005: 305, fig., pl. 60; Ebert & van Hees, 2015: 146. *Carcharhinus humani*: White & Weigmann, 2014: 72, figs. 1–6; Weigmann, 2016: 856.

South Africa voucher material: Paratype: ANSP 25838. Non-types: SAIAB [ex ORI 914] 6117, SAIAB [ex ORI E4] 6218, SAIAB 8021, SAIAB 10738, SAIAB 13023, SAIAB 201701.

South African distribution: Port Shepstone and north to the KZN border with Mozambique; south of Port Shepstone there are unconfirmed reports.

Remarks: White & Weigmann (2014) revised the *dussumieri-sealei* group and described *C. humani* as a new species. Previous accounts of this species in South African and WIO literature appeared as *C. tjutjot* and more recently the name *C. sealei* is used, but neither species occur in the WIO.

Conservation status: DD (2019).

***Carcharhinus leucas* (Müller & Henle, 1839)**

Zambezi Shark or Bull Shark

Carcharias (*Prionodon*) *leucas* Valenciennes *in* Müller & Henle, 1839: 42. Syntypes (4): only 2 stuffed syntypes still in existence; MNHN A-9650, MNHN A-9652. Type locality: Antilles, Western Atlantic.

Local synonymy: *Carcharhinus melanopterus*: Robinson & Dunn, 1923: 63. *Eulamnia lamia* Smith, 1949a: 42, fig. 9. *Carcharinus zambesensis*: Smith, 1952f: 13, pl. Davies, 1963: 18, fig. 5. *Carcharhinus vanrooyeni*: Smith, 1958a: 12, pls. (original description, South Africa); Smith, 1961a: 565, pl. 108; Smith, 1962b: 27, pl.; Smith, 1963: 364, figs. 1, 4, 6. *Carcharhinus leucas*: D'Aubrey, 1964a: 39, pl. 21; Davies, 1964: 32, fig. 15, pls. 11, 21, 25–26, 39, 45–46 (in part: pl. 25 is *C. amboinensis*); Davies & Joubert, 1966: 6; Davies & Joubert, 1967: 115; Garrick, 1967: 89; Bass *et al.*, 1973: 37, fig. 13; Garrick, 1982: 81, figs. 40–41; Compagno, 1984b: 378, fig.; Bass *et al*., 1986: 73, fig. 9.9, pl. 2; Cliff & Wilson, 1986: 14; Compagno, 1988a: 6; Compagno *et al*., 1989: 64, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 59; Compagno *et al*., 2005: 299, fig., pl. 50; Ebert *et al.*, 2013a: 468, fig., pl. 61; Mann, 2013: 33; NPOA, 2013: 41; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Weigmann, 2016: 857.

South Africa voucher material: SAIAB 6176, SAIAB 6177, SAIAB 13022, SAIAB 21214, SAIAB 75557, SAIAB 99094, SAIAB 99095, SAIAB 99096, SAIAB 200666, SAIAB 200667, SAIAB 200668, SAIAB 200669, SAIAB 201699.

South African distribution: Breede River (WC) to the KZN border with Mozambique.

Remarks: This species is known to utilize freshwater rivers systems in KZN and seasonally during the summer months migrates to the Breede River (WC) where it also moves into the river. This species is one of the three most dangerous sharks in South Africa along with *C. carcharias* and *G. cuvier*.

Conservation status: NT (2009).

***Carcharhinus limbatus* (Müller & Henle, 1839)**

Common Blacktip Shark

Carcharias (*Prionodon*) *limbatus* Valenciennes *in* Müller & Henle, 1839: 49, pl. 19 (teeth). Syntypes (2): only 1 syntype still in existence; MNHN 0000-3468 (mounted skin). Type locality: Martinique, Lesser Antilles, Western Atlantic.

Local synonymy: *Carcharinus limbatus*: Robinson & Dunn, 1923: 63; Barnard, 1925: 26; Smith, 1952b: 858; Smith, 1952c: 760; Smith, 1953e: 6, fig. 3; Smith, 1953: 40, pl. 104; Davies, 1963: 24; Davies, 1964: 194, pls. 19–20, 43, 59. (?) *Eulamia limbatus*: von Bonde, 1934: 14. *Galeolamna limbata*: Fowler, 1956: 23, fig. 9. *Carcharhinus limbatus*: D'Aubrey, 1964a: 42, pl. 24; Smith, 1965: 40, fig. 5; Davies & Joubert, 1966: 15;

Davies & Joubert, 1967: 121; Garrick, 1967: 89; Bass *et al*., 1973: 46, fig. 17; Garrick, 1982: 28, figs. 16–18; Compagno, 1984b: 481, fig.; Bass *et al*., 1986: 73, fig. 9.10, pl. 2; Cliff & Wilson, 1986: 18; Compagno, 1988a: 7; Compagno *et al*., 1989: 66, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 58; Compagno *et al*., 2005: 300, fig., pl. 57; Ebert *et al*., 2013a: 469, fig., pl. 66; Mann, 2013: 35; NPOA, 2013: 41; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Weigmann, 2016: 857. (non) *Eulamia limbatus*: Fowler, 1935: 362 (= *C. humani*). (non) *Eulamia limbata*: Smith, 1949a: 40, fig. 5 (= *C. obscurus*). (non) *Carcharhinus limbatus*: Doyle, 1964: 18, pl. (= *C. brachyurus*).

South Africa voucher material: SAIAB 6165 [ex ORI 2388], SAIAB 6166 [ex ORI 1079], SAIAB 6220 [ex ORI 1996], SAIAB 10563, SAIAB 75558, SAIAB 75559, SAIAB 75560, SAIAB 75561.

South African distribution: East London (EC) to the KZN border with Mozambique, and rarely to Cape Point (WC). There is a record of this species from the "vicinity" of Cape Town in December 1961 (Bass *et al*., 1973).

Remarks: A very common inshore species in KZN waters. The taxonomic history is convoluted due to misidentification with other "blacktip" shark species in the area, particularly *C. brevipinna*, young *C. obscurus*, and *C. sorrah*.

Conservation status: NT (2009).

***Carcharhinus longimanus* (Poey, 1861)**

Oceanic Whitetip Shark

Squalus longimanus Poey, 1861: 338, pl. 19 (figs. 9, 10). No type known. Type locality: Cuba, Western Atlantic.

Local synonymy: *Carcharias* (*Prionodon*) *lamia*: Lampe, 1914: 213, fig. 1. *Pterolamiops magnipinnis*: Smith, 1958b: 131, fig. 1c, pl. 1 (original description, Port Elizabeth); Smith, 1958c: 16; Smith, 1961a: 565, pl. 108. *Pterolamiops magripinnis*: Smith, 1961b: 20, pl. *Carcharhinus longimanus:* D'Aubrey, 1964a: 28, pl. 12; Davies, 1964: 184, pl. 7; Bass *et al.*, 1973: 49, fig. 19; Compagno, 1984b: 484, fig.; Bass *et al*., 1986: 74, fig. 9.11; Compagno, 1988a: 7; Compagno *et al*., 1989: 70, pl.; Compagno, 1999: 120; Compagno *et al*., 2005: 300, fig., pl. 50; Ebert *et al.*, 2013a: 470, fig., pl. 61; NPOA, 2013: 42; Ebert & Dando, 2014: 39, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Compagno, 2016: 1311; Weigmann, 2016: 858.

South Africa voucher material: SAIAB 6045 [ex ORI 415d], SAIAB 6291 [ex ORI 2690], SAIAB 39375 [ex ORI 5715], SAIAB 202985.

South African distribution: South of Cape Point (WC) to the KZN border with Mozambique.

Remarks: *Carcharhinus longimanus* exhibits distinct ontogenetic changes with growth, which led earlier researchers to describe new species regionally. Smith (1958b) described *C. magnipinnis* from a small female of 135 cm TL from Algoa Bay (EC) based on growth differences between it and a larger (~200–250 cm TL) individual without realizing these differences were growth-related. The species was quite common offshore in KZN, but also appears to move to the west to off Cape Point (WC), including small juveniles. A small juvenile (~120 cm TL) was caught off Cape Point (D.A. Ebert, unpubl. data).

Conservation status: CR (2019).

***Carcharhinus melanopterus* (Quoy & Gaimard, 1824)**

Blacktip Reef Shark

Carcharias melanopterus Quoy & Gaimard, 1824: 194, pl. 43 (figs. 1, 2). Lectotype: MNHN 0000-1129; lectotype designation by Eschmeyer (1998). Type locality: Pulau Waigeo, West Papua, Indonesia.

Local synonymy: The synonymy for this species in South African waters is long and convoluted, and most of the "black-tipped" sharks are of other *Carcharhinus* species. A discussion of the issue is presented below in the Remarks section.

South Africa voucher material: None.

South African distribution: Possibly northern KZN, but unconfirmed in South African waters.

Remarks: *Carcharhinus melanopterus* has a checkered history of uncertainty as to whether it occurs in South African waters. The first record of this species was based on a specimen provided by Andrew Smith to the [British] Natural History Museum (probably around 1839) with the exact locality uncertain since the only information given was labelled "Cape Seas". Subsequent authors listed it as occurring in South African waters, but the name "black-tipped" shark is used indiscriminately for several species of black or dusky fin tipped sharks. References to this species occurring in KZN or Cape waters can usually be traced back to either Gray

(1851) or Günther (1870) who both cited Andrew Smith's specimen at the Natural History Museum (Bass *et al*., 1973). According to Bass *et al*. (1973), Andrew Smith's specimen was still in existence and they were able to confirm its identification. However, Bass *et al*. (1973) commented that there were no records of this species from East Africa south of 22°S. The species does occur in southern Mozambique and it would not be unexpected if it ranged into the northern most area of KZN, but we could not verify any confirmed records or sightings of this species in South African waters. We include this species here since it has been widely listed as occurring in KZN with the hope that if it does occur here it will be confirmed.

Conservation status: VU (2020).

***Carcharhinus obscurus* (Lesueur, 1818)**

Dusky Shark

Squalus obscurus Lesueur, 1818: 223, pl. 9. No types known. Type locality: east coast of U.S.A., no specific location given.

Local synonymy: *Eulamnia obscura*: Smith, 1949a: 41, fig. 6; Smith, 1965: 41, fig. 6. *Carcharinus obscurus*: Smith, 1951: 92; Smith, 1952b: 859; Smith, 1952c: 760; Smith, 1952e: 6, fig. 3; Smith, 1953: 41, fig. 6; Davies, 1962: 25; Davies & Campbell, 1962: 9; Davies, 1964: 34, figs. 8, 12, pl. 47. *Carcharhinus obscurus*: Smith, 1963: 363; D'Aubrey, 1964a: 32, pl. 16; Franken, 1966: 22, fig.; Smith & Smith, 1966: 19, fig. 6; Garrick, 1967: 87; Davies & Joubert, 1966: 3, figs. 1–3, pl. 6; Davies & Joubert, 1967: 113, figs. 7–2, 7–3, pl. 7–5; Bass *et al*., 1973: 58, fig. 21; Garrick, 1982: 120, figs. 55–56; Compagno, 1984b: 491, fig.; Bass *et al*., 1986: 75, fig. 9.14, pl. 2; Cliff & Wilson, 1986: 16; Compagno, 1988a: 7; Compagno *et al*., 1989: 62; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 59; Compagno *et al*., 2005: 302, fig., pl. 58; Ebert *et al.*, 2013a: 472, fig., pl. 65; Ebert & Dando, 2014: 41, fig.; Mann, 2013: 37; NPOA, 2013: da Silva *et al*., 2015: 246; 42; Ebert & van Hees, 2015: 146; Compagno, 2016: 1313; Weigmann, 2016: 858. (*non*) *Carcharinus obscurus*: Barnard, 1925: 25 (misidentification, record based on *C. brachyurus*, SAM 17753). (*non*) *Eulamia obscurus*: von Bonde, 1934: 14 (refers to Barnard's (1925) specimen of *C. brachyurus*).

South Africa voucher material: SAIAB 6164, SAIAB 6167, SAIAB 6168, SAIAB 13021, SAIAB 51224, SAIAB 75563, SAIAB 75564, SAIAB 75565, SAIAB 201710, SAIAB 202976.

South African distribution: False Bay (WC) to the KZN border with Mozambique.

Remarks: The first record of this species from South African waters is often attributed to Barnard (1925), but that specimen (SAM 17753) is actually a *C. brachyurus* that was caught in Table Bay (Bass *et al*., 1973).

Conservation status: EN (2019).

***Carcharhinus plumbeus* (Nardo, 1827)**

Sandbar Shark

Squalus plumbeus Nardo, 1827: 26, 35 (no. 24). No types known. Type locality: Adriatic Sea.

Local synonymy: *Carcharhinus milberti*: D'Aubrey, 1964a: 30, pl. 14; Davies, 1964: 194; Garrick, 1967: 89. *Carcharhinus plumbeus*: Bass *et al.*, 1973: 65, fig. 26; Garrick, 1982: 132, figs. 60–62; Compagno, 1984b: 493, fig.; Bass *et al*., 1986: 76, fig. 9.15; Cliff & Wilson, 1986: 17; Compagno, 1988a: 7; Compagno *et al*., 1989: 62, pl.; Compagno, 1999: 120, Heemstra & Heemstra, 2004: 60; Compagno *et al*., 2005: 304, fig., pl. 58; Ebert *et al.*, 2013a: 473, fig., pl. 65; Ebert & Dando, 2014: 43, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Compagno, 2016: 1296; Weigmann, 2016: 858.

South Africa voucher material: SAIAB 6085, SAIAB 6086, SAIAB 6088, SAIAB 6235, SAIAB 19822, SAIAB 99188, SAIAB 201702.

South African distribution: Algoa Bay (EC) to the KZN border with Mozambique.

Remarks: A common species in KZN and to the north, but a seasonal visitor to eastern Cape during the summer.

Conservation status: VU (2009).

***Carcharhinus sorrah* (Müller & Henle, 1839)**

Spottail Shark

Carcharias (*Prionodon*) *sorrah* Valenciennes *in* Müller & Henle, 1839: 45, pl. 16. Lectotype: RMNH 4294, Type locality: Java, Indonesia.

Local synonymy: *Carcharhinus sorrah*: Bass *et al.*, 1973: 72, fig. 29; Garrick, 1982: 165, figs. 75–77; Compagno,

1984b: 500, fig.; Bass *et al*., 1986: 77, fig. 9.17; Compagno, 1988a: 291; Compagno *et al.*, 1989: 68, pl.; Compagno *et al*., 2005: 306, fig., pl. 59; Ebert *et al.*, 2013a: 475, fig., pl. 72; Ebert & van Hees, 2015: 146; Weigmann, 2016: 859.

South Africa voucher material: None.

South African distribution: Northern KZN.

Remarks: Common in parts of its wide Indo-West Pacific range, but rare in East Africa with only a couple records from Sodwana Bay and northern KZN.

Conservation status: NT (2009).

Genus *Loxodon* Müller & Henle, 1838a

Sliteye Sharks

Loxodon Müller & Henle, 1838a: 36. Type species: *Loxodon macrorhinus* Müller & Henle, 1839, by subsequent monotypy; appeared first with no included species.

***Loxodon macrorhinus* (Müller & Henle, 1839)**

Sliteye Shark

Loxodon macrorhinus Müller & Henle, 1839: 61, pl. 25. Holotype: ZMB 4479. Type locality: unknown (probably Indian Ocean).

Local synonymy: *Loxodon macrorhinus*: Bass *et al*., 1975b: 37, fig. 22; Compagno, 1984b: 514, fig.; Bass *et al*., 1986: 80, fig. 9.25; Compagno, 1988a: 16; Compagno *et al*., 1989: 68, pl.; Compagno, 1999: 120; Compagno *et al*., 2005: 314, fig., pl. 60; Ebert *et al.*, 2013a: 492, fig., pl. 73; Ebert & van Hees, 2015: 146; Weigmann, 2016: 861.

South Africa voucher material: SAIAB 6178, SAIAB 6202, SAIAB 6211.

South African distribution: Northern KZN.

Remarks: A small coastal tropical species with a wide Indo-West Pacific range but occurring locally only in northern KZN.

Conservation status: LC (2003).

Genus *Negaprion* Whitley, 1940

Lemon Sharks

Negaprion Whitley, 1940: 111. Type species: *Aprionodon acutidens queenslandicus* Whitley, 1939b, by original designation, a junior synonym of *Negaprion acutidens* (Rüppell, 1837).

***Negaprion acutidens* (Rüppell, 1837)**

Sicklefin Lemon Shark

Carcharias acutidens Rüppell, 1837: 65, pl. 18 (fig. 3). Lectotype: SMF 2825 (stuffed); lectotype designation by Klausewitz (1960). Type locality: Jeddah, Saudi Arabia, Red Sea.

Local synonymy: *Negaprion acutidens*: Smith, 1959: 16, pl.; D'Aubrey, 1964a: 23, pl. 9; Bass *et al*., 1975b: 27, fig. 17; Compagno, 1984b: 517, fig.; Bass *et al*., 1986: 83, fig. 9.29; Cliff & Wilson, 1986: 22; Compagno, 1988a: 35; Compagno *et al.*, 1989: 64, pl.; Compagno, 1999: 120; Compagno *et al*., 2005: 315, fig., pl. 53; Ebert *et al.*, 2013a: 493, fig., pl. 64; Ebert & van Hees, 2015: 146; Weigmann, 2016: 861.

South Africa voucher material: SAIAB 6264, SAIAB 6924.

South African distribution: Northern KZN.

Remarks: This shark has been referred to locally as the Kosi Bay Shark (Smith, 1959; D'Aubrey, 1964a). Despite a wide Indo-West Pacific range, it occurs locally only in northern KZN.

Conservation status: VU (2003).

Genus *Prionace* Cantor, 1849

Blue Sharks

Prionace Cantor, 1849: 1381. Type species: *Squalus glaucus* Linnaeus, 1758, designated by the ICZN (on official list, Opinion 723.3d, 1965, name no. 1660).

***Prionace glauca* (Linnaeus, 1758)**

Blue Shark

Squalus glaucus Linnaeus, 1758: 235. No types known. Type locality: northeastern Atlantic (localities include England and Italy).

Local synonymy: *Carcharias* (*Prionodon*) *glaucus*: Lampe, 1914: 213. *Carcharhinus glaucus*: Barnard, 1925: 26; Barnard, 1947: 9. *Glyphis glaucus*: Fowler, 1936: 54, fig. 13; Fowler, 1941: 178; Smith, 1949a: 42, fig. 10; D'Aubrey, 1964a: 24, pl. 10; Smith, 1965: 42, fig. 10. *Eulamia glaucus*: von Bonde, 1934: 14. *Prionace glauca*: Bigelow & Schroeder, 1948b: 282; D'Aubrey, 1964a: 24, pl. 10; Bass *et al.*, 1975b: 32, fig. 20, pl. 6; Compagno, 1984b: 521, fig.; Bass *et al*., 1986: 84, fig. 9.32, pl. 1; Compagno, 1988a: 349; Compagno *et al.*, 1989: 70, pl.; Compagno *et al.*, 1991: 88; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 61; Compagno *et al*., 2005: 316, fig., pl. 51; Ebert *et al.*, 2013a: 495, fig., pl. 62; Mann, 2013: 42; NPOA, 2013: 43; Ebert & Dando, 2014: 27, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Compagno, 2016: 1323; Weigmann, 2016: 861.

South Africa voucher material: SAIAB 6123 [ex ORI 1722], SAIAB 25716, SAIAB 27167, SAIAB 44228, SAIAB 46921, SAIAB 51222.

South African distribution: Entire coastline from the Orange River (NC) to the KZN border with Mozambique.

Remarks: *Prionace glauca* has one of the widest known ranges of any cartilaginous fish and occurs in all temperate and most subtropical seas. Off the west coast, it is quite abundant and appears to migrate around the south Atlantic between the African and South American continents depending on the size, sex, and life stage (da Silva *et al*., 2010).

Conservation status: NT (2019).

Genus *Rhizoprionodon* Whitley, 1929

Sharpnose Sharks

Rhizoprionodon Whitley, 1929: 354; a replacement name for *Rhizoprion* Ogilby, 1915, preoccupied by *Rhizoprion* Jourdan, 1861 in mammals. Type species: *Carcharias* (*Scoliodon*) *crenidens* Klunzinger, 1880, by original designation, a junior synonym of *Carcharias acutus* Rüppell, 1837.

***Rhizoprionodon acutus* (Rüppell, 1837)**

Milk Shark

Carcharias acutus Rüppell, 1837: 65, pl. 18 (fig. 4). Lectotype: SMF 2783 (stuffed). Type locality: Jeddah, Saudi Arabia, Red Sea.

Local synonymy: *Carcharinus acutus*: Thompson, 1914: 139; Barnard, 1925: 24. *Carcharinus walbeehmi*: Barnard, 1925: 24, fig. 2, pl. 1. *Scoliodon walbeehmi*: Smith, 1949a: 43, fig. 12; Smith, 1965: 43, fig. 12. *Scoliodon palasorrah*: Smith, 1949a: 43. *Rhizoprionodon acutus*: D'Aubrey, 1964a: 25, pl. 11; Davies & Joubert, 1966: 11; Davies & Joubert, 1967: 118; Compagno, 1984b: 525, fig.; Bass *et al.*, 1975b: 39, fig. 23; Bass *et al*., 1986: 85, fig. 9.33; Cliff & Wilson, 1986: 24; Compagno, 1988a: 16; Compagno *et al*., 1989: 68, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 62; Compagno *et al*., 2005: 317, fig., pl. 56; Ebert *et al.*, 2013a: 499, fig., pl. 70; Mann, 2013: 44; NPOA, 2013: 43; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Weigmann, 2016: 861.

South Africa voucher material: SAIAB 6087, SAIAB 6173, SAIAB 6174, SAIAB 6240, SAIAB 6272, SAIAB 6273, SAIAB 6274, SAIAB 6275, SAIAB 6276, SAIAB 14341, SAIAB 18174.

South African distribution: Algoa Bay (EC) to the northern KZN border with Mozambique.

Remarks: New range extension for South Africa. Most accounts of this species in South African waters list it as occurring from KZN to Mozambique, but a voucher specimen in the SAIAB collection was collected in Algoa Bay extending its previous known range by nearly 1,000 km.

Conservation status: VU (2020).

Genus *Triaenodon* Müller & Henle, 1837a

Whitetip Reef Shark

Triaenodon Müller & Henle, 1837a: 113. Type species: *Carcharias obesus* Rüppell, 1837, by subsequent monotypy; appeared first without species then added by Bonaparte (1838).

***Triaenodon obesus* (Rüppell, 1837)**

Whitetip Reef Shark

Carcharias obesus Rüppell, 1837: 64, pl. 18 (fig. 2). Lectotype: SMF 3149 (stuffed); lectotype designation by Klausewitz (1960). Type locality: Jeddah, Saudi Arabia, Red Sea.

Local synonymy: *Triaenodon obesus*: Smith, 1953: 511, fig. 13a; Bass *et al.*, 1975b: 24, fig. 16; Compagno, 1984b: 536, fig.; Bass *et al*., 1986: 86, fig. 9.35; Compagno, 1988a: 7; Compagno *et al.*, 1989: 64, pl.; Compagno, 1999: 120; Compagno *et al*., 2005: 321, fig., pl. 53; Ebert *et al.*, 2013a: 500, fig., pl. 64; Ebert & van Hees, 2015: 146; Weigmann, 2016: 863.

South Africa voucher material: SAIAB 6269.

South African distribution: Northern KZN.

Remarks: A wide-ranging tropical inshore species of the Indian and Pacific oceans that occasionally occurs in waters of northern KZN.

Conservation status: VU (2020).

Family Galeocerdidae Poey, 1875

Tiger Sharks

Genus *Galeocerdo* Müller & Henle, 1837a

Tiger Sharks

Galeocerdo Müller & Henle, 1837a: 115. Type species: *Squalus arcticus* Faber, 1829, by subsequent designation in Bonaparte (1838).

***Galeocerdo cuvier* (Péron & Lesueur *in* Lesueur, 1822)**

Tiger Shark

Squalus cuvier Péron & Lesueur *in* Lesueur, 1822: 351. No types known. Type locality: northwestern Australia.

Local synonymy: *Galeocerdo arcticus*: Barnard, 1925: 27. *Galeocerdo cuvier*: Smith, 1949a: 44, pl. 1.; Smith, 1965: 44, pl. 1; Compagno, 1984b: 503, fig.; Bass *et al*., 1986: 78, fig. 9.19, pl. 2; Cliff & Wilson, 1986: 12; Compagno, 1988a: 7; Compagno *et al.*, 1989: 60, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 60; Compagno *et al*., 2005: 308, fig., pl. 50; Ebert *et al.*, 2013a: 477, fig., pl. 61; Mann, 2013: 40; NPOA, 2013: 43; Ebert & Dando, 2014: 25, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 146; Weigmann, 2016: 859. *Galeocerdo cuvieri*: D'Aubrey, 1964a: 19, pl. 6; Bass *et al.*, 1975b: 35, fig. 21.

South Africa voucher material: SAIAB 1505, SAIAB 6256, SAIAB 13191, SAIAB 16729, SAIAB 19429.

South African distribution: Cape St. Francis (EC) to the KZN border with Mozambique.

Remarks: *Galeocerdo cuvier* previously had been placed in the family Carcharhinidae but the species has a number of distinct morphological characteristics, including very long upper labial furrows reaching to eye level, strong keels on caudal peduncle, an obvious spiracle, and a yolk-sac viviparous reproductive mode, which clearly separates it from that family. Molecular research supports its assignment into its own family (White *et al*., 2018; G.J.P. Naylor, unpubl. data). The species was first reported in South African waters (as *G. rayneri*) by Robinson (1920, *Natal Fisheries Report for 1919*, p. 50) and was quoted by Barnard (1925), stating that large specimens of this shark are caught with handlines off Durban's North Pier.

Conservation status: NT (2019).

Family Sphrynidae Gill, 1872

Hammerhead Sharks

Genus *Sphyrna* Rafinesque, 1810a

Hammerhead Sharks

Sphyrna Rafinesque, 1810a: 60. Type species: *Squalus zygaena* Linnaeus, 1758, by subsequent designation (Bonaparte, 1838).

***Sphyrna lewini* (Griffith & Smith, 1834)**

Scalloped Hammerhead

Zygaena lewini Griffith & Smith, 1834: 640, pl. 50. No types known. Type locality: south coast of Australia [New Holland].

Local synonymy: *Sphyrna lewini*: D'Aubrey, 1964a: 46, pl. 27; Gilbert, 1967: 37, figs. 10, 21d, pl. 3, 6b, 9b, 10b (revision of family); Bass *et al*., 1975b: 42, fig. 24; Compagno, 1984b: 545, fig.; Bass, 1986: 97, fig. 13.1, pl. 2; Cliff & Wilson, 1986: 27; Compagno, 1988a: 35; Compagno *et al.*, 1989: 72, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 68; Compagno *et al*., 2005: 323, fig., pl. 64; Ebert *et al*., 2013a: 504, fig., pl. 75; Mann, 2013: 283; NPOA, 2013: 48; Ebert & Dando, 2014: 15, fig.; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 146; Compagno, 2016: 1331; Weigmann, 2016: 881.

South Africa voucher material: SAIAB 6111, SAIAB 6112 [ex ORI 1545], SAIAB 6114 [ex ORI 1544], SAIAB 201709.

South African distribution: Port St. John's (EC) to the KZN border with Mozambique.

Remarks: The most common hammerhead on the east coast of South Africa. It forms large aggregations at times, especially during the fall and summer months. The Thukela Bank (KZN) appears to be a nursery ground (Fennessy, 1994; de Bruyn *et al*., 2005) as does the Port St. Johns area on the Transkei coast (EC).

Conservation status: CR (2019).

***Sphyrna mokarran* (Rüppell, 1837)**

Great Hammerhead

Zygaena mokarran Rüppell, 1837: 66, pl. 17 (fig. 3). Lectotype: SMF 3590 (stuffed); lectotype designation by Klausewitz (1960). Type locality: Massawa, Eritrea, Red Sea.

Local synonymy: *Sphyrna mokarran*: D'Aubrey, 1964a: 47, pl. 28; Gilbert, 1967: 25, figs. 6, 7, 21b, 22b, pl. 2, 6a (revision of family); Bass *et al.*, 1975b: 44, fig. 25; Compagno, 1984b: 548, fig.; Bass, 1986: 97, fig. 13.2; Cliff & Wilson, 1986: 26; Compagno, 1988a: 35; Compagno *et al*., 1989: 72, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 68; Compagno *et al*., 2005: 324, fig., pl. 64; Ebert *et al*., 2013a: 504, fig., pl. 75; NPOA, 2013: 48; Ebert & Dando, 2014: 17, fig.; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 146; Compagno, 2016: 1333; Weigmann, 2016: 881.

South Africa voucher material: SAIAB 6268 [ex ORI2610], SAIAB 7010 [ex ORI 196], SAIAB 7011 [ex ORI 825], SAIAB 7012 [ex ORI 965], SAIAB 7013 [ex ORI 1296], SAIAB 99328, SAIAB 99329.

South African distribution: Port Shepstone to the KZN border with Mozambique.

Remarks: The least common of the hammerhead shark species occurring in South African waters, it is most common during the warmer months (Bass *et al*., 1975b).

Conservation status: CR (2019).

***Sphyrna zygaena* (Linnaeus, 1758)**

Smooth Hammerhead

Squalus zygaena Linnaeus, 1758: 234. Syntype: NRM LP 88, male embryo 215 mm (see Fernholm & Wheeler, 1983). Type locality: Mediterranean Sea and Atlantic (inc. Spain, France, Italy, Greece, Syria).

Local synonymy: *Sphyrna malleus*: Thompson, 1914: 143. *Sphyrna zygaena*: Barnard, 1925: 32; Smith, 1949a: 46, fig. 21; D'Aubrey, 1964a: 45, pl. 26; Smith, 1965: 46, fig. 21; Gilbert, 1967: 31, fig. 8; Bass *et al.*, 1975b: 45, fig. 26; Bass, 1986: 97, fig. 13.3, pl. 2; Compagno, 1984b: 553, fig.; Cliff & Wilson, 1986: 28; Compagno, 1988a: 35; Compagno *et al*., 1989: 72, pl.; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 68; Compagno *et al*., 2005: 326, fig., pl. 64; Ebert *et al*., 2013a: 504, fig., pl. 75; Mann, 2013: 285; NPOA, 2013: 48; Ebert & Dando, 2014: 19, fig.; da Silva *et al*., 2015: 248; Ebert & van Hees, 2015: 146; Compagno, 2016: 1335; Weigmann, 2016: 881.

South Africa voucher material: SAIAB 6115, SAIAB 7014, SAIAB 7015, SAIAB 7016, SAIAB 7017, SAIAB 7018, SAIAB 7019, SAIAB 7020, SAIAB 7021, SAIAB 7022, SAIAB 7023, SAIAB 7024, SAIAB 7025, SAIAB 7026, SAIAB 7027, SAIAB 7028, SAIAB 7029, SAIAB 7030, SAIAB 7031, SAIAB 7032, SAIAB 7033, SAIAB 7034, SAIAB 7035, SAIAB 7036, SAIAB 7037, SAIAB 7038, SAIAB 7039, SAIAB 7040, SAIAB 7041, SAIAB 7042, SAIAB 7043, SAIAB 7044, SAIAB 7045, SAIAB 7046, SAIAB 7047, SAIAB 7048, SAIAB 7049, SAIAB 7050, SAIAB 7051, SAIAB 7052, SAIAB 7053, SAIAB 11961, SAIAB 13003, SAIAB 13004, SAIAB 13005, SAIAB 13133, SAIAB 26446, SAIAB 26641, SAIAB 51214, SAIAB 51215,

SAIAB 75566, SAIAB 75567, SAIAB 75568, SAIAB 189174, SAIAB 200675, SAIAB 201703, SAIAB 202977, SAIAB 203735.

South African distribution: St. Helena Bay (WC) to the KZN border with Mozambique.

Remarks: This hammerhead shark species is found mostly in cool to temperate waters and is most common in southern and western Cape waters where it seasonally forms large aggregations.

Conservation status: VU (2019).

Order Torpediniformes

Family Narkidae Fowler, 1934a

Sleeper Rays

Genus *Electrolux* Compagno & Heemstra, 2007

Ornate Sleeper Rays

Electrolux Compagno & Heemstra, 2007: 18. Type species: *Electrolux addisoni* Compagno & Heemstra, 2007, type by original designation (also monotypic).

Electrolux addisoni Compagno & Heemstra, 2007

Ornate Sleeper Ray

Electrolux addisoni Compagno & Heemstra, 2007: 22, fig. 1. Holotype: SAIAB 78777. Type locality: On reef off Manaba Beach, near Margate, southern KwaZulu-Natal, 30°51.4'S, 30°23.1'E, South Africa.

Local synonymy: *Heteronarce* sp. nov.: Compagno, 1999: 116. *Electrolux addisoni*: Compagno & Heemstra, 2007: 22, fig. 1; Ebert & van Hees, 2015: 146; de Carvalho, 2016: 173, fig. 16.1; Weigmann, 2016: 912.

South Africa voucher material: Holotype: SAIAB 78777. Paratype: SAM 36908.

South African distribution: Endemic. Presently known off the KZN coast from Tee Barge to Coffee Bay (EC) (Compagno & Heemstra, 2007).

Remarks: This relatively new genus and species has been known for years by divers along the KZN coast, but was not described until 2007. The known distribution of the species is only within a 310 km stretch of coastline and inside the 50 m isobath (Compagno & Heemstra, 2007).

Conservation status: LC (2019).

Genus *Heteronarce* Regan, 1921

Soft Sleeper Rays

Heteronarce Regan, 1921: 414. Type species: *Heteronarce garmani* Regan, 1921, type by subsequent designation.

Heteronarce garmani Regan, 1921

Natal Electric Ray

Heteronarce garmani Regan, 1921: 414. Holotype (unique): BMNH 1921.3.1.3. Type locality: 15–20 miles off Umvoti River, KwaZulu-Natal, South Africa.

Local synonymy: *Heteronarce garmani*: Regan, 1921: 414; Gilchrist, 1922b: 50; von Bonde & Swart, 1923: 14; Barnard, 1925: 92; Fowler, 1925b: 193; Barnard, 1927: 1016; Smith, 1949a: 74, fig. 90; Smith, 1964: 291, pl. 29a; Smith, 1965: 74, fig. 90; Wallace, 1967a: 55, fig. 28; Compagno, 1986: 113, fig. 24.1; Compagno *et al*., 1989: 82, pl.; Compagno, 1999: 116; Compagno & Heemstra, 2007: 43; NPOA, 2013: 52; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; de Carvalho, 2016: 175, fig. 16.3; Weigmann, 2016: 912. *Heteronarce regani* von Bonde & Swart, 1923: 14, fig. 2, pl. 22 (original descrption). *Narcine natalensis* Fowler, 1925a: 198, fig. 2 (original description). *Narcine garmani* Fowler, 1925b: 193.

South Africa voucher material: Holotype: BMNH 1921.3.1.3. Non-types: SAIAB 16568, SAIAB 10439 [former ORI B 834].

South African distribution: Algoa Bay (EC) to northern KZN.

Remarks: A very rare, small, regionally endemic electric ray known only from the east coast of South Africa, Mozambique and Madagascar.

Conservation status: NT (2020).

Genus *Narke* Kaup, 1826
Onefin Sleeper Rays
Narke Kaup, 1826: 88. Type species: *Raja capensis* Gmelin, 1789, by monotypy.

***Narke capensis* (Gmelin, 1789)**
Onefin Sleeper Ray
Raja capensis Gmelin, 1789: 1512. Types: No known types. Type locality: Cape of Good Hope, South Africa. Also apparently spelled *rapensis*, but this appears to have been typesetting error for *capensis*.
Local synonymy: *Raja capensis*: Gmelin, 1789: 1512. *Astrape capensis*: Müller & Henle, 1841: 130; Bleeker, 1860b: 58; Günther, 1870: 454; Gilchrist, 1902: 168; Regan, 1908a: 242; Gilchrist & Thompson, 1916: 287. *Torpedo capensis*: Gronow, *in* Gray, 1854: 13 (original description). *Narke capensis*: von Bonde & Swart, 1923: 15; Barnard, 1925: 92, fig. 3, pl. 5; Fowler, 1941: 349; Smith, 1949a: 74, fig. 89; Barnard, 1959: 30, fig. 11, pl. 4; Smith, 1964: 292, pl. 29a; Smith, 1965: 74, fig. 89; Wallace, 1967a: 59, fig. 29; Compagno, 1986: 114, fig. 24.2; Compagno *et al*., 1989: 82, pl.; Compagno, 1999: 116; Compagno & Heemstra, 2007: 43; NPOA, 2013: 52; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; de Carvalho, 2016: 177, fig. 16.5; Weigmann, 2016: 912.
South Africa voucher material: SAIAB 10091, SAIAB 11932, SAIAB 12010, SAIAB 20030, SAIAB 26506, SAIAB 44283, SAIAB 44284, SAIAB 44285, SAIAB 44286, SAIAB 44290, SAIAB 48509, SAIAB 48530, SAIAB 48533, SAIAB 48534, SAIAB 48836, SAIAB 55006, SAIAB 61134.
South African distribution: Endemic. Cape of Good Hope (WC) to at least central KZN.
Remarks: A common, but very poorly known electric ray endemic to South Africa.
Conservation status: LC (2019).

Family Torpedinidae Bonaparte, 1838
Torpedo Rays

Genus *Tetronarce* Gill, 1862
Pelagic Topedo Rays
Tetronarce Gill, 1862: 387. Type species: *Torpedo occidentalis* Storer, 1843, by monotypy and original designation (name appears in key; Eschmeyer, 2013).

***Tetronarce cowleyi* Ebert, Haas, & de Carvalho, 2015**
Cowley's Torpedo Ray
Tetronarce cowleyi Ebert, Haas, & de Carvalho, 2015: 237, figs. 2–6. Holotype: SAIAB 25190. Type locality: off the west coast of South Africa, 33°39.0'S, 17°34.0'E, southeast Atlantic Ocean.
Local synonymy: *Torpedo hebetans*: Thompson, 1914: 159; von Bonde & Swart, 1923: 15. *Narcobatus nobilianus*: Barnard, 1925: 89; Norman, 1935: 37; Barnard, 1947: 30, pl. 4, fig. 10. *Torpedo nobiliana*: Fowler, 1936: 121, fig. 50; Fowler, 1941: 346; Smith, 1949a: 75, fig. 92; Smith, 1965: 75, fig. 92; Compagno, 1986: 112, fig. 23.2; Compagno *et al*., 1989: 80, pl.; Compagno *et al*., 1991: 89; Heemstra & Heemstra, 2004: 77; de Carvalho & Séret, 2016: 1374. *Torpedo* cf. *nobiliana*: Compagno, 1999: 116. *Tetronarce nobiliana*: NPOA, 2013: 51. *Tetronarce cowleyi*: da Silva *et al*., 2015: 248; Ebert, 2015: 162, fig. 173; Ebert & van Hees, 2015: 146; de Carvalho *et al*., 2016: 187, fig. 18.2; Weigmann, 2016: 913.
South Africa voucher material: Holotype: SAIAB 25190. Paratype: SAIAB 25347. Non-types: SAIAB 25348, SAIAB 26253, SAIAB 26293, SAIAB 26456, SAIAB 26884, SAIAB 27157, SAIAB 27158, SAIAB 40981, SAIAB 48537.
South African distribution: The Orange River (NC) to Algoa Bay (EC).
Remarks: A large, active swimming electric ray, but almost nothing known about it. The species appears to be a regional endemic to South Africa and Namibia.
Conservation status: LC (2019).

Genus *Torpedo* Duméril, 1805

Electric Rays

Torpedo Duméril, 1805: 102, 343. Type species: *Raja torpedo* Linnaeus, 1758. Type by subsequent monotypy.

***Torpedo fuscomaculata* Peters, 1855**

Blackspotted Electric Ray

Torpedo fuscomaculata Peters, 1855: 466. Lectotype: ZMB 4573. Type locality: Angoxe [Angoche], Ibo, Mozambique, Western Indian Ocean.

Local synonymy: *Torpedo smithii*: Günther, 1870: 451 (original description, South Africa); Gilchrist, 1902: 167; Thompson, 1914: 160. *Narcobatus smithi*: Barnard, 1925: 90. *Torpedo fuscomaculata*: Smith, 1964: 292; Wallace, 1967a: 49, figs. 25–26; Compagno, 1986: 112, fig. 23.1, pl. 5; Compagno *et al*., 1989: 80, pl.; Compagno, 1999: 116; Heemstra & Heemstra, 2004: 77; NPOA, 2013: 51; da Silva *et al*., 2015: 248; Ebert *et al*., 2015: 237; Ebert & van Hees, 2015: 146; de Carvalho *et al*., 2016: 197, fig. 18.12; Weigmann, 2016: 915. *Torpedo* cf. *fuscomaculata*: Compagno, 1999: 116.

South Africa voucher material: SAIAB 2743, SAIAB 2876, SAIAB 3576, SAIAB 7835, SAIAB 7843, SAIAB 8530, SAIAB 10254, SAIAB 11126, SAIAB 11127, SAIAB 11128, SAIAB 11130, SAIAB 11131, SAIAB 11780, SAIAB 12189, SAIAB 12190, SAIAB 12876, SAIAB 12981, SAIAB 13613, SAIAB 14622, SAIAB 15428, SAIAB 16733, SAIAB 25349, SAIAB 25929, SAIAB 26454, SAIAB 26455, SAIAB 26499, SAIAB 26500, SAIAB 26501, SAIAB 26502, SAIAB 26883, SAIAB 26962, SAIAB 37572, SAIAB 38693, SAIAB 40773, SAIAB 42736, SAIAB 44184, SAIAB 44209, SAIAB 46279, SAIAB 48225, SAIAB 48520, SAIAB 48535, SAIAB 49161, SAIAB 51960, SAIAB 52006, SAIAB 52658, SAIAB 54205, SAIAB 54850, SAIAB 54851, SAIAB 54852, SAIAB 54853, SAIAB 54854, SAIAB 65713, SAIAB 78295, SAIAB 186533.

South African distribution: Cape Agulhas (WC) to northern KZN.

Remarks: This species may be a complex of several regional species throughout the WIO. A review of this complex is currently under investigation (D.A. Ebert & M.R. de Carvalho, unpubl. data).

Conservation status: DD (2019).

***Torpedo sinuspersici* Olfers, 1831**

Marbeled Electric Ray

Torpedo sinuspersici Olfers, 1831: 15, 17. Types: No types known. Type locality: Persian Gulf.

Local synonymy: *Torpedo marmorata*: Günther, 1870: 450 (in part); Gilchrist, 1902: 167; Regan, 1908a: 242; Thompson, 1914: 159 (in part); Gilchrist & Thompson, 1916: 286; Smith, 1949a: 75, fig. 91; Davies, 1964: 32, pl. 2; Smith, 1965, 75, fig. 91; van Bruggen, 1965: 191. *Narcacion sinus-persici*: Garman, 1913: 309; von Bonde & Swart, 1923: 15. *Narcacion marmoratus*: von Bonde & Swart, 1923: 15. *Narcobatus marmoratus*: Barnard, 1925: 90, fig. 4, pl. 5. *Torpedo panthera*: Fowler, 1925b: 193; Fowler, 1934b: 409; Fowler, 1935: 364. *Torpedo sinuspersici*: Fowler, 1941: 344; Fraser-Brunner, 1949: 946, fig. 1; Wallace, 1967a: 53, fig. 27; Compagno, 1986: 113, fig. 23.3; Compagno *et al*., 1989: 82, pl.; Compagno, 1999: 116; Heemstra & Heemstra, 2004: 76; NPOA, 2013: 52; da Silva *et al*., 2015: 248; Ebert *et al*., 2015: 237; Ebert & van Hees, 2015: 146; de Carvalho *et al*., 2016: 201, fig. 18.16; Weigmann, 2016: 916.

South Africa voucher material: SAIAB 11129, SAIAB 19443, SAIAB 44195, SAIAB 44295, SAIAB 48517, SAIAB 48833, SAIAB 48834, SAIAB 88448, SAIAB 88521, SAIAB 189092, SAIAB 201956.

South African distribution: Port Alfred (EC) to KZN.

Remarks: The WIO *Torpedo sinuspersici* complex is currently under investigation to clarify the status of the various nominal species (DAE & M.R. de Carvalho, unpubl. data).

Conservation status: DD (2019).

Order Rhinopristiformes

Family Pristidae Bonaparte, 1838

Sawfishes

Genus *Pristis* Linck, 1790

Sawfishes

Pristis Linck, 1790: 31. Type species: *Squalus pristis* Linnaeus, 1758. Type by monotypy (also by absolute tautonymy).

***Pristis pristis* (Linnaeus, 1758)**

Largetooth Sawfish

Squalus pristis Linnaeus, 1758: 235. No types known. Type locality: Mediterranean Sea, Indian Ocean, western Atlantic; localities include Marseille, France; Italy; Lesbos Island, Greece; Syria; Brazil.

Local synonymy: *Pristis pectinatus*: Bleeker, 1860b: 58; Günther, 1870: 437; Gilchrist, 1902: 166; Thompson, 1914: 153; Norman, 1922: 320; von Bonde & Swart, 1923: 2; Barnard, 1925: 57; Fowler, 1925a: 192; Fowler, 1941: 291; Smith, 1949a: 63, fig. 59; Barnard, 1959: 22, fig. 8, pl. 3; Smith, 1961a: 63, fig. 59, pl. 3; Davies, 1964: pl. 6; Smith, 1965: 63, fig. 59; Wallace, 1967b: 9, fig. 4; Heemstra & Heemstra, 2004: 76. *Pristis perrotteti*: Barnard, 1925: 56; Barnard, 1959: 22. *Pristis microdon*: Smith, 1949a: 63, fig. 58; Smith, 1961a: 63, fig. 58; Smith, 1965: 63, fig. 58; Wallace, 1967b: 6, fig. 3; Compagno, 1986: 110, fig. 22.1; Compagno *et al*., 1989: 74, pl. (in part); Compagno, 1999: 115; Heemstra & Heemstra, 2004: 75. *Pristis pectinata*: Compagno, 1986: 111, fig. 22.2, pl. 4; Compagno *et al*., 1989: 74, pl. (in part); Compagno, 1999: 115. *Pristis pristis*: Compagno, 1999: 115; Faria *et al*., 2013: 136; Ebert & van Hees, 2015: 146; Everett *et al*., 2015: 275; Last *et al*., 2016b: 474; Last *et al*., 2016c: 63, fig. 8.4; Weigmann, 2016: 917.

South Africa voucher material: SAIAB 11135, SAIAB 12833.

South African distribution: Port Alfred (EC) to the KZN border with Mozambique.

Remarks: The sawfish family Pristidae was problematic in the number of species and distribution until Faria *et al*. (2013) reviewed the family and concluded that two genera (*Anoxypristis*, *Pristis*) and five species (*A. cuspidata*, *P. clavata*, *P. pectinata*, *P. pristis*, and *P. zijsron*) were valid. The nomenclature of South Africa sawfishes is no different and is lengthy and convoluted with various names including *P. microdon*, *P. pectinata*, *P. perrotteti*, and *P. pristis* appearing in the literature. However, a review by Everett *et al*. (2015) found that two species, *P. pristis* and *P. zijsron* appear to be the only two that historically occurred in South African waters.

Conservation status: CR (2013).

***Pristis zijsron* (Bleeker, 1851)**

Green Sawfish

Pristis zijsron Bleeker, 1851: 442. Holotype: RMNH 7418 (rostrum only). Type locality: Bandjarmasin, Kalimantan, Indonesia.

Local synonymy: *Pristis zijsron*: Compagno, 1986: 111, fig. 22.3, pl. 4; Compagno *et al*., 1989: 74, pl.; Compagno, 1999: 115; Heemstra & Heemstra, 2004: 76; Faria *et al*., 2013: 136; Ebert & van Hees, 2015: 146; Everett *et al*., 2015: 275; Last *et al*., 2016b: 474; Last *et al*., 2016c: 64, fig. 8.5; Weigmann, 2016: 918.

South Africa voucher material: SAIAB 11135.

South African distribution: KZN, but the exact limits of its distribution are uncertain due to misidentification with *P. pristis*.

Remarks: *Pristis zijsron* was long misidentified with other sawfish species due to the complicated taxonomic history of the group.

Conservation status: CR (2013).

Family Rhinidae Müller & Henle, 1841

Wedgefishes

Genus *Rhina* Bloch & Schneider, 1801

Bowmouth Guitarfishes

Rhina Bloch & Schneider, 1801: 352. Type designation by indication under ICZN Opinion 6. On official list; *Rhina* Schaeffer, 1760, *Rhina* Walbaum, 1792, and *Rhina* Rafinesque, 1810a placed on Official Index (Opinion 345). Valid as *Rhina* Bloch & Schneider, 1801.

***Rhina ancylostomus* Bloch & Schneider, 1801**

Bowmouth Guitarfish

Rhina ancylostomus Bloch & Schneider, 1801: 352, pl. 72. Lectotype: ZMB (lost), Paralectotype, ZMB 4621 (1, dry, lost). Type locality: Coromandel, India.

Local synonymy: *Rhina ancylostomus*: Smith, 1961a: 503, fig. 59a; Compagno *et al*., 1989: 76, pl. *Rhina ancylostoma*: Wallace, 1967b: 14, figs. 7–8; Compagno, 1986: 128, fig. 27.1; Compagno, 1999: 115; Heemstra & Heemstra, 2004: 79; Ebert & van Hees, 2015: 146; Last *et al*., 2016b: 471; Last *et al*., 2016d: 67, fig. 9.1; Weigmann, 2016: 918.

South Africa voucher material: SAIAB 11134, SAIAB 25493.

South African distribution: KZN from Mzamba north to Mozambique border.

Remarks: Uncommon in KZN.

Conservation status: CR (2019).

Genus *Rhynchobatus* Müller & Henle, 1837a

Wedgefishes

Rhynchobatus Müller & Henle, 1837a: 116. Type species: *Rhinobatus laevis* Bloch & Schneider, 1801, by monotypy.

***Rhynchobatus djiddensis* (Forsskål, 1775)**

Giant Sandshark

Raja djiddensis Forsskål, 1775: 18. No known types. Type locality: Jeddah, Saudi Arabia and Luhaiya, Yemen, Red Sea.

Local synonymy: *Rhynchobatus djeddensis*: Barnard, 1925: 58, pl. 3; Fowler, 1941: 300; Barnard, 1959: 22, fig. 9, pl. 3; Smith, 1949a: 63, fig. 60; Smith, 1961a: 63, fig. 60; Smith, 1965: 63, fig. 60; Wallace, 1967b: 11, figs. 5–6. *Rhynchobatus djiddensis*: Norman, 1926: 944; Compagno, 1986: 131, fig. 27.7, pl. 4; Compagno *et al*., 1989: 76, pl.; Compagno, 1999: 115; Heemstra & Heemstra, 2004: 79; Mann, 2013: 149; NPOA, 2013: 58; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; Last *et al*., 2016b: 472; Last *et al*., 2016d: 70, fig. 9.4; Weigmann, 2016: 918.

South Africa voucher material: SAIAB 21209, SAIAB 48823, SAIAB 53229, SAIAB 88254.

South African distribution: Knysna (EC) to KZN border with Mozambique.

Remarks: Early reports of this species commented on it being a regular visitor to KZN during the summer months and it being one of the gamest fishes along the coast (Barnard, 1925). This appears to be the only confirmed *Rhynchobatus* species in South African waters and it appears to mostly be replaced by *R. australiae* in southern Mozambique. Although there are no confirmed records of *R. australiae* in South African waters it would not be unexpected as it is common in southern Mozambique.

Conservation status: CR (2019).

Family Rhinobatidae Müller & Henle, 1837

Guitarfishes

Genus *Acroteriobatus* Giltay, 1928

Flapnose Guitarfishes

Acroteriobatus Giltay, 1928: 26. Type species: *Rhinobatus* (*Syrrhina*) *annulatus* Smith, 1841. Type by subsequent designation. Type apparently designated first by Fowler, 1969: 141.

***Acroteriobatus annulatus* (Smith, 1841)**

Lesser Guitarfish

Rhinobatus (*Syrrhina*) *annulatus* Smith [A.], *in* Müller & Henle, 1841: 116. Syntypes: (2) BMNH 1843.2.29.22 (1 stuffed), MNHN A-8586. Type locality: Cape of Good Hope, South Africa.

Local synonymy: *Rhinobatus* (*Syrrhina*) *annulatus*: Smith [A.], *in* Müller & Henle, 1841: 116; Smith [A.], 1849: pl. 16; Bleeker, 1860b: 58; Duméril, 1865: 487, fig. 6, pl. 10. *Rhinobatos* (*Syrrhina*) *columnae* (*non* Bonaparte):

Günther, 1870: 446 (in part); Gilchrist, 1902: 167; Regan, 1908a: 242; Lampe, 1914: 215; Thompson, 1914: 155; Gilchrist & Thompson, 1916: 285. *Rhinobatus blockii*: Regan, 1908a: 242 (in part); Gilchrist & Thompson, 1911: 55. *Rhinobatus annulatus*: Garman, 1913: 272; von Bonde & Swart, 1923: 3; Barnard, 1925: 59, fig. 9a; Norman, 1926: 964, fig. 17; Fowler, 1934b: 408; von Bonde, 1934: 16; Fowler, 1941: 312; Barnard, 1947: 22, fig. 10, pl. 3; Barnard, 1959: 22, fig. 10, 10a, pl. 3; Wallace, 1967b: 27, fig. 14 (fig. 15 = *R. austini*). *Rhinobatus rhinobatus*: ? von Bonde & Swart, 1923: 3. *Rhinobatos annulatus*: Smith, 1949a: 64, pl. 3; Smith, 1965: 64, pl. 3; Compagno, 1986: 129, fig. 27.2, pl. 4; Compagno *et al*., 1989: 76, pl.; Compagno *et al*., 1991: 88; Compagno, 1999: 116; Heemstra & Heemstra, 2004: 78; Mann, 2013: 147. *Rhinobatus annulatus* (Natal form): Wallace, 1967b: 27 (in part), fig. 15 (= *Rhinobatos austini*). *Acroteriobatus annulatus*: NPOA, 2013: 57; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; Last *et al*., 2016b: 465; Séret *et al*., 2016a: 79, fig. 10.1; Weigmann, 2016: 919.

South Africa voucher material: Syntypes see above for details. Non-types: SAIAB 4503, SAIAB 7636, SAIAB 19821, SAIAB 26886, SAIAB 39372, SAIAB 41535, SAIAB 44314, SAIAB 44315, SAIAB 44319, SAIAB 44341.

South African distribution: ?Endemic. Confirmed along the west coast from at least Langebaan (WC) to off the Transkei coast (EC) and possibly to central KZN, but records from outside this region should be carefully checked.

Remarks: The range for *A. annulatus* is poorly defined since it has frequently been misidentified with other South African guitarfish species, including *A. blochii*, *A. leucospilus*, *A. ocellatus*, and *R. austini*. In addition, records of this species outside South Africa also require confirmation. The species may eventually prove to be a South African endemic.

Conservation status: VU (2020).

***Acroteriobatus blochii* (Müller & Henle, 1841)**

Bluntnose Guitarfish

Rhinobatus (*Syrrhina*) *blochii* (Müller & Henle, 1841): 115, fig. 1, pl. 37. Syntypes: (originally 14, stuffed) MNHN 0000-1256 (1), MNHN 0000-3460 (1 dry), MNHN 0000-3471 (1), MNHN 0000-3473 (1 dry), MNHN 0000-3474 (1 dry), MNHN A-7853 (1), MNHN A-7854 (3); ZMB 4547 (1). Type locality: Cape of Good Hope, South Africa.

Local synonymy: *Rhinobatus blochii*: Müller & Henle, 1841: 115, fig. 1, pl. 37; Norman, 1926: 969. *Rhinobatus blochi*: Thompson, 1914: 154; Barnard, 1925: 61. *Rhinobatos blochii*: Smith, 1949a: 64, fig. 61 (in part, not fig. 61 = *A. leucospilus*), pl. 3; Compagno, 1986: 130, fig. 27.3, pl. 4; Compagno *et al*., 1989: 76, pl.; Compagno, 1999: 116. *Acroteriobatus blochii*: NPOA, 2013: 57; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; Last *et al*., 2016b: 465; Séret, 2016: 1360; Séret *et al*., 2016a: 80, fig. 10.2; Weigmann, 2016: 920.

South Africa voucher material: See above for details on syntypes.

South African distribution: West coast from the Orange River (NC) to Langebaan Lagoon (WC). Its distribution eastwards may extend to Cape Point, but if so, it is rare south of Langebaan.

Remarks: *Acroteriobatus blochii* was once considered to be very rare and known from only a few specimens, but it was frequently misidentified as *A. annulatus* along the west coast of South Africa and Namibia. A coastal survey conducted along the west coast of South Africa and Namibia (D.A. Ebert & P.D. Cowley, unpubl. data) revealed this to be the most common guitarfish along the west coast, mostly replacing *A. annulatus* north of Langebaan Lagoon (WC) and extending into at least central Namibia (Compagno *et al*., 1989).

Conservation status: LC (2019).

***Acroteriobatus leucospilus* (Norman, 1926)**

Greyspot Guitarfish

Rhinobatus leucospilus Norman, 1926: 966, fig. 18. Syntypes: BMNH 1905.6.8.12 (1), 1920.7.23.1 (1). Type locality: Durban, KwaZulu-Natal, South Africa.

Local synonymy: *Rhinobatus blockii*: Regan, 1908a: 242 (in part); Gilchrist & Thompson, 1916: 284 (in part); Smith, 1961a: *non* 64, pl. 3. *Rhinobatus leucospilus*: Norman, 1926: 966, Fig. 18; Barnard, 1927: 1014; Fowler, 1941: 313; Wallace, 1967b: 24, figs. 10, 13. *Rhinobatos blochii*: Smith, 1949a: fig. 61 only (= *A. leucospilus*). *Rhinobatus annulatus*: Smith, 1961a: 64 (in part), *non* pl. 3. *Rhinobatos leucospilus*: Compagno, 1986: 131,

fig. 27.5; Compagno *et al*., 1989: 76, pl.; Heemstra & Heemstra, 2004: 78. *Acroteriobatus leucospilus*: NPOA, 2013: 58; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; Last *et al*., 2016b: 465; Séret *et al*., 2016a: 81, fig. 10.3; Weigmann, 2016: 920.

South Africa voucher material: Syntypes: BMNH 1905.6.8.12 (1), 1920.7.23.1 (1). Non-types: SAIAB 11142, SAIAB 11143, SAIAB 11159, SAIAB 34588, SAIAB 189087.

South African distribution: Central Transkei coast (EC) to northern KZN.

Remarks: This species was thought to be endemic to South Africa, but its range now appears to extend to at least Zanzibar and Dar es Salaam, Tanzania. Records of this species from Madagascar are of a different species.

Conservation status: EN (2019).

***Acroteriobatus ocellatus* (Norman, 1926)**

Speckled Guitarfish

Rhinobatus ocellatus Norman, 1926: 967, fig. 20. Holotype: BMNH 1906.11.19.26. Type locality: Bird Island, Algoa Bay, South Africa.

Local synonymy: *Rhinobatus columnae*: Regan, 1908a: 242. *Rhinobatus ocellatus*: Norman, 1926: 967, fig. 20; Barnard, 1927: 1015; Fowler, 1941: 314; Wallace, 1967b: 22, fig. 12. *Rhinobatos annulatus*: Smith, 1949a: 64 (part), *non* pl. 3.; Smith, 1961a: 64 (part), *non* pl. 3; Smith, 1965: 64 (part), *non* pl. 3. *Rhinobatos ocellatus*: Compagno, 1986: 131, fig. 27.6; Compagno *et al*., 1989: 78, pl.; Heemstra & Heemstra, 2004: 78. *Acroteriobatus ocellatus*: NPOA, 2013: 58; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; Last *et al*., 2016b: 465; Séret *et al*., 2016a: 82, fig. 10.4; Weigmann, 2016: 920.

South Africa voucher material: Holotype: BMNH 1906.11.19.26. Non-types: SAIAB 11138, SAIAB 11141, SAIAB 13002.

South African distribution: Endemic. Bird Island, Algoa Bay (EC).

Remarks: Very little is known of this rare species. Its range is not well defined, and the map in Séret *et al.* (2016a) is inaccurate since the only verified specimens are from Algoa Bay. A detailed revision of the South African *Acroteriobatus* is required to clarify the status and validity of this species.

Conservation status: DD (2019).

Genus *Rhinobatos* Linck, 1790

Guitarfishes

Rhinobatos Linck, 1790: 32. Type species: *Raja rhinobatos* Linnaeus, 1758; type assumed from tautonymy.

***Rhinobatos austini* Ebert & Gon, 2017**

Austin's Guitarfish

Rhinobatos austini Ebert & Gon, 2017: 205, figs. 1–6. Holotype: SAIAB 75223. Type locality: Near Port Shepstone, KwaZulu-Natal, South Africa, 30°50'S, 30°29'E.

Local synonymy: *Rhinobatus annulatus* (Natal form): Wallace, 1967b: 27, fig. 15 (in part); Compagno *et al*., 1989: 78, pl. (in part); Heemstra & Heemstra, 2004: 78. *Rhinobatos holcorhynchus*: Séret *et al*., 2016a: 98, fig. 10.20 (in part, illustration is of *R. austini*). *Rhinobatos austini*: Ebert & Gon, 2017: 205, Figs. 1–6.

South Africa voucher material: Holotype: SAIAB 75223; paratypes: SAIAB 186420, SAIAB 193574. Non-type: SAIAB 11125.

South African distribution: Port Shepstone north to KZN border with Mozambique.

Remarks: Accounts by Wallace (1967b, see fig. 15) and Compagno *et al*. (1989, see illustration on p. 79) described a *Rhinobatos annulatus* "Natal" form that was distinguished by large brown spots from the "Cape" form. However, the "Natal" form is actually *Rhinobatos austini*, while the "Cape" form, which is now assigned to the genus *Acroteriobatus*, has numerous small eyespots on its dorsal surface. Furthermore, the recently described *R. austini* was also misidentified with *R. holcorhynchus* due to both species having a black teardrop-shaped blotch on the ventral surface of its snout. Recent re-examination of specimens from Mozambique and Madagascar has expanded the known range of *R. austini*. This species appears to inhabit a mostly coastal habitat from inshore to 107 m, but mostly less than 75 m depth, while *R. holcorhynchus* appears to occur in deeper water at depths from 75 m to at least 350 m (Séret *et al*., 2016a; Ebert & Gon, 2017). The illustration in the species account of *R. holcorhynchus* in Séret *et al*. (2016a, see fig. 10.20) is actually *R. austini*.

Conservation status: DD (2019).

***Rhinobatos holcorhynchus* Norman, 1922**

Slender Guitarfish

Rhinobatus holcorhynchus Norman, 1922: 318. Holotype (unique): BMNH 1922.1.13.18. Type locality: Zululand, KwaZulu-Natal, South Africa.

Local synonymy: *Rhinobatus holcorhynchus*: von Bonde & Swart, 1923: 3; Barnard, 1925: 61, fig. 9c, pl. 3; Norman, 1926: 957, fig. 10; Barnard, 1927: 1014; Fowler, 1941: 307; Barnard, 1959: 22; Wallace, 1967b: 18, figs. 9, 11. *Rhinobatus natalensis*: Fowler, 1925b: 195, fig. 1. *Rhinobatus schlegeli*: Smith, 1949a: 64, fig. 64; Smith, 1961a: 64, fig. 64; Smith, 1965: 64, fig. 64. *Rhinobatos holcorhynchus*: Compagno, 1986: 130, fig. 27.4; Compagno *et al*., 1989: 78, pl.; Compagno, 1999: 116; Heemstra & Heemstra, 2004: 78; NPOA, 2013: 57; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 146; Last *et al*., 2016b: 470; Séret *et al*., 2016a: 98, fig. 10.20 (in part, illustration is of *R. austini*); Weigmann, 2016: 922.

South Africa voucher material: Holotype: BMNH 1922.1.13.18, ANSP 53041 (holotype of *Rhinobatos natalensis*). Non-types: SAIAB 11144, SAIAB 11145, SAIAB 11146, SAM 033512, SAM 033999, SAM 034815.

South African distribution: East coast from Port Shepstone to KZN border with Mozambique.

Remarks: The geographic range of *R. holcorhynchus* in East Africa, Madagascar, and the Mascarene Archipelago should be revisited given the misidentification with other regional *Rhinobatos* species, including *R. austini* and *R. nudidorsalis*. The scientific name *Rhinobatos schlegelii* appears in some earlier South African literature accounts since Smith (1949a, 1961a, 1965) considered *R. holcorhychus* to be a junior synonym of it. However, most recent accounts do not recognize it as occurring in southern Africa, and consider its distribution to be restricted to the western North Pacific (Last *et al*., 2016b: 470; Séret *et al*., 2016a: 98, fig. 10.20).

Conservation status: DD (2019).

Order Rajiformes

Family Arhynchobatidae Fowler, 1934a

Softnose Skates

Genus *Bathyraja* Ishiyama, 1958

Softnose Skates

Bathyraja (subgenus of *Breviraja*) Ishiyama, 1958: 325. Type species: *Raja isotrachys* Günther, 1877, by original designation.

***Bathyraja smithii* (Müller & Henle, 1841)**

African Softnose Skate

Raja smithii Müller & Henle, 1841: 150, pl. 49. Syntypes: (2) BMNH 1953.8.10.1 (skin), MNHN 0000-1594 (1). Type locality: South Africa.

Local synonymy: *Raja smithii*: Müller & Henle, 1841: 150, pl. 49; Gray, 1851: 112; Bleeker, 1860b: 58; Duméril, 1865: 553; Günther, 1870: 467; Gilchrist, 1902: 168; Thompson, 1914: 159; Norman, 1935: 41; Fowler, 1941: 364 (South Africa, not *R. eatoni* from Kerguelen Island = *Bathyraja eatoni*). *Raja eatoni*: Günther, 1876: 390; Günther, 1879: 166; Günther, 1880: 15. *Raia eatonii*: Garman, 1913: 365. *Raia smithii*: Garman, 1913: 366; von Bonde & Swart, 1923: 5; Barnard, 1925: 66, pl. 4; Smith, 1949a: 66 (South Africa, not fig. 68, = *Cruriraja parcomaculata*; not pl. 3, ? = *Raja* cf. *clavata*); Smith, 1965: 66 (South Africa, not fig. 68 or pl. 3). *Bathyraja smithii*: Hulley, 1970: 213, figs. 20–21, pl. 13; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 116, fig. 25.1; Compagno *et al*., 1989: 86, pl.; Compagno *et al*., 1991: 91; Ebert *et al*., 1991: 75; Stehmann, 1995: 23; Compagno, 1999: 116; Compagno & Ebert, 2007: 133, fig. 4a; Ebert & Compagno, 2007: 117; Ebert *et al*., 2008: 84; NPOA, 2013: 52; Ebert, 2014: 41, fig. 41; da Silva *et al*., 2015: 246; Ebert, 2015: 167, fig. 177; Ebert & van Hees, 2015: 146; Last *et al*., 2016e: 418, fig. 20.50; McEachran & Séret, 2016: 1395, fig.; Weigmann, 2016: 933.

South Africa voucher material: SAIAB 25186, SAIAB 25187, SAIAB 25188, SAIAB 25189, SAIAB 26000, SAIAB 26232, SAIAB 27143, SAIAB 27144, SAIAB 27145, SAIAB 27146, SAIAB 27147, SAIAB 27148, SAIAB 40983, SAIAB 40984, SAIAB 40985, SAIAB 61308, SAIAB 64276.

South African distribution: The Orange River (NC) to Cape Agulhas (WC), with a single record from near Algoa Bay (EC).

Remarks: The area between Saldanha Bay and Cape Point appears to be a population center since the species has been caught in higher numbers during survey cruises here than other locations off South Africa and Namibia (Compagno *et al*., 1991). One of the syntypes gives the nominal locality as the Bosphorus between the Black Sea and Sea of Marmara, Turkey, but this appears to be erroneous (Compagno & Ebert, 2007). Records of this species from Kerguelen Island are now known to be *Bathyraja eatoni*, which has in the past been synonymized with *B. smithii*, but it is a distinct species (Compagno *et al*., 1991; Compagno & Ebert, 2007).

Conservation status: LC (2019).

Family Rajidae Blainville, 1816

Hardnose Skates

Genus *Amblyraja* Malm, 1877

Stout Skates

Amblyraja Malm, 1877: 120, 607. Type species *Raja radiata* Donovan, 1808, by subsequent designation. Designated by Jordan, 1919: 391.

***Amblyraja hyperborea* (Collett, 1879)**

Boreal Skate or Bigmouth Skate

Raja hyperborea Collett, 1879: 7. Holotype (unique): ZMUO J.3134. Type locality: Northwest of Spitsbergen, Svalbard, Norway.

Local synonymy: *Raja robertsi*: Hulley, 1970: 190, fig. 12 (original description, west of Cape Town, South Africa, 33°51'S, 17°14'E); Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 125, fig. 25.18; Stehmann, 1995: 106. *Raja* (*Amblyraja*) *robertsi*: Compagno *et al*., 1989: 88, pl.; Compagno *et al*. 1991: 93; Ebert *et al*., 1991: 79. *Amblyraja robertsi*: Compagno, 1999: 116; Compagno & Ebert, 2007: 133, fig. 4b; Ebert & Compagno, 2007: 119; Ebert *et al*., 2008: 84; Ebert, 2015: 172, fig. 187; Ebert & van Hees, 2015: 147. *Amblyraja hyperborea*: Ebert & Compagno, 2007: 118; Last *et al*., 2016f: 18; Last *et al*., 2016g: 213, fig. 19.4; Weigmann, 2016: 939.

South Africa voucher material: ZMH 25250 [ex ISH 54-1967]. Ebert *et al*. (2008) examined two specimens and four egg cases of this species at SAM; none had accession numbers.

South African distribution: Known from three records west of Cape Town (WC) in very deep water (Compagno & Ebert, 2007).

Remarks: This species was previously referred to as *Amblyraja robertsi*, but recent molecular and morphological data confirm this species is the wide-ranging *A. hyperborea* that has a circumglobal distribution (Last *et al*., 2016a). Two males, an adolescent and an adult, and four egg cases for this species were also trawled from 1,150 m off Cape Town (Ebert *et al*., 2008).

Conservation status: LC (2016).

***Amblyraja taaf* (Meisner, 1987)**

Whiteleg Skate

Raja taaf Meisner, 1987: 1840, figs. 1–2. Holotype: ZIK 91514. Type locality: Lena Bank, 53°01'S, 44°25'E, southwestern Indian Ocean.

Local synonymy: *Raja radiata* (*non* Donovan): Hulley, 1970: 193, fig. 13, pl. 7a; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 124, figs. 25.16; Compagno *et al*., 1989: 88, pl. *Raja* (*Amblyraja*) *radiata* (*non* Donovan): Compagno *et al*., 1991: 93; Ebert *et al*., 1991: 79. *Amblyraja* cf. *radiata*: Compagno, 1999: 116. *Amblyraja taaf*: Compagno & Ebert, 2007: 133, fig. 4c; Ebert & Compagno, 2007: 119; Ebert, 2015: 172, fig. 188; Ebert & van Hees, 2015: 147; Last *et al*., 2016g: 217, fig. 19.8; Weigmann, 2016: 941.

South Africa voucher material: SAM (2) uncatalogued specimens.

South African distribution: Known from two specimens caught west of Cape Town (WC).

Remarks: This appears to be a sub-Antarctic species that is presently known only from off Kerguelen Islands in addition to the one location off Cape Town (WC) (Last *et al*., 2016a).

Conservation status: DD (2020).

Genus *Dipturus* Rafinesque, 1810a

Longnosed Skates

Dipturus Rafinesque, 1810a: 16. Type species: *Raja batis* Linnaeus, 1758, by monotypy.

***Dipturus campbelli* (Wallace, 1967a)**

Blackspot Skate

Raja campbelli Wallace, 1967a: 24, fig. 12. Holotype: SAIAB [formerly RUSI] 992 [ex ORI B804]. Type locality: 24 miles east of Durban, KwaZulu-Natal, South Africa.

Local synonymy: *Raja campbelli*: Wallace, 1967a: 24, fig. 12; Séret, 1989: 127. *Raja pullopunctata*: Hulley, 1986: 123, fig. 25.15, pl. 6. *Raja* (*Dipturus*) *campbelli*: Compagno *et al*., 1989: 92, pl. *Dipturus campbelli*: Compagno, 1999: 116; Heemstra & Heemstra, 2004: 81; Compagno & Ebert, 2007: 137, fig. 6a; Ebert & Compagno, 2007: 119; Ebert *et al*., 2008: 86; Ebert, 2014: 62, fig. 95; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 21; Last *et al*., 2016g: 246, fig. 19.37; Weigmann, 2016: 943.

South Africa voucher material: Holotype: SAIAB [former RUSI] 991 [ex ORI B804]. Paratype: SAIAB [former RUSI] 992 [ex ORI B859]. Ebert *et al*. (2008) examined 13 uncatalogued specimens in the SAM collection.

South African distribution: KZN coast to the border with Mozambique.

Remarks: This poorly known skate was previously misidentified as *D. pullopunctatus*, but the collection of additional specimens and a re-examination of the type material confirmed it as a distinct species (Compagno *et al*., 1989).

Conservation status: NT (2020).

***Dipturus doutrei* (Cadenat, 1960)**

Javelin Skate

Raja doutrei Cadenat, 1960: 294, figs. 1–11, 13, 15. Lectotype: MNHN 1959-0041 [ex IFAN]. Type locality: Senegal.

Local synonymy: *Raja batis*: ? Hulley, 1966: 512 (Cape Columbine, ? = *Raja springeri*). *Raja doutrei*: Hulley, 1970: 164, fig. 5, pl. 1b; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 122, fig. 25.11; Stehmann, 1995: 36. *Raja* (*Dipturus*) *doutrei*: Compagno *et al*., 1989: 90, pl.; Compagno *et al*., 1991: 95; Ebert *et al*., 1991: 79. *Dipturus doutrei*: Compagno, 1999: 116; Compagno & Ebert, 2007: 137, fig. 6b; Ebert & Compagno, 2007: 119; Ebert *et al*., 2008: 87; Ebert, 2014: 60, fig. 84; Ebert, 2015: 176, fig. 196; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 21; Last *et al*., 2016g: 250, fig. 19.41; McEachran & Séret, 2016: 1389; Weigmann, 2016: 944.

South Africa voucher material: Ebert *et al*. (2008) reported on a single specimen at SAM.

South African distribution: West of Cape Town (WC) to southeastern Cape, south of Port Elizabeth (EC).

Remarks: Several specimens of this uncommon skate were collected off Cape Town and examined, but none were retained.

Conservation status: DD (2009).

***Dipturus lanceorostratus* (Wallace, 1967a)**

Rattail Skate

Raja lanceorostrata Wallace, 1967a: 15, fig. 8. Holotype: SAIAB [former RUSI] 986 [ex ORI B869]. Type locality: Off the Limpopo River mouth, Mozambique.

Local synonymy: *Raja lanceorostrata*: Wallace, 1967a: 15, fig. 8. *Raja* (*Dipturus*) *lanceorostratus*: Hulley, 1986: 122, fig. 25.12; Compagno *et al*., 1989: 90, pl. *Dipturus lanceorostratus*: Compagno, 1999: 116; Compagno & Ebert, 2007: 139, fig. 6c; Ebert & Compagno, 2007: 119; Ebert, 2014: 60, fig. 82; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 21; Last *et al*., 2016g: 261, fig. 19.52; Weigmann, 2016: 945.

South Africa voucher material: SAIAB 10726, SAIAB 189018.

South African distribution: New species record for South Africa. Two specimens of this rare skate, one from off KZN and another from the Agulhas Bank (WC), are reported here for the first time.

Remarks: This very rare skate species was previously known only from the three type specimens from off the Limpopo River, Mozambique. However, a search of the SAIAB collection uncovered about eight specimens from Mozambique in addition to the two South African specimens, which represent a range extension for this species.

Conservation status: DD (2019).

***Dipturus nidarosiensis* (Storm, 1881)**

Norwegian Skate

Raja nidarosiensis Storm, (ex Collett) 1881: 80. Syntypes: ZMUO J6339 (1 stuffed in poor condition), ZMUO (2, lost). Type locality: Munkholmen, Trondheim Fjord, Norway.

Local synonymy: *Raja* (*Dipturus*) *springeri*: Compagno *et al*., 1989: 92, pl. (in part); Compagno *et al*., 1991: 96 (in part). *Dipturus springeri*: Compagno, 1999: 116 (in part); Compagno & Ebert, 2007: 139, fig. 6e (in part); Ebert *et al*., 2008: 88 (in part); NPOA, 2013: 56 (in part); da Silva *et al*., 2015: 247 (in part); Ebert, 2015: 176, fig. 195 (in part?); Ebert & van Hees, 2015: 147 (in part). *Dipturus nidarosiensis*: Ebert & Compagno, 2007: 119; Last *et al*., 2016f: 21; Last *et al*., 2016g: 266, fig. 19.57.

South Africa voucher material: Uncertain, all previous large *Dipturus* species off the west and south coasts of South Africa have been referred to as *D. springeri*. The specimens listed here were all from the west and south coasts of South Africa and may be *D. nidarosiensis* pending re-examination: SAIAB 26001, SAIAB 26231, SAIAB 26466, SAIAB 26467, SAIAB 26468, SAIAB 26636, SAIAB 26637, SAIAB 26912, SAIAB 26913, SAIAB 26914, SAIAB 40953.

South African distribution: West coast and possibly south coast (WC), but eastern extent of range uncertain due to confusion with *D. springeri*.

Remarks: This species was thought to be restricted to the northeast Atlantic, but Last *et al*. (2016a), based on molecular data, extended its range to South Africa where it has been misidentified with *D. springeri*, which now may only occur off the east coast of South Africa. A re-examination of South African *D. springeri* specimens is required to better define the geographic distribution of these two large *Dipturus* species.

Conservation status: NT (2015).

***Dipturus pullopunctatus* (Smith, 1964)**

Slime Skate

Raja pullopunctata Smith, 1964: 285, fig. A, pl. 25. SAIAB [formerly RUSI] 37. Type locality: Algoa Bay, 31°07'E, 29°59'S, off coast of South Africa, Western Indian Ocean.

Local synonymy: *Raia batis*: Thompson, 1914: 156; von Bonde & Swart, 1923: 3; Barnard, 1925: 70, fig. 3, pl. 4; von Bonde, 1934: 16; Smith, 1949a: 66, fig. 65; Smith, 1965: 66, fig. 65. *Raia stabuliforis*: von Bonde & Swart, 1923: 12. *Raja batis*: Norman, 1935: 39; Fowler, 1941: 385; Bigelow & Schroeder, 1953: 146. *Raja pullopunctata*: Smith, 1964: 285, fig. A, pl. 25; Hulley, 1966: 505, figs. 4–5; Wallace, 1967a: 13, fig. 7; Hulley, 1970: 166, fig. 6, pl. 2; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 123, fig. 25.15, pl. 6 in part, including *D. campbelli*); Stehmann, 1995: 106; Walmsley-Hart *et al*., 1999: 165. *Raja* (*Dipturus*) *pullopunctata*: Compagno *et al*., 1989: 92, pl.; Compagno *et al*., 1991: 95; Ebert *et al*., 1991: 73. *Dipturus pullopunctata*: Compagno, 1999: 116; Ebert & Compagno, 2007: 119; Ebert *et al*., 2008: 87; NPOA, 2013: 55; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 147. *Dipturus pullopunctatus*: Heemstra & Heemstra, 2004: 81; Compagno & Ebert, 2007: 139, fig. 6d; Ebert, 2014: 61, fig. 88; Ebert, 2015: 177, fig. 199; Last *et al*., 2016f: 22; Last *et al*., 2016g: 270, fig. 19.61; Weigmann, 2016: 946.

South Africa voucher material: Holotype: SAIAB 37. Non-types: SAIAB 12839, SAIAB 25191, SAIAB 25192, SAIAB 25756, SAIAB 25906, SAIAB 25907, SAIAB 25908, SAIAB 25909, SAIAB 25910, SAIAB 25911, SAIAB 25912, SAIAB 25913, SAIAB 25914, SAIAB 25915, SAIAB 25916, SAIAB 25917, SAIAB 25990, SAIAB 25991, SAIAB 25992, SAIAB 25993, SAIAB 25994, SAIAB 25995, SAIAB 25996, SAIAB 25997, SAIAB 25998, SAIAB 25999, SAIAB 26229, SAIAB 26230, SAIAB 26401, SAIAB 26402, SAIAB 26959, SAIAB 27573, SAIAB 48512.

South African distribution: The Orange River (NC) to at least Algoa Bay (EC). Records from off Durban (KZN) may be based on *D. campbelli*.

Remarks: This distinct species was often confused by earlier researchers as *Raja batis*, a European species, or with *Dipturus campbelli*, was once considered a junior synonym of *D. pullopunctatus*.

Conservation status: LC (2020).

***Dipturus springeri* (Wallace, 1967a)**

Roughbelly Skate

Raja springeri Wallace, 1967a: 18, figs. 9–10. Holotype: SAIAB [formerly RUSI] 989 [ex ORI B909]. Type locality:

48 kilometers east-southeast of Durban, KwaZulu-Natal, South Africa, Western Indian Ocean.

Local synonymy: ? *Raja batis*: Hulley, 1966: 512. *Raja springeri*: Wallace, 1967a: 18, figs. 9–10; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 125, fig. 25.20; Stehmann, 1995: 105. *Raja* (*Dipturus*) *springeri*: Compagno *et al*., 1989: 92, pl. (in part); Compagno *et al*., 1991: 96 (in part); Ebert *et al*., 1991: 76. *Dipturus springeri*: Compagno, 1999: 116 (in part); Compagno & Ebert, 2007: 139, fig. 6e (in part); Ebert & Compagno, 2007: 119; Ebert *et al*., 2008: 88; NPOA, 2013: 56 (in part); Ebert, 2014: 60, fig. 83; da Silva *et al*., 2015: 247 (in part); Ebert, 2015: 176, fig. 195 (in part?); Ebert & van Hees, 2015: 147 (in part); Last *et al*., 2016f: 22; Last *et al*., 2016g: 272, fig. 19.63; Weigmann, 2016: 946.

South Africa voucher material: Holotype: SAIAB 989 [ex ORI B 909].

South African distribution: KZN, but records from the EC and WC require confirmation due to confusion with the recently documented occurrence of *D. nidarosiensis* in South African waters.

Remarks: Until recently, this species was considered to occur from about Lüderitz, Namibia, south and all around the South African coast, and north to Kenya and east to Madagascar. However, the recent revelation that *D. nidarosiensis* occurs to South Africa highlights that a re-evaluation of these large *Dipturus* species is required to determine the extent of their range in the region.

Conservation status: LC (2019).

***Dipturus stenorhynchus* (Wallace, 1967a)**

Prownose Skate

Raja stenorhynchus Wallace, 1967a: 23, fig. 11. Holotype (unique): ORI B186. Type locality: East of Barra da Falsa, Mozambique, Western Indian Ocean, 22°25'S, 35°54'E.

Local synonymy: *Raja stenorhynchus*: Wallace, 1967a: 23, Fig. 11; Hulley, 1986: 126, fig. 25.20. *Raja* (*Dipturus*) *stenorhynchus*: Hulley, 1972a: 77; Compagno *et al*., 1989: 90, pl. *Dipturus stenorhynchus*: Compagno, 1999: 116; Compagno & Ebert, 2007: 139, fig. 6f; Ebert & Compagno, 2007: 119; Ebert *et al*., 2008: 89; Ebert, 2014: 61, fig. 85; Ebert, 2015: 177, fig. 197; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 22; Last *et al*., 2016g: 273, fig. 19.64; Weigmann, 2016: 946.

South Africa voucher material: Ebert *et al*. (2008) examined 31 uncatalogued specimens at SAM.

South African distribution: Off Plettenberg Bay (WC) to southeast of Algoa Bay (EC) and from off KZN.

Remarks: A little known skate with a patchy distribution off South Africa and Mozambique.

Conservation status: DD (2019).

Genus *Leucoraja* Malm, 1877

Rough Skates

Leucoraja Malm, 1877: 121. Type species: *Raja fullonica* Linnaeus, 1758, type by subsequent designation. Designated by Jordan, 1919: 391.

***Leucoraja compagnoi* (Stehmann, 1995)**

Tigertail Skate

Raja (*Leucoraja*) *compagnoi* Stehmann, 1995: 43, fig. 10. Holotype (unique) ZIN 48406. Type locality: Off South Africa, 30°44'S, 15°18'E.

Local synonymy: *Raja* (*Leucoraja*) *compagnoi*: Stehmann, 1995: 43, fig. 10. *Leucoraja compagnoi*: Compagno, 1999: 116; Compagno & Ebert, 2007: 133, fig. 4d; Ebert & Compagno, 2007: 120; Ebert *et al*., 2008: 90; Ebert, 2014: 68, fig. 105; Ebert, 2015: 179, fig. 201; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 18; Last *et al*., 2016g: 281, fig. 19.72; Weigmann, 2016: 948.

South Africa voucher material: Holotype: ZIN 48406. Ebert *et al*. (2008) examined 10 uncatalogued specimens at SAM.

South African distribution: Endemic. West coast northwest of Strandfontein (WC) to off Port Elizabeth (EC), and KZN.

Remarks: Known only from about a dozen specimens, all juveniles, it is likely misidentified with its more common congener *L. wallacei*. Adult specimens of this species should be saved and sent to either SAIAB or SAM.

Conservation status: DD (2019).

***Leucoraja wallacei* (Hulley, 1970)**

Yellowspot Skate

Raja wallacei Hulley, 1970: 210, fig. 19, pl. 12b. Holotype: ORI B.155. Type locality: Off Cape Town, 34°10'S, 17°45'E, South Africa.

Local synonymy: *Raia barnardi*: Smith, 1949a: 67, pl. 3 (in part); Smith, 1965: 67, pl. 3 (in part). *Raia caudaspinosa*: Smith, 1949a: 67, fig. 72 (in part); Smith, 1965: 67, fig. 72 (in part). *Raja barnardi*: Wallace, 1967a: 39, figs. 20–21. *Raja wallacei*: Hulley, 1970: 210, fig. b, pl. 12; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 127, fig. 25.23, pl. 6; Walmsley-Hart *et al*., 1999: 165. *Raja* (*Leucoraja*) *wallacei*: Compagno *et al*., 1989: 94, pl.; Compagno *et al*., 1991: 96; Ebert *et al*., 1991: 75. *Leucoraja wallacei*: Compagno, 1999: 116; Compagno & Ebert, 2007: 133, fig. 4e; Ebert & Compagno, 2007: 120; Ebert *et al*., 2008: 91; NPOA, 2013: 56; da Silva *et al*., 2015: 247; Ebert, 2014: 69, fig. 108; Ebert, 2015: 179, fig. 203; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 19; Last *et al*., 2016g: 291, fig. 19.82; Weigmann, 2016: 949.

South Africa voucher material: Holotype: ORI B.155. Paratype: ORI B.126. Non-types: SAIAB 7841, SAIAB 8262, SAIAB 21914, SAIAB 25750, SAIAB 25979, SAIAB 25980, SAIAB 25981, SAIAB 25982, SAIAB 25983, SAIAB 25984, SAIAB 25985, SAIAB 25986, SAIAB 25988, SAIAB 25989, SAIAB 26233, SAIAB 26234, SAIAB 26235, SAIAB 26236, SAIAB 26237, SAIAB 26238, SAIAB 26239, SAIAB 26240, SAIAB 26248, SAIAB 26249, SAIAB 26250, SAIAB 26290, SAIAB 26328, SAIAB 26329, SAIAB 26397, SAIAB 26398, SAIAB 26399, SAIAB 26400, SAIAB 26438, SAIAB 26457, SAIAB 26458, SAIAB 26459, SAIAB 26460, SAIAB 26461, SAIAB 26462, SAIAB 26463, SAIAB 26887, SAIAB 26888, SAIAB 26889, SAIAB 26890, SAIAB 26891, SAIAB 26892, SAIAB 26893, SAIAB 40957, SAIAB 40958, SAIAB 48519, SAIAB 189019.

South African distribution: The Orange River (NC) to northern KZN, but most common off the west and south coasts (Compagno & Ebert, 2007).

Remarks: This is the more abundant of the two *Leucoraja* species and one of the most common skate species occurring off South Africa.

Conservation status: VU (2020).

Genus *Malacoraja* Stehmann, 1970

Soft Skates

Malacoraja (subgenus of *Raja*) Stehmann, 1970: 151. Type species: *Raja mollis* Bigelow & Schroeder, 1950, type by original designation.

***Malacoraja spinacidermis* (Barnard, 1923)**

Roughskin Skate

Raia spinacidermis Barnard, 1923: 440. Holotype (unique): BMNH 1935.7.19.7. Type locality: South Africa (exact locality unknown).

Local synonymy: *Raia spinacidermis*: Barnard, 1923: 440; Barnard, 1925: 73, fig. 6, pl. 4: Fowler, 1941: 392; Smith, 1949a: 66 (in part, South Africa, not *Raia durbanensis*, in synonymy); Smith, 1965: 66 (in part, South Africa). ? *Raia plutonia*: Barnard, 1925: 68 (in part, also including holotype of *Raia albalinea* von Bonde & Swart, 1923 = *R. caudaspinosa*). *Raja spinacidermis*: Norman, 1935: 46; Hulley, 1970: 173, pl. 4; Hulley, 1972a: 86, figs. 58–59; Hulley & Stehmann, 1977: 227, figs. 1–5; Hulley, 1986: 125, fig. 25.19. *Raja* (*Malacoraja*) *spinacidermis*: Compagno *et al*., 1989, pl.; Compagno *et al*., 1991: 97; Ebert *et al*., 1991: 76. *Malacoraja spinacidermis*: Compagno, 1999: 116; Stehmann, 1995: 28; Compagno & Ebert, 2007: 137, fig. 5e; Ebert & Compagno, 2007: 120; Ebert *et al*., 2008: 91; NPOA, 2013: 55; da Silva *et al*., 2015: 247; Ebert, 2015: 181, fig. 205; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 23; Last *et al*., 2016g: 296, fig. 19.87; McEachran & Séret, 2016: 1386; Séret, 2016: 1345; Weigmann, 2016: 950.

South Africa voucher material: Holotype: BMNH 1935.7.19.7. Non-type: SAIAB 27330.

South African distribution: The Orange River (NP) to Cape Point (WC).

Remarks: This species also occurs in the North Atlantic, but its distribution north of South Africa is patchy. Morphological and molecular comparison of specimens from South Africa and the North Atlantic may confirm if it is the same species or if they are different.

Conservation status: LC (2020).

Genus *Neoraja* McEachran & Compagno, 1982

Pygmy Skates

Neoraja McEachran & Compagno, 1982: 422. Type species: *Breviraja caerulea* Stehmann, 1976, type by original designation.

***Neoraja stehmanni* (Hulley, 1972)**

African Pygmy Skate

Breviraja stehmanni Hulley, 1972b: 254, figs. 1–5. Holotype: SAM 26636. Type locality: Cape Basin, South Africa.

Local synonymy: ? *Raia plutonia*: Barnard, 1925: 68 (in part). *Breviraja stehmanni*: Hulley, 1972b: 254, figs. 1–5. *Neoraja* (*Neoraja*) *stehmanni*: Hulley, 1986: 118, fig. 25.5. *Neoraja stehmanni*: Compagno *et al*., 1989: 88, pl.; Compagno *et al*. 1991: 93; Ebert *et al*., 1991: 76; Stehmann, 1995: 104; Compagno, 1999: 116; Compagno & Ebert, 2007: 137, fig. 5f; Ebert & Compagno, 2007: 120; Ebert *et al*., 2008: 92; Ebert, 2014: 71, fig. 110; Ebert, 2015: 183, fig. 207; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 24; Last *et al*., 2016g: 301, fig. 19.92; Weigmann, 2016: 950.

South Africa voucher material: Holotype: SAM 26636. Non-types: SAIAB 54532, SAIAB 54999, SAIAB 64275.

South African distribution: Endemic. Occurs from southwest of the Orange River (NC) to south of Cape Point and east to Algoa Bay (EC), with a population concentration between Saldanha Bay and Cape Point.

Remarks: This is one of the smallest southern African skate species and is endemic to South Africa. Its distribution appears to be very localized compared to other regional skate species.

Conservation status: LC (2019).

Genus *Raja* Linnaeus, 1758

Ocellate Skates

Raja Linnaeus, 1758: 231. Type species: *Raja miraletus* Linnaeus, 1758, type by subsequent designation.

***Raja ocellifera* Regan, 1906a**

Twineyed Skate

Raja ocellifera Regan, 1906a: 2, Pl. 2. Syntypes: BMNH 1905.6.8.14 (1), NMP (1); probable syntype BMNH 1895.12.27.14 (1). Type locality: Algoa Bay, northeast of Bird Island, Eastern Cape, South Africa.

Local synonymy: *Raia ocellifera*: Regan, 1906a: 2, Pl. 2; Regan, 1908a: 242; Garman, 1913: 365 (South Africa, in part); Gilchrist & Thompson, 1916; 270; von Bonde & Swart, 1923: 5; Barnard, 1925: 67; Fowler, 1925b: 193; von Bonde, 1933: 51; Barnard, 1947: 26, fig. 2, pl. 4; Smith, 1949a: 66, pl. 3; Smith, 1964: 285; Smith, 1965: 66, pl. 3. *Raja ocellifera*: Thompson, 1914: 158; Norman, 1935: 42; Fowler, 1941: 375; Hulley, 1969: 137, figs. 1–3; Last & Séret, 2016: 477; Last *et al*., 2016f: 23; Last *et al*., 2016g: 326, fig. 19.117. *Raja miraletus*: Thompson, 1914: 158; Fowler, 1936: 114; Fowler, 1941: 375 (in part, including *Raia parcomaculata* in synonymy); Wallace, 1967a: 31, figs. 16–17; Hulley, 1969: 137, figs, 1–2c; Hulley, 1970: 179, fig. 9, pl. 7b; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 123, fig. 25.14, pl. 6; Stehmann, 1995: 106; Compagno, 1999: 116; Heemstra & Heemstra, 2004: 81; Compagno & Ebert, 2007: 139, fig. 7a; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 92; NPOA, 2013: 54; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 147; Weigmann, 2016: 955. *Raia miraletus*: von Bonde & Swart, 1923: 5; Barnard, 1925: 68 (in part, not types of *Cruriraja parcomaculata*); Clark, 1926: 9 (Cape Colony, Mossel Bay). *Raja* (*Raja*) *miraletus*: Compagno *et al*., 1989: 96, pl.; Compagno *et al*., 1991: 102.

South Africa voucher material: Syntypes: BMNH 1905.6.8.14 (1), NMP (1); Probable syntype: BMNH 1895.12.27.14 (1). Non-types: SAIAB 7842, SAIAB 8067, SAIAB 8270, SAIAB 11148, SAIAB 11149, SAIAB 11150, SAIAB 12007, SAIAB 12031, SAIAB 12194, SAIAB 13313, SAIAB 14621, SAIAB 16518, SAIAB 17227, SAIAB 17414, SAIAB 26903, SAIAB 26904, SAIAB 26905, SAIAB 26906, SAIAB 26907, SAIAB 27152, SAIAB 27153, SAIAB 27154, SAIAB 27155, SAIAB 27156, SAIAB 44240, SAIAB 44250.

South African distribution: Possibly endemic to South Africa. Confirmed from Western Cape to Port Alfred (EC) and from Durban to Richards Bay (KZN). Records outside of South Africa require confirmation.

Remarks: Recent molecular and morphological data reveal that the South African form is distinct from other similar

species in the Eastern Atlantic. The reported range from southern Namibia to KZN, and possibly extending to Kenya, requires confirmation as records from north of South Africa may represent different species.

Conservation status: EN (2020).

***Raja straeleni* Poll, 1951**

Biscuit Skate

Raja straeleni Poll, 1951: 118, fig. 54, pls. 8 (fig. 3). Syntypes: IRSNB 99 (1), 100-107 (1, 1, 2, 1, 3, 1, 2, 9); MRAC 80327-32 (6). Type locality: Off Angola, 13°05'S, 12°46'E.

Local synonymy: *Raja clavata*: Gilchrist, 1922a: 7; Fowler, 1936: 110; Fowler, 1941: 360; Hulley, 1966: 508, fig. 8; Wallace, 1967a: 35, figs. 4, 18–19; Hulley, 1970: 183, fig. 10, pl. 6a; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 120, fig. 25.7, pl. 6. *Raia clavata*: Barnard, 1925: 64, fig. 2, pl. 4 (in part?); von Bonde, 1934: 16; Barnard, 1959: 26, fig. 1, pl. 4. *Raja bonae-speiensis*: Fowler, 1910: 468 (replacement name for *Raja capensis* Müller & Henle, 1841). *Raja capensis*: Müller & Henle, 1841: 151; Gray, 1851: 112; Bleeker, 1860b: 58; Duméril, 1865: 540, figs. 11–12, pl. 12; Günther, 1870: 455; Gilchrist, 1902: 168; Thompson, 1914: 157; Gilchrist, 1921: 34. *Raia capensis*: von Bonde & Swart, 1923: 4. *Raia maculata*: ? Barnard, 1925: 71; ? von Bonde, 1933: 32. *Raja maculata*: ? Bleeker, 1860: 58b; ? Gilchrist, 1902: 168; ? Thompson, 1914: 157. *Raia oculata*: ? von Bonde & Swart, 1923: 4. *Raia ocellifera*: Garman, 1913: 365 (South Africa, in part, *R. capensis* and *R. rhizacanthus* in synonymy). *Raia quadrimaculata*: ? von Bonde & Swart, 1923: 5; ? von Bonde, 1934: 16. *Raia rhizacanthus*: Regan, 1906a: 3, pl. 3; Regan, 1908a: 242; Gilchrist & Thompson, 1916: 288; von Bonde & Swart, 1923: 5; Smith, 1949a: 66; Smith, 1965: 66. *Raja rhizacanthus*: Thompson, 1914: 158; Norman, 1935: 40; Smith & Smith, 1966: 29, fig.; Hulley, 1966: 499 (= *Raja clavata*). ? *Raia smithi*: Smith, 1949a: 66, pl. 3 (in part ?); Smith, 1965: 66, pl. (in part ?). *Raja straeleni*: Hulley, 1970: 187, fig. 11, pl. 6b; Stehmann, 1971: 187, figs. 8–13; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 126, fig. 25.22; Compagno *et al*., 1989: 94, pl.; Stehmann, 1995: 49; Compagno, 1999: 117; Heemstra & Heemstra, 2004: 80; Compagno & Ebert, 2007: 141, fig. 7c; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 93; NPOA, 2013: 56; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 147; Last & Séret, 2016: 477; Last *et al*., 2016f: 23; Last *et al*., 2016g: 331, fig. 19.122; McEachran & Séret, 2016: 1393; Weigmann, 2016: 955. *Raja* (*Raja*) cf. *clavata*: Compagno *et al*., 1991: 98; Ebert *et al*., 1991: 75.

South Africa voucher material: SAIAB 11928, SAIAB 11954, SAIAB 21888, SAIAB 21889, SAIAB 21890, SAIAB 21891, SAIAB 21892, SAIAB 21893, SAIAB 21894, SAIAB 21895, SAIAB 25738, SAIAB 25822, SAIAB 25823, SAIAB 25824, SAIAB 25826, SAIAB 25827, SAIAB 25828, SAIAB 25829, SAIAB 25830, SAIAB 25831, SAIAB 25832, SAIAB 25833, SAIAB 25834, SAIAB 25835, SAIAB 25836, SAIAB 25837, SAIAB 25838, SAIAB 25839, SAIAB 25840, SAIAB 25841, SAIAB 25842, SAIAB 25843, SAIAB 25844, SAIAB 25845, SAIAB 25846, SAIAB 25847, SAIAB 25848, SAIAB 25849, SAIAB 25850, SAIAB 25851, SAIAB 25852, SAIAB 25853, SAIAB 25854, SAIAB 25855, SAIAB 25856, SAIAB 25857, SAIAB 25858, SAIAB 25859, SAIAB 25860, SAIAB 25972, SAIAB 25973, SAIAB 25974, SAIAB 25975, SAIAB 25976, SAIAB 25977, SAIAB 25978, SAIAB 25987, SAIAB 26243, SAIAB 26244, SAIAB 26245, SAIAB 26246, SAIAB 26247, SAIAB 26292, SAIAB 26406, SAIAB 26407, SAIAB 26408, SAIAB 26409, SAIAB 26410, SAIAB 26411, SAIAB 26412, SAIAB 26413, SAIAB 26414, SAIAB 26415, SAIAB 26464, SAIAB 26465, SAIAB 26908, SAIAB 26909, SAIAB 26910, SAIAB 26911, SAIAB 26916, SAIAB 26917, SAIAB 26963, SAIAB 44298, SAIAB 48512, SAIAB 48518.

South African distribution: The Orange River (NC) to Algoa Bay (EC), possibly to southern KZN, but requires confirmation.

Remarks: The most abundant and common skate species in South Africa. It has been referred to other species including *R. clavata*. The dorsal color pattern is quite variable, ranging from strikingly ornate pattern to rather plain brown. Whether these variable patterns represent discrete subpopulations is uncertain.

Conservation status: DD (2009).

Genus *Rajella* Stehmann, 1970

Gray Skates

Rajella (subgenus of *Raja*) Stehmann, 1970: 151. Type species: *Raja fyllae* Lütken 1887, type by original designation.

***Rajella barnardi* (Norman, 1935)**

Bigthorn Skate

Raja barnardi Norman, 1935: (39) 43, fig. 14. Holotype (unique): BMNH 1935.5.2.65. Type locality: Off Cape Town, South Africa, 34°S, l7°58'E, southeastern Atlantic.

Local synonymy: *Raja barnardi*: Norman, 1935: (39) 43, fig. 14; Stehmann, 1995: 51. *Raja confundens*: Hulley, 1970: 203, figs. 17a–c, pls. 11a–b; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 121, fig. 25.9. *Raja* (*Rajella*) *confundens*: Compagno *et al*., 1989: 98, pl.; Compagno *et al*. 1991: 104; Ebert *et al*., 1991: 77. *Rajella barnardi*: Stehmann, 1995: 51; Compagno, 1999: 117; Compagno & Ebert, 2007: 135, fig. 4f; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 94; Ebert, 2014: 75, fig. 122; Ebert, 2015: 185, fig. 213; NPOA, 2013: 54; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 19; Last *et al*., 2016g: 334, fig. 19.125; McEachran & Séret, 2016: 1394; Weigmann, 2016: 957.

South Africa voucher material: SAIAB 7889 [ex ORI B155], SAIAB 11154, SAIAB 25791, SAIAB 25792, SAIAB 25793, SAIAB 25794, SAIAB 25795, SAIAB 25796, SAIAB 25797, SAIAB 25798, SAIAB 25799, SAIAB 25800, SAIAB 25801, SAIAB 25802, SAIAB 48831, SAIAB 48837.

South African distribution: The Orange River (NC) to Algoa Bay (EC).

Remarks: Hulley (1970) who described *Raja confundens* as a new species synonymized *Rajella barnardi* as a junior synonym of *R. leoparda*. However, Stehmann (1995) examined the holotypes of both and revived *R. barnardi* as a valid species and synonymized *R. confundens* as a junior synonym.

Conservation status: LC (2004).

***Rajella caudaspinosa* (von Bonde & Swart, 1923)**

Munchkin Skate

Raia caudaspinosa von Bonde & Swart, 1923: 8, fig. 1, pl. 21. Holotype (unique): whereabouts unknown. Type locality: KwaZulu-Natal, South Africa, southwestern Indian Ocean.

Local synonymy: *Raia caudaspinosa*: Smith, 1949a: 67, not fig. 72 (= *Leucoraja wallacei*, in part); Smith, 1965: 67 (in part, not fig. 72). *Raia albalinea*: von Bonde & Swart, 1923: 6, fig. 1, pl. 20. *Raia plutonia*: Barnard, 1925: 68 (in part, for types of *Raia albalinea*). *Raja caudaspinosa*: Norman, 1935: 37; Fowler, 1941: 376; Hulley, 1970: 170, fig. 7a–c, pl. 3a–b; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 120, fig. 25.7; Stehmann, 1995: 109. *Raja* (*Rajella*) *caudaspinosa*: Compagno *et al*., 1989: 96, pl.; Compagno *et al*., 1991: 103; Ebert *et al*., 1991: 77. *Rajella caudaspinosa*: Compagno, 1999: 117; Compagno & Ebert, 2007: 135, fig. 5a; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 94; NPOA, 2013: 53; Ebert, 2014: 76, fig. 123; Weigmann *et al*., 2014a: 384; da Silva *et al*., 2015: 247; Ebert, 2015: 185, fig. 210; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 19; Last *et al*., 2016g: 337, fig. 19.122; Weigmann, 2016: 958;

South Africa voucher material: SAIAB 21912, SAIAB 25740, SAIAB 25742, SAIAB 25743, SAIAB 25747, SAIAB 25751, SAIAB 25782, SAIAB 25783, SAIAB 25784, SAIAB 26002, SAIAB 26003, SAIAB 26004, SAIAB 26005, SAIAB 26006, SAIAB 26007, SAIAB 26008, SAIAB 26009, SAIAB 26010, SAIAB 26330, SAIAB 26331, SAIAB 26332, SAIAB 26333, SAIAB 26334, SAIAB 26393, SAIAB 26394, SAIAB 26395, SAIAB 26396, SAIAB 40952, SAIAB 44354, SAIAB 64277.

South African distribution: The Orange River (NC) to Algoa Bay (EC), with at least one record from KZN.

Remarks: The species is near endemic to South Africa with most records from south of the Orange River to Cape Point, and with only a few scattered records between Algoa Bay and KZN. It reportedly occurs to south of Lüderitz, southern Namibia, but during a series of research surveys no specimens were caught north of the Orange River (Compagno *et al*., 1991; Compagno & Ebert, 2007).

Conservation status: LC (2019).

***Rajella dissimilis* (Hulley, 1970)**

Ghost Skate

Raja dissimilis Hulley, 1970: 199, figs. 15, pl. 10 (figs. a–b). Holotype: ZMH 25258 [ex ISH 46-1967a]. Type locality: West of Cape Town, South Africa, 33°47'S, 17°14'E, southeastern Atlantic.

Local synonymy: *Raja dissimilis*: Hulley, 1970: 199, figs. 15, pl. 10; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 121, fig. 25.10; Stehmann, 1995: 79. *Raja* (*Rajella*) *dissimilis*: Compagno *et al*., 1989: 98, pl.; Compagno *et al*., 1991: 104; Ebert *et al*., 1991: 77. *Rajella dissimilis*: Compagno, 1999: 116; Compagno & Ebert, 2007: 135, fig.

5b; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 95; Ebert, 2014: 75, fig. 120; Ebert, 2015: 185, fig. 211; Weigmann *et al*., 2014a: 384; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 19; Last *et al*., 2016g: 339, fig. 19.130; McEachran & Séret, 2016: 1402; Weigmann, 2016: 958.

South Africa voucher material: Holotype: ZMH 25258. Non-types: SAIAB 27140, SAIAB 27141, SAIAB 27142, SAIAB 53231.

South African distribution: The Orange River (NC) to St Francis Bay (EC).

Remarks: A little known, deep-sea skate that is often misidentified with other similar "grey" skates, but its distribution is now known to include northwest Africa.

Conservation status: LC (2004).

***Rajella leoparda* (von Bonde & Swart, 1923)**

Leopard Skate

Raia leopardus von Bonde & Swart, 1923: 7, fig. 2, pl. 20. Syntypes: (several) BMNH 1935.7.14.2-3 (2). Type locality: KwaZulu-Natal, South Africa, southwestern Indian Ocean.

Local synonymy: *Raia leopardus*: von Bonde & Swart, 1923: 7, fig. 2, pl. 20; Barnard, 1925: 74; Smith, 1949a: 67, fig. 73; Smith, 1965: 67, fig. 73. *Raia quadrimaculata*: ? von Bonde & Swart, 1923: 5; Barnard, 1925: 70, fig. 5, pl. 4; ? von Bonde, 1934: 16. *Raia lintea*: Barnard, 1925: 72 (in part?). *Raia naevus*: Barnard, 1925: 72 (in part?). *Raja leopardus*: Norman, 1935: 37; Fowler, 1941: 390; Hulley, 1970: 206, figs. 18a–c, pls. 12a–b; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 122, fig. 25.13; Stehmann, 1995: 87. ? *Raja barnardi*: Norman, 1935: 37, fig. 14; Fowler, 1941: 371. *Raja* (*Rajella*) *leopardus*: Compagno *et al*., 1989: 98, pl.; Compagno *et al*., 1991: 105; Ebert *et al*., 1991: 77. *Rajella leopardus*: Compagno, 1999: 117; Compagno & Ebert, 2007: 135, fig. 5c; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 95; NPOA, 2013: 54; Ebert, 2014: 75, fig. 121; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 147. *Rajella leoparda*: Ebert, 2015: 186, fig. 214; Weigmann, *et al*., 2014a: 383; Last *et al*., 2016f: 19; Last *et al*., 2016g: 344, fig. 19.135; McEachran & Séret, 2016: 1402; Weigmann, 2016: 958.

South Africa voucher material: SAIAB 21919, SAIAB 21920, SAIAB 21921, SAIAB 21922, SAIAB 25739, SAIAB 25741, SAIAB 25765, SAIAB 25771, SAIAB 25803, SAIAB 25804, SAIAB 25805, SAIAB 25806, SAIAB 25807, SAIAB 25808, SAIAB 25809, SAIAB 25810, SAIAB 25811, SAIAB 25812, SAIAB 25813, SAIAB 25814, SAIAB 25815, SAIAB 25816, SAIAB 25817, SAIAB 25818, SAIAB 25819, SAIAB 25820, SAIAB 25821, SAIAB 25937, SAIAB 25938, SAIAB 25939, SAIAB 25940, SAIAB 25941, SAIAB 25942, SAIAB 25943, SAIAB 25944, SAIAB 25945, SAIAB 25946, SAIAB 25947, SAIAB 25948, SAIAB 25949, SAIAB 25950, SAIAB 25951, SAIAB 25952, SAIAB 25953, SAIAB 26241, SAIAB 26252, SAIAB 26291, SAIAB 26326, SAIAB 26327, SAIAB 26405, SAIAB 26918, SAIAB 27149, SAIAB 27150, SAIAB 27151, SAIAB 27570, SAIAB 27571, SAIAB 34845, SAIAB 40954, SAIAB 40955, SAIAB 40956, SAIAB 40961, SAIAB 40962, SAIAB 40963, SAIAB 40964, SAIAB 40965, SAIAB 40966, SAIAB 40967, SAIAB 40968, SAIAB 40969, SAIAB 40970, SAIAB 44241, SAIAB 53230, SAIAB 64274.

South African distribution: The Orange River (NC) to Algoa Bay (EC).

Remarks: The most common deep-sea skate of the upper continental slopes along the west coast of South Africa from the Orange River to Cape Point.

Conservation status: LC (2018).

***Rajella ravidula* (Hulley, 1970)**

Smoothback Skate

Raja ravidula Hulley, 1970: 196, figs. a–b, pl. 9. Holotype: ZMH 25261 [ex ISH 50-1967]. Type locality: West of Cape Town, South Africa, 33°49'S, 17°13'E.

Local synonymy: *Raja ravidula*: Hulley, 1970: 196, figs. a–b, pl. 9; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 124, fig. 25.17; Stehmann, 1995: 93. *Raja* (*Rajella*) *ravidula*: Compagno *et al*., 1989: 100, pl.; Compagno *et al*., 1991: 107; Ebert *et al*., 1991: 79. *Rajella ravidula*: Compagno, 1999: 117; Compagno & Ebert, 2007: 137, fig. 5d; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 96; NPOA, 2013: 55; Ebert, 2014: 75, fig. 117; Weigmann *et al*., 2014a: 384; da Silva *et al*., 2015: 247; Ebert, 2015: 185, fig. 209; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 19; Last *et al*., 2016g: 349, fig. 19.122; McEachran & Séret, 2016: 1403; Weigmann, 2016: 959.

South Africa voucher material: Ebert *et al*. (2008) examined 19 uncatalogued specimens in the SAM collection.
South African distribution: The Orange River (NC) to southwest of Cape Point (WC).
Remarks: A very poorly known skate from the upper continental slopes off the west coast of South Africa.
Conservation status: LC (2019).

Genus *Rostroraja* Hulley, 1972
Spearnose Skates
Rostroraja (subgenus of *Raja*) Hulley, 1972: 77. Type species: *Raja alba* Lacepède 1803, type by original designation.

***Rostroraja alba* Lacepède, 1803**
Spearnose Skate
Raja alba Lacepède, 1803: 661, 663, Pl. 20 (Fig. 1). No types known. Type locality: France, La Manche/English Channel.
Local synonymy: *Raia marginata*: Regan, 1908a: 242; Gilchrist & Thompson, 1916: 270; Barnard, 1925: 65, fig. 1, pl. 4; Clark, 1926: 47, pls. 28–30, 31a (South Africa); von Bonde, 1933: 41; von Bonde, 1934: 16; Barnard, 1947: 26, fig. 11, pl. 3. *Raja marginata*: Thompson, 1914: 158. *Raia alba*: von Bonde & Swart, 1923: 5; Smith, 1949a: 66, fig. 67; Smith, 1964: 285; Smith, 1965: 66, fig. 67. *Raja alba*: Norman, 1935: 37; Fowler, 1941: 365; Hulley, 1966: 497, fig. 8; Wallace, 1967a: 27, figs. 13–15; Hulley, 1969: 137; Hulley, 1970: 176, figs. 8a–c, pls. 5a–b; Hulley, 1972a: 86, figs. 58–59; Hulley, 1986: 119, fig. 25.6; Stehmann, 1995: 104. *Raja* (*Rostroraja*) *alba*: Compagno *et al*., 1989: 94, pl.; Compagno *et al*., 1991: 107; Ebert *et al*., 1991: 73. *Rostroraja alba*: Compagno, 1999: 117; Heemstra & Heemstra, 2004: 81; Compagno & Ebert, 2007: 141, fig. 7d; Ebert & Compagno, 2007: 121; Ebert *et al*., 2008: 96; NPOA, 2013: 53; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 24; Last *et al*., 2016g: 352, fig. 19.143; McEachran & Séret, 2016: 1403; Weigmann, 2016: 959.
South Africa voucher material: SAIAB 7839, SAIAB 7840, SAIAB 7841, SAIAB 7854, SAIAB 7864, SAIAB 7881, SAIAB 8065, SAIAB 8531, SAIAB 10093, SAIAB 11152, SAIAB 11153, SAIAB 11927, SAIAB 12682, SAIAB 12835, SAIAB 13298, SAIAB 16424, SAIAB 25748, SAIAB 25969, SAIAB 26900, SAIAB 26901, SAIAB 26902, SAIAB 41538, SAIAB 41539, SAIAB 44247, SAIAB 48528, SAIAB 48529, SAIAB 189149, SAIAB 189150.
South African distribution: The Orange River (NC) to Kosi Bay (KZN).
Remarks: One of the largest known skates, growing up to 250 cm TL. The population in South Africa appears to be centered along the west coast to Algoa Bay.
Conservation status: EN (2006).

Family Anacanthobatidae von Bonde & Swart, 1923
Legskates

Genus *Anacanthobatis* von Bonde & Swart, 1923
Smooth Legskates
Anacanthobatis von Bonde & Swart, 1923: errata [18]. Type species: *Anacanthobatis marmoratus* von Bonde & Swart, 1923, type by subsequent designation.

***Anacanthobatis marmorata* (von Bonde & Swart, 1923)**
Spotted Legskate
Leiobatis marmoratus von Bonde & Swart, 1923: 18, pl. 23. Lectotype: SAIAB [formerly RUSI] 662 selected by Hulley, 1973: 133. Type locality: KwaZulu-Natal coast, 30°09'45"S, 30°58'02"E, South Africa, southwestern Indian Ocean.
Local synonymy: *Leiobatis marmoratus*: von Bonde & Swart, 1923: 18, pl. 23; Fowler, 1941: 448. *Leiobatis dubius*: von Bonde & Swart, 1923: 19 (originally published with genus *Leiobatis*, but separate errata sheet says that it should be *Anacanthobatis*); Fowler, 1941: 448. *Anacanthobatis marmoratus*: Barnard, 1925: 79; Fowler, 1941: 448; Smith, 1949a: 71, fig. 84; Bigelow & Schroeder, 1953: 327; Barnard, 1959: 27, fig., 4; Smith, 1961a:

71, fig. 84; Smith, 1965: 71, fig. 84; Wallace, 1967a: 43, figs 22–23; Hulley, 1973: 131; Hulley, 1986: 126, fig. 26.1; Compagno *et al*., 1989: 86, pl.; Compagno, 1999: 117; Compagno & Ebert, 2007: 141, fig. 7e; Ebert & Compagno, 2007: 122; Ebert, 2014: 55, fig. 73; Ebert & van Hees, 2015: 147. *Springeria dubia*: Bigelow & Schroeder, 1953: 328. *Anacanthobatis marmorata*: Séret *et al*., 2016c: 496, fig. 22.1; Weigmann, 2016: 961.

South Africa voucher material: SAIAB [formerly RUSI] 662, SAIAB 10430.

South African distribution: Known from a few records off KZN.

Remarks: A regional endemic to KZN and Mozambique. There are two WC records from near Mossel Bay, but these require confirmation since this area has been heavily surveyed without a single specimen being captured (von Bonde, 1933: Compagno & Ebert, 2007).

Conservation status: NT (2020).

Family Gurgesiellidae de Buen, 1959

Pygmy Skates

Genus *Cruriraja* Bigelow & Schroeder, 1948a

Rough Legskates

Cruriraja Bigelow & Schroeder, 1948a: 549. Type species: *Cruriraja atlantis* Bigelow & Schroeder, 1948a. Type by original designation.

***Cruriraja durbanensis* (von Bonde & Swart, 1923)**

Smoothnose Legskate

Raia durbanensis von Bonde & Swart, 1923: 11, fig. 1, pl. 22. Syntypes: (2) whereabouts unknown. Type locality: Hondeklip Bay, southwestern South Africa, southeastern Atlantic.

Local synonymy: *Raia durbanensis*: von Bonde & Swart, 1923: 11, fig. 1, pl. 22; Barnard, 1925: 69. *Cruriraja durbanensis*: Bigelow & Schroeder, 1948a: 550; Bigelow & Schroeder, 1953: 315; Bigelow & Schroeder, 1962: 199; Smith, 1964: 287; Wallace, 1967a: 7; Hulley, 1970: 156, fig. 3; Hulley, 1986: 116, fig. 25.2; Compagno *et al*., 1989: 84, pl. Compagno *et al*., 1991: 91; Ebert *et al*., 1991: 79; Stehmann, 1995: 103; Compagno, 1999: 117; Compagno & Ebert, 2007: 141, fig. 8a; Ebert & Compagno, 2007: 122; Aschliman *et al*., 2010: 370; Ebert, 2015: 174, fig. 191; Ebert & van Hees, 2015: 147; Weigmann, 2016: 963; Weigmann *et al*., 2016a: 478, fig. 21.4. *Raia spinacidermis*: Smith, 1949a: 66 (in part *Raia durbanensis* in synonymy); Smith, 1965: 66 (in part).)

South Africa voucher material: Syntypes, 2 specimens both lost. No other known specimens available.

South African distribution: Endemic. Hondeklip Bay (NC).

Remarks: The only two known specimens are lost and to date no other specimens of this species have been observed despite extensive surveys along the west coast. The specific name "*durbanensis*" is misleading since the only known specimens were caught off the west coast in very deepwater.

Conservation status: DD (2019).

***Cruriraja hulleyi* Aschilman, Ebert, & Compagno, 2010**

Roughnose Legskate

Cruriraja hulleyi Aschilman, Ebert, & Compagno, 2010: 364, figs. 1, 2a–b, 3a–b. Holotype: SAM 37618. Type locality: Off Port Elizabeth, South Africa, ca. 34°29.6'S, 25°28.3'E.

Local synonymy: *Raia miraletus*: Barnard, 1925: 68 (in part, for types of *C. parcomaculata*); Fowler, 1941: 375 (in part, KZN, South Africa), also including *Raia parcomaculata* von Bonde & Swart, 1923 (in synonymy). *Cruriraja parcomaculata* (*non* von Bonde & Swart = *C. hulleyi* Aschilman *et al*., 2010): Smith, 1964: 288, pls. 26–27 (Algoa Bay, EC); Hulley, 1970: 157, fig. 4, pl. 1a (in part); Hulley, 1972a: 86, figs. 58–59 (in part); Hulley, 1986: 117, fig. 25.3 (in part); Compagno *et al*., 1989: 84, pl. (in part); Compagno *et al*., 1991: 92; Ebert *et al*., 1991: 73; Stehmann, 1995: 103; Compagno, 1999: 117. *Raja caudaspinosa* (*non* von Bonde & Swart): Norman, 1935: 43 (in part). *Raia smithi*: Smith, 1949a: 66, fig. 68 (in part, South Africa, thought to be young of *Bathyraja smithii*); Smith, 1961a: 66, fig. 68; Smith, 1965: 66, fig. 68 (in part, South Africa). *Cruriraja* '*parcomaculata*' *sensu* (Smith, 1964) (not von Bonde & Swart, 1923): Compagno & Ebert, 2007: 141, fig. 8b; Ebert & Compagno, 2007: 122; Ebert *et al*., 2008: 84. *Cruriraja hulleyi*: Aschilman *et al*., 2010: 364, figs. 1,

2a–b, 3a–b; Ebert, 2014: 174, fig. 193; Ebert, 2015: 58, fig. 79; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 29; Weigmann *et al*., 2016a: 479, fig. 19.143; Weigmann, 2016: 963.

South Africa voucher material: Holotype: SAM 37618. Paratype: SAM 37619. Non-types: SAIAB 12844, SAIAB 21910, SAIAB 21911, SAIAB 21934, SAIAB 21935, SAIAB 22509, SAIAB 25744, SAIAB 25749, SAIAB 25752, SAIAB 25861, SAIAB 25862, SAIAB 25863, SAIAB 25864, SAIAB 25865, SAIAB 25866, SAIAB 25867, SAIAB 25868, SAIAB 25869, SAIAB 25870, SAIAB 25871, SAIAB 25872, SAIAB 25873, SAIAB 25874, SAIAB 25875, SAIAB 25876, SAIAB 25877, SAIAB 26011, SAIAB 26167, SAIAB 26168, SAIAB 26169, SAIAB 26170, SAIAB 26171, SAIAB 26172, SAIAB 26173, SAIAB 26174, SAIAB 26242, SAIAB 26251, SAIAB 26377, SAIAB 26378, SAIAB 26379, SAIAB 26380, SAIAB 26381, SAIAB 26437, SAIAB 26894, SAIAB 26895, SAIAB 26896, SAIAB 26897, SAIAB 26898, SAIAB 26899, SAIAB 27574, SAIAB 44297, SAIAB 48513, SAIAB 48522, SAIAB 189748.

South African distribution: The Orange River (NC) to Algoa Bay (EC) and possibly to East London (EC).

Remarks: Compagno & Ebert (2007) raised the issue that *C. triangularis* is actually *C. parcomaculata* and that the Eastern and Western Cape *Cruriraja* was an undescribed species. Aschilman *et al*. (2010) reviewed the issue and described a new species, *C. hulleyi*, from the Eastern and Western Cape.

Conservation status: LC (2019).

***Cruriraja parcomaculata* (von Bonde & Swart, 1923)**

Triangular Legskate

Raia parcomaculata von Bonde & Swart, 1923: 9, fig. 2, pl. 21. Syntypes: (several) BMNH 1935.7.14.1 (1). Type locality: KwaZulu-Natal, South Africa.

Local synonymy: *Raja parcomaculata*: von Bonde & Swart, 1923: 9, fig. 2, pl. 21; Norman, 1935: 46 (KZN, South Africa). *Raia miraletus*: Barnard, 1925: 68 (in part, for types of *C. parcomaculata*); Fowler, 1941: 375 (in part, KZN, South Africa), also including *Raia parcomaculata* von Bonde & Swart, 1923 (in synonymy). *Cruriraja parcomaculata*: Bigelow & Schroeder, 1948a: 550 (KZN, South Africa); Bigelow & Schroeder, 1953: 315 (KZN, South Africa); Bigelow & Schroeder, 1962: 199 (KZN, South Africa); Wallace, 1967a: 11, fig. 6 (rare off Durban); Hulley, 1970: 157, fig. 4, pl. 1a (in part, holotype lost, off Durban); Hulley, 1972a: 86, figs. 58–59 (in part); Hulley, 1986: 117, fig. 25.3 (in part); Compagno *et al*., 1989: 84, pl. (in part); Ebert, 2014: 57, fig. 78; Ebert & van Hees, 2015: 147; Last *et al*., 2016f: 29; Weigmann *et al*., 2016a: 480, fig. 21.6. *Cruriraja triangularis*: Smith, 1964: 290, pl. 28 (original description, = *C. parcomaculata* von Bonde & Swart, 1923); Hulley, 1986: 117, fig. 25.3; Compagno *et al*., 1989: 84, pl.; Compagno, 1999: 117; Ebert & Compagno, 2007: 122; Aschliman *et al*., 2010: 369 (synonym of *C. parcomaculata*). *Cruriraja parcomaculata* (von Bonde & Swart, 1923) = *Cruriraja* '*triangularis*' (Smith, 1964): Compagno & Ebert, 2007: 143, fig. 8c; Ebert *et al*., 2008: 86; Weigmann, 2016: 963.

South Africa voucher material: BMNH 1935.7.14.1 (1) (several syntypes *C. parcomaculata*). SAIAB [former RUSI] 50 (Paratype of *C. triangularis*), SAIAB 10092, SAIAB 10094, SAIAB 10095, SAIAB 10096, SAIAB 10097, SAIAB 188326, SAIAB 188974, SAIAB 189239.

South African distribution: Occurs from Durban north to the KZN border with Mozambique.

Remarks: A very small skate with a limited range from about Durban to southern Mozambique. It has a complicated taxonomic history due to it being described as *C. triangularis* (Smith, 1964) and most subsequent authors referring to the Eastern and Western Cape form as *C. parcomaculata*. The issue was resolved by Aschliman *et al*. (2010) who concluded that *C. triangularis* is a junior synonym of *C. parcomaculata*.

Conservation status: LC (2019).

Order Myliobatiformes

Family Plesiobatidae Nishida, 1990

Deep-sea Stingrays

Genus *Plesiobatis* Nishida, 1990

Deep-sea Stingrays

Plesiobatis Nishida, 1990: 98. Type by original designation (also monotypic).

***Plesiobatis daviesi* (Wallace, 1967c)**

Deep-sea Stingray

Urotrygon daviesi Wallace, 1967c: 8, figs 3–4. Holotype: SAIAB 7861 [ex. ORI B865], Mozambique Channel, off Limpopo River estuary, Mozambique, 25°25'S, 33°35'E.

Local synonymy: *Urotrygon daviesi*: Wallace, 1967c: 8, figs 3–4; Compagno *et al*., 1989: 100, pl. *Plesiobatis daviesi*: Compagno, 1999: 117; Ebert *et al*., 2002: 356; Ebert, 2014: 83, fig. 132; Ebert & van Hees, 2015: 147; Séret & Last, 2016: 675, fig. 28.1; Weigmann, 2016: 989.

South Africa voucher material: Ebert *et al*. (2002) reported on two specimens caught off northern KZN, but both were discarded. We are unaware of any South African specimens in museum collections.

South African distribution: Northern KZN.

Remarks: This species was long thought to be rare and known only from the type series off the Limpopo River estuary, but it has since been found to be quite common at depth throughout the Indo-West Pacific region from northern KZN, South Africa to Japan and northern Australia.

Conservation status: LC (2015).

Family Hexatrygonidae Heemstra & Smith, 1980

Sixgill Stingray

Genus *Hexatrygon* Heemstra & Smith, 1980

Sixgill Stingray

Hexatrygon Heemstra & Smith, 1980: 1. Type by original designation (also monotypic).

***Hexatrygon bickelli* Heemstra & Smith, 1980**

Sixgill Stingray

Hexatrygon bickelli Heemstra & Smith, 1980: 6, figs 1–13, 15. Holotype: SAIAB [formerly RUSI] 997, washed up on beach at Port Elizabeth, South Africa, ca. 33°59.5'S, 25°40.7'E.

Local synonymy: *Hexatrygon bickelli*: Heemstra & Smith, 1980: 6, figs 1–13, 15; Smith & Heemstra, 1986b: 142, fig. 31.1; Compagno *et al*., 1989: 100, pl.; Compagno, 1999: 117; Ebert, 2014: 88, fig. 136; Ebert, 2015: 191, fig. 216; Ebert & van Hees, 2015: 147; Séret & de Carvalho, 2016: 510, fig. 23.1; Weigmann, 2016: 989.

South Africa voucher material: SAIAB 997, SAIAB 27054.

South African distribution: Port Elizabeth (EC) and possibly the west coast (WC).

Remarks: The type specimen for this remarkable species was a female that washed up on Summerstrand Beach, Port Elizabeth (EC). The pregnant female gave birth to three near-term embryos that were also retained as part of the type series.

Conservation status: LC (2015).

Family Dasyatidae Jordan & Gilbert, 1879

Stingrays

Remarks: Authorship for the family Dasyatidae is often attributed to Jordan (1888), but van der Lann *et al*. (2014) noted that authorship should be corrected to Jordan & Gilbert (1879). In the original description, Jordan & Gilbert (1879: 386), the family name was spelled Dasybatidae, but later corrected by Jordan (1888: 22) to Dasyatidae (van der Lann *et al*., 2014; Last *et al*., 2016h).

Genus *Bathytoshia* Whitley, 1933

Giant Stingrays

Bathytoshia Whitley, 1933: 61. Type species: *Dasyatis thetidis* Ogilby *in* Waite, 1899, type by original designation, also monotypic.

***Bathytoshia brevicaudata* (Hutton, 1875)**

Shorttail Stingray

Trygon brevicaudata Hutton, 1875: 317. Holotype (unique): OM A.75.02 (stuffed). Type locality: Dunedin Harbor, New Zealand.

Local synonymy: *Trygon schreineri*: Gilchrist, 1913: 33, fig. (original description, holotype SAM 16053, caught off rocks at St James in False Bay, South Africa). *Dasybatis schreineri*: von Bonde & Swart, 1923: 16; Barnard, 1925: 76; Smith, 1949a: 70; Barnard, 1959: 27. *Dasyatis brevicaudatus*: Smith, 1949a: 70, fig. 81; Smith, 1961a: 70, fig. 81; Smith, 1965: 70, fig. 81; Wallace, 1967c: 37, figs. 18–19; Compagno & Heemstra, 1984: 3; Compagno, 1999: 117; NPOA, 2013: 60. *Dasyatis brevicaudata*: Compagno, 1986: 136, fig. 30.1; Compagno *et al*., 1989: 102, pl; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 147; Weigmann, 2016: 964. *Bathytoshia brevicaudata*: Last *et al*., 2016h: 354; Last *et al*., 2016i: 530, fig. 25.1.

South Africa voucher material: Holotype: SAM 16053. Non-types: SAIAB 7866 [ex ORI B805], SAIAB 26469, SAIAB 26470, SAIAB 27444.

South African distribution: Saldanha Bay, west coast (WC) to Kosi Bay, northern KZN.

Remarks: The first record of this species from South African waters was caught by an angler and described by Gilchrist (1913) as a new species (*Trygon schreineri*). However, Wallace (1967c) examined additional specimens from South Africa and compared them with New Zealand specimens and concluded that they were the same species and that *Trygon schreineri* (= *D. brevicaudata*) should be relegated to junior synonym status.

Conservation status: LC (2016).

***Bathytoshia lata* (Garman, 1880)**

Brown Stingray

Trygon lata Garman, 1880: 170. Holotype (unique): MCZ 129-S. Type locality: Hawaiian Islands.

Local synonymy: *Dasyabatis agulhensis*: Barnard, 1925: 78 (original description, holotype apparently lost, caught on the Agulhas Bank, South Africa); Fowler, 1941: 418; Smith, 1949a: 70. *Dasyatis lubricus*: Smith, 1957e: 429, pl. 15 (original description, Algoa Bay, holotype SAIAB [former RUSI] 431); Smith, 1961a: 565, fig. 79a, pl. 108. *Dasyatis thetidis*: Wallace, 1967c: 40, fig. 20; Compagno & Heemstra, 1984: 3; Compagno, 1986: 137, fig. 30.4; Compagno *et al*., 1989: 102, pl.; Compagno, 1999: 117; Ebert & van Hees, 2015: 147; Weigmann, 2016: 969. *Bathytoshia lata*: Last *et al*. 2016h: 354; Last *et al*. 2016i: 532, fig. 25.3.

South Africa voucher material: SAIAB 431 (Holotype of *D. lubricus*). SAIAB 7868 [former ORI B842], SAIAB 7878 [former ORI B806], SAIAB 7890 [former ORI B843], SAIAB 26642, SAIAB 26969, SAIAB 27443, SAIAB 27575, SAIAB 40960, SAIAB 79496.

South African distribution: Cape Agulhas (WC) to Kosi Bay (KZN).

Remarks: Barnard (1925) first reported this species in South African waters by describing *Dasyatis agulhensis* as a new species. Smith (1957e) also described it as a new species, *D. lubricus*, from off Algoa Bay, but both these species were synonymized by Wallace (1967c) as *D. thetidis*, which was long considered valid until Last *et al*. (2016h) revised the family and concluded that it is *Bathytoshia lata*, a wide-ranging species of large stingray found in the Indo-Pacific and Eastern Atlantic, including the Mediterranean Sea.

Conservation status: NE.

Genus *Dasyatis* Rafinesque, 1810a

Fintail Stingrays

Dasyatis Rafinesque, 1810a: 16. Type species: *Dasyatis ujo* Rafinesque, 1810a, by monotypy, a junior synonym of *D. pastinaca* (Linneaus, 1758).

***Dasyatis chrysonota* (Smith, 1828)**

Blue Stingray

Trygon chrysonota Smith [A.], 1828: 2. Neotype: SAM 31697 (designated by Cowley & Compagno, 1993: 145). Type locality: Off Gamtoos River, Eastern Cape, South Africa, Western Indian Ocean.

Local synonymy: *Trygon chrysonota*: Smith [A.], 1828: 2. *Trygon pastinaca*: Bleeker, 1860b: 58; Günther, 1870: 478; Gilchrist, 1902: 168; Norman, 1922: 320. *Dasyatis pastinaca*: Thompson, 1914: 162. *Dasybatus pastinaca*: von Bonde & Swart, 1923: 16; Barnard, 1925: 77, fig. 8, pl. 4; von Bonde, 1932: 32; Barnard, 1959: 27, fig.

3, pl. 4. *Dasyatis pastinacus*: Fowler, 1941: 420; Smith, 1949a: 70, pl. 4; Smith, 1961a: 70, pl. 4; Smith, 1965: 70, pl. 4; Wallace, 1967c: 34, figs. 16–17; Compagno & Heemstra, 1984: 4; Compagno, 1986: 137, fig. 30.3, pl. 6. *Dasyatis marmorata*: Compagno *et al*., 1989: 102, pl. *Dasyatis chrysonota*: Cowley & Compagno, 1993: 145, fig. 1 (Neotype); Compagno, 1999: 117; Heemstra & Heemstra, 2004: 82; Mann, 2013: 53; NPOA, 2013: 60; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 355; Last *et al*., 2016i: 537, fig. 25.8; Weigmann, 2016: 965.

South Africa voucher material: SAIAB 7192, SAIAB 7845, SAIAB 7865, SAIAB 8272, SAIAB 12110, SAIAB 12830, SAIAB 12845, SAIAB 19860, SAIAB 19900, SAIAB 31825, SAIAB 31826, SAIAB 41546, SAIAB 44321, SAIAB 44348, SAIAB 44349, SAIAB 54206, SAIAB 67752.

South African distribution: Along the entire coast from the Orange River (NC) to the northern KZN border with Mozambique.

Remarks: The taxonomic status of this species was usually referred to as *D. pastinaca* until the issue was examined by Cowley & Compagno (1993) who found that Andrew Smith (1828) had described it in the same article he also described the Whale Shark (*Rhincodon typus*). Cowley & Compagno (1993) provide a detailed discussion of the taxonomic history of this species.

Conservation status: NT (2020).

Genus *Himantura* Müller & Henle, 1837

Whiprays

Himantura Müller & Henle, 1837b: 400. Type species: *Raja sephen uarnak* Forsskål, 1775, by subsequent designation.

***Himantura leoparda* Manjaji-Matsumoto & Last, 2008**

Leopard Whipray

Himantura leoparda Manjaji-Matsumoto & Last, 2008: 294, figs. 1–4. Holotype: CSIRO H 2903-01. Type locality: Northwest of Weipa, Gulf of Carpentaria, Queensland, Australia, 12°08'S, 139°58'E,

Local synonymy: *Trygon uarnak*: Bleeker, 1860b: 58 (in part); Gilchrist, 1902: 169 (in part). *Dasybatus uarnak*: Regan, 1908a: 242 (in part); von Bonde & Swart, 1923: 16 (in part); Barnard, 1925: 76: Barnard, 1959: 27. *Dasyatis uarnak* (*non* Gmelin, 1789): Thompson, 1914: 163 (in part); Gilchrist & Thompson, 1916: 287 (in part); Fowler, 1934b: 409 (in part); Fowler, 1935: 364 (in part); Fowler, 1941: 405 (in part); Smith, 1949a: 70, pl. 4 (in part); Smith, 1961a: 70, pl. 4 (in part); Smith, 1965: 70, pl. 4 (in part); Wallace, 1967c: 44, fig. 22 (figure is *H. leoparda*). *Himantura uarnak* (*non* Gmelin, 1789): Compagno, 1986: 139, fig. 30.10 (in part); Compagno *et al*., 1989: 108, pl. (in part); Compagno, 1999: 117 (in part); da Silva *et al*., 2015: 246 (in part). *Himantura leoparda*: Manjaji-Matsumoto & Last, 2008: 294, figs. 1–4; da Silva *et al*., 2015: 246 (in part); Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 361; Last *et al*., 2016i: 562, fig. 25.33; Weigmann, 2016: 972.

South Africa voucher material: SAIAB 11155 [ex ORI 581], SAIAB 11156 [ex ORI B582], SAIAB 16426, SAIAB 80368, SAIAB 201755.

South African distribution: East London (EC) to the KZN border with Mozambique.

Remarks: Most publications and records of a large, reticulated patterned stingray species from KZN previously referred to *Himatura uarnak* are now known to be the relatively recently described *H. leoparda*, which is the most common large *Himantura* species in KZN. Its close relative *H. uarnak* does occur on occasion, but is far less common. South African specimens in museum collections should be re-examined to verify their identification. For expediency a list of specimens accessioned as both *H. leoparda* and *H. uarnak* are listed here.

Conservation status: VU (2016).

***Himantura uarnak* (Gmelin, 1789)**

Reticulate Stingray

Raja uarnak Gmelin, 1789: 1509. Types: No known types. Type locality: Red Sea [no locality stated].

Local synonymy: *Trygon uarnak*: Bleeker, 1860b: 58 (in part); Gilchrist, 1902: 169 (in part). *Dasybatus uarnak*: Regan, 1908a: 242 (in part); von Bonde & Swart, 1923: 16 (in part); Barnard, 1925: 76: Barnard, 1959: 27. *Dasyatis uarnak* (*non* Gmelin, 1789): Thompson, 1914: 163 (in part); Gilchrist & Thompson, 1916: 287 (in part); Fowler, 1934b: 409 (in part); Fowler, 1935: 364 (in part); Fowler, 1941: 405 (in part); Smith, 1949a:

70, pl. 4 (in part); Smith, 1961a: 70, pl. 4 (in part); Smith, 1965: 70, pl. 4 (in part); Wallace, 1967c: 44, fig. 22 (figure is *H. leoparda*). *Himantura uarnak* (*non* Gmelin, 1789): Compagno & Heemstra, 1984: 3 (in part); Compagno, 1986: 139, fig. 30.10 (in part); Compagno *et al*., 1989: 108, pl. (in part); Compagno, 1999: 117 (in part); Heemstra & Heemstra, 2004: 83. *Himantura uarnak*: Manjaji-Matsumoto & Last, 2008: 293; Mann, 2013: 59; NPOA, 2013: 61; da Silva *et al*., 2015: 246 (in part); Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 361; Last *et al*., 2016i: 563, fig. 25.34; Weigmann, 2016: 974.

South Africa voucher material: SAIAB 11155 [ex ORI 581], SAIAB 11156 [ex ORI B582], SAIAB 16426, SAIAB 80368, SAIAB 201755.

South African distribution: East London (EP) to the KZN border with Mozambique.

Remarks: The recently described *Himanturua tutul* is a junior synonym of *H. uarnak*. See remarks under *H. leoparda*.

Conservation status: VU (2016).

***Maculabatis* Last, Naylor, & Manjaji-Matsumoto, 2016h**

Band-tailed Stingrays

Maculabatis Last, Naylor, & Manjaji-Matsumoto, 2016h: 361. Type species: *Trygon gerrardi* Gray, 1851, type by monotypy.

***Maculabatis* cf. *ambigua* Last, Bogorodsky, & Alpermann, 2016j**

Sharpnose Stingray

Maculabatis ambigua Last, Bogorodsky, & Alpermann, 2016j: 67, figs. 1–6. Holotype: SMF 35803. Type locality: Red Sea off Jizan, Saudi Arabia, 16°51'N, 42°25'E.

Local synonymy: *Himantura gerrardi*: Compagno, 1986: 139, fig. 30.9; Compagno *et al*., 1989: 106, pl.; Compagno, 1999: 117; Ebert & van Hees, 2015: 147.

South Africa voucher material: None.

South African distribution: New record, East London (EC) to northern KZN.

Remarks: This species was previously referred to as *Himantura gerrardi*, but it should be assigned to the genus *Maculabatis*. It is similar to *M. ambigua*, a species known presently from the Red Sea to Zanzibar, Tanzania, but may be distinct. It is currently under investigation. The common name is Baraka's Stingray, but in South Africa it is known as the Sharpnose Stingray.

Conservation status: NE (2019).

***Megatrygon* Last, Naylor, & Manjaji-Matsumoto, 2016h**

Smalleye Stingrays

Megatrygon Last, Naylor, & Manjaji-Matsumoto, 2016h: 356. Type species: *Trygon microps* Annandale, 1908, type by monotypy.

***Megatrygon microps* Annandale, 1908**

Smalleye Stingray

Trygon microps Annandale, 1908: 393, pl. 27. Holotype: ZSI F2410/1. Type locality: Bay of Bengal, off Chittagong coast.

Local synonymy: None.

South Africa voucher material: None, record based on photographs.

South African distribution: New record, based on a single specimen that was caught by an angler, Craig Bashford, on 12 March 2019 and measured 151 cm disc width off North Pier, Durban Harbor (KZN).

Remarks: A new record for South Africa, this species may be more common particularly in northern KZN, but due to its large size records of its occurrence may be under reported.

Conservation status: DD (2016).

Genus *Neotrygon* Castelnau, 1873

Maskrays

Neotrygon Castelnau, 1873: 122. Type species: *Raja trigonoides* Castelnau, 1873, type by monotypy.

***Neotrygon caeruleopunctata* Last, White, & Séret, 2016k**

Bluespotted Maskray

Neotrygon caeruleopunctata Last, White, & Séret, 2016k: 546, figs. 5c, 6c, 7c, 10. Holotype: MZB unreg. (ex CSIRO H 7852-03). Type locality: Kedonganan fish market, Bali, Indonesia, 08°45'S, 115°10'E.

Local synonymy: *Dasyatis kuhlii*: Compagno & Heemstra, 1984: 1, fig. 9; Compagno, 1986: 137, fig. 30.2, pl. 6; Compagno *et al*., 1989: 104, pl.; Compagno, 1999: 117. *Neotrygon kuhlii*: NPOA, 2013: 60; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 147; Weigmann, 2016: 975. *Neotrygon caeruleopunctata*: Last *et al*., 2016h: 358; Last *et al*., 2016i: 586, fig. 25.57; Last *et al*., 2016k: 546, figs. 5c, 6c, 7c, 10.

South Africa voucher material: SAIAB [former RUSI] 14851, SAIAB [former RUSI] 17993, SAIAB [former RUSI] 18548.

South African distribution: Durban to northern KZN.

Remarks: First reported from South African waters by Compagno & Heemstra (1984) from off Durban (as *Dasyatis kuhlii*). There has been considerable resolution of the "bluespotted maskray" species-complex of the Indo-West Pacific recently, but additional species are likely to be described in the future.

Conservation status: NE.

Genus *Pastinachus* Rüppell, 1829

Cowtail Rays

Pastinachus Rüppell, 1829: 51. Type species: *Raja sephen* Forsskål 1775, by subsequent designation (Garman 1913: 375).

***Pastinachus ater* (Macleay, 1883)**

Broad Cowtail Ray

Taeniura atra Macleay, 1883a: 598. Holotype: AMS I.9762. Type locality: Port Moresby district, Papua New Guinea.

Local synonymy: *Dasyatis sephen*: Smith, 1957e: 431, pl. 16b; Smith, 1961a: 565, fig. 79c, pl. 108; Smith, 1965: 565, fig. 79c, pl. 108; Wallace, 1967c: 42, fig. 21. *Hypolophus sephen*: Compagno & Heemstra, 1984: 3; Compagno, 1986: 140, fig. 30.12; Compagno *et al*., 1989: 104, pl. *Pastinachus sephen*: Compagno, 1999: 117; Ebert & van Hees, 2015: 147. *Pastinachus ater*: Last *et al*., 2016h: 364; Last *et al*., 2016i: 594, fig. 25.65. *Pastinachus atrus*: Weigmann, 2016: 976.

South Africa voucher material: None examined.

South African distribution: Northern KZN.

Remarks: Smith (1957) first reported this stingray, as *Dasyatis sephen*, from northern KZN. It appears to be rare in South African waters, which is considered to be the edge of its range.

Conservation status: NE.

Genus *Pateobatis* Last, Naylor, & Manjaji-Matsumoto, 2016h

Whiprays

Pateobatis Last, Naylor, & Manjaji-Matsumoto, 2016h: 362. Type species: *Trygon uarnacoides* Bleeker, 1852, by original designation.

***Pateobatis fai* (Jordan & Seale, 1906)**

Pink Whipray

Himantura fai Jordan & Seale, 1906: 184, fig. 2. Holotype: USNM 51712. Type locality: Apia, Upolu Island, Samoa.

Local synonymy: *Dasyatis purpureus* [*non* Smith, A., 1841]: Wallace, 1967c: 50, fig. 24. *Himantura* sp.: Compagno & Heemstra, 1984: 4; Compagno, 1986: 140, fig. 30.11; Compagno *et al*., 1989: 106, pl. *Himantura* sp. near *fai*: Compagno, 1999: 117. *Himantura fai*: Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 356; Last *et al*., 2016i: 600, fig. 25.71; Weigmann, 2016: 970.

South Africa voucher material: SAIAB 7879 [former ORI B906], SAIAB 7887 [former ORI B649] (specimens accessioned as *Pteroplatytrygon violacea*).

South African distribution: Durban to northern KZN.

Remarks: A poorly known species in South African waters. It is very closely related to *P. jenkinsii*.
Conservation status: VU (2016).

***Pateobatis jenkinsii* (Annandale, 1909)**
Jenkins Whipray
Trygon jenkinsii Annandale, 1909: 28, figs 4, 4a. Holotype: ZSI F2473/1 (dried skin and jaws). Type locality: off Ganjam Coast, India.
Local synonymy: *Dasyatis jenkinsii*: Wallace, 1967c: 47, fig. 23. *Himantura draco*: Compano & Heemstra, 1984: 6, figs. 1–8 (original description, vicinity of Durban, KZN, South Africa, holotype SAIAB [former RUSI] 996; Compagno, 1986: 138, fig. 30.8; Compagno *et al*., 1989: 106, pl.; Heemstra & Heemstra, 2004: 83. *Himantura jenkinsii*: Compagno, 1999: 117; Heemstra & Heemstra, 2004: 83; Ebert & van Hees, 2015: 147; Weigmann, 2016: 965. *Pateobatis jenkinsii*: Last *et al*., 2016h: 355; Last *et al*., 2016i: 537, fig. 25.8.
South Africa voucher material: SAIAB 996 (Holotype of *H. draco*).
South African distribution: Durban to northern KZN.
Remarks: The presence of *P. jenkinsii* and other stingray species should be carefully examined to clarify the species composition occurring in South African waters.
Conservation status: VU (2020).

Genus *Pteroplatytrygon* Fowler, 1910
Pelagic Stingray
Pteroplatytrygon Fowler, 1910: 474. *Trygon violacea* Bonaparte 1832, by original designation (also monotypic).

***Pteroplatytrygon violacea* (Bonaparte, 1832)**
Pelagic Stingray
Trygon violacea Bonaparte, 1832: fasc. 1, punt. 6, Pl. 155. Syntypes: ANSP 385, ANSP 386, ?NMW 91239 (dry). Type locality: Italy, western Mediterranean Sea.
Local synonymy: *Trygon purpurea*: Smith [A.] *in* Müller & Henle, 1841: 160, pl. 52 (type locality South Africa, no known types; based on drawing by A. Smith [BMNH]); Bleeker, 1860: 58; Gilchrist, 1902: 169. *Dasybatis purpurea*: Thompson, 1914: 163; von Bonde & Swart, 1923: 16; Barnard, 1925: 79; Barnard, 1959: 27. *Dasyatis purpurea*: Barnard, 1934: 229. *Dasyatis purpureus*: Smith, 1949a: 71; Smith, 1961a: 71; Smith, 1965: 71. *Dasyatis violacea*: Compagno & Heemstra, 1984: 5; Compagno, 1986: 137, fig. 30.5. *Pteroplatytrygon violacea*: Compagno *et al*., 1989: 104, pl.; NPOA, 2013: 61; Ebert & Dando, 2014: 95, fig.; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 356; Last *et al*., 2016i: 604, fig. 25.75; Weigmann, 2016: 976.
South Africa voucher material: SAIAB 25936.
South African distribution: False Bay (WC) to Algoa Bay (EC), but likely wider ranging along the coast.
Remarks: The species has a complicated taxonomic history in South Africa having been confused with *Pateobatis fai* in KZN. Smith [A.] (*in* Müller & Henle, 1841) described *Trygon purpurea* (= *P. violacea*) citing South Africa as the type locality, but the species apparently was not seen again until a specimen was caught off Kalk Bay in False Bay in 1933 (Barnard, 1934). Although Wallace (1967c) referred to *Dasyatis purpureus*, his description and figure 24 are clearly that of *P. fai* or a similar looking species, but not *P. violacea*. The species was once thought to be quite rare in South Africa, with only a few specimens known (Compagno *et al*., 1989). However, it appears to be somewhat commonly caught in the chokka (= squid) fishery, but is usually not reported as bycatch.
Conservation status: LC (2019).

Genus *Taeniura* Müller & Henle, 1837a
Fantail Rays
Taeniura Müller & Henle, 1837a: 117. Type species: *Trygon ornatus* Gray, 1830, by monotypy, synonym of *T. lymma*.

***Taeniura lymma* (Forsskål, 1775)**

Blue-spotted Fantail Ray

Raja lymma Forsskål, 1775: 17. No types known. Type locality: Al-Luhayya, Yemen, Red Sea.

Local synonymy: *Taeniura lymma*: Wallace, 1967c: 31, fig. 15; Compagno & Heemstra, 1984: 3; Compagno, 1986: 141, fig. 30.13; Compagno *et al*., 1989: 108, pl.; Compagno, 1999: 117; Heemstra & Heemstra, 2004: 84; NPOA, 2013: 62; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 359; Last *et al*., 2016i: 606, fig. 25.77; Weigmann, 2016: 977.

South Africa voucher material: SAIAB 12838, SAIAB 48835.

South African distribution: Northern KZN.

Remarks: Common in northern KZN and northwards throughout the tropical Indo-West Pacific, but rare in southern KZN.

Conservation status: NT (2009).

Genus *Taeniurops* Garman, 1913

Round Fantail Rays

Taeniurops Garman, 1913: 399. Type species: *Taeniura meyeni* Müller & Henle, 1841, by subsequent designation.

***Taeniurops meyeni* (Müller & Henle, 1841)**

Blotched Fantail Ray

Taeniura meyeni Müller & Henle, 1841: 172, pl. 55. Syntypes: MNHN 0000-2428, ZMB 4660. Type locality: Mauritius, Mascarenes.

Local synonymy: *Taeniura melanospilus*: Smith, 1952g: 15, fig.; Smith, 1952d: 1020, pl. 38; Smith, 1955: 5; Smith, 1961a: 513, fig. 78a: Smith, 1965: 513, fig. 78a: Wallace, 1967c: 28, figs. 13–14; Compagno & Heemstra, 1984: 3; Compagno, 1986: 141, fig. 30.14; Compagno *et al*., 1989: 108, pl. *Taeniurops meyeni*: Compagno, 1999: 117; Heemstra & Heemstra, 2004: 84; Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 357; Last *et al*., 2016i: 608, fig. 25.79; Weigmann, 2016: 977.

South Africa voucher material: SAIAB 7849, SAIAB 7886 [ex ORI B614], SAIAB 55036.

South African distribution: Along the KZN coast to the Mozambique border.

Remarks: A common, but very little known species occasionally caught by shore anglers and by offshore trawlers off KZN.

Conservation status: VU (2015).

Genus *Urogymnus* Müller & Henle, 1837b

Porcupine Rays

Urogymnus Müller & Henle, 1837b: 434. Type species: *Raja asperrima* Bloch & Schneider, 1801, by being a replacement name.

***Urogymnus asperrimus* (Bloch & Schneider, 1801)**

Porcupine Ray

Raja asperrima Bloch & Schneider, 1801: 367. Holotype: ZMB 7836 (dry skin, partial specimen). Type locality: Mumbai, India.

Local synonymy: *Urogymnus africanus*: Smith, 1952a: 225; Smith, 1961a: 512, fig. 82a: Smith, 1965: 512, fig. 82a. *Urogymnus asperrimus*: Compagno & Heemstra, 1984: 3; Compagno, 1986: 141, fig. 30.15; Compagno *et al*., 1989: 110, pl.; Compagno, 1999: 117; Ebert & van Hees, 2015: 147; Last *et al*., 2016h: 363; Last *et al*., 2016i: 614, fig. 25.85; Weigmann, 2016: 977.

South Africa voucher material: None known in South African museums.

South African distribution: Along the KZN coast to the Mozambique border.

Remarks: A very little known species in South Africa, it is wide-ranging throughout the tropical Indo-West Pacific. Generally rare, but can be locally common at certain locations (e.g. in parts of Australia).

Conservation status: VU (2016).

Family Gymnuridae Fowler, 1934a
Butterfly Rays

Genus *Gymnura* van Hasselt, 1823
Butterfly Rays
Gymnura van Hasselt, 1823: 316. Type species: *Raja micrura* Bloch & Schneider, 1801, by monotypy.

***Gymnura natalensis* (Gilchrist & Thompson, 1911)**
Diamond Ray or Backwater Butterfly Ray
Pteroplatea natalensis Gilchrist & Thompson, 1911: 56. Holotype (unique): SAM 10632. Type locality: Off Cape Natal, west by north for 6.5 miles, South Africa.
Local synonymy: *Pteroplatea natalensis*: Gilchrist & Thompson, 1911: 56; von Bonde & Swart, 1923: 17; Barnard, 1925: 81; Smith, 1934: 83. *Pteroplatea micrura*: Barnard, 1925: 80. *Gymnura tentaculata*: Fowler, 1941: 450 (in part). *Gymnura japonica*: Smith, 1949a: 71; Compagno, 1986: 138; Compagno, 1999: 117 (?). *Gymnura natalensis*: Smith, 1949a: 71, fig. 86; Smith, 1965: 71, fig. 86; Smith & Smith, 1966: 32, fig.; Wallace, 1967c: 26, fig. 12; Compagno, 1986: 138, fig. 30.7, pl. 5; Compagno *et al*., 1989: 110, pl.; Compagno, 1999: 117; Heemstra & Heemstra, 2004: 85; Mann, 2013: 55; NPOA, 2013: 62; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 147; Weigmann, 2016: 979; Yokota *et al.*, 2016: 518, fig. 24.7. *Gymnura micrura*: Barnard, 1959: 27, figs. 5, 5a, pl. 4.
South Africa voucher material: SAIAB 5023, SAIAB 7859 [former ORI B99], SAIAB 7863 [former ORI B651], SAIAB 13325, SAIAB 25299, SAIAB 26471, SAIAB 48832
South African distribution: Entire coast from the Orange River (NC) to the northern KZN border with Mozambique.
Remarks: Although *G. japonica* is sometimes listed as occurring in South Africa, *G. natalensis* is the only species occurring in the area. Yokota *et al.* (2016) suggested that *G. altavela* is very similar and the two species may be synonymous, but molecular data indicates that *G. natalensis* is a distinct species (Weigmann, 2016).
Conservation status: LC (2019).

Family Aetobatidae Agassiz, 1858
Pelagic Eagle Rays

Genus *Aetobatus* Blainville, 1816
Pelagic Eagle Rays
Aetobatus Blainville, 1816: 112. Type species: usually given as *Raja narinari* Euphrasen, 1790, by subsequent designation by Müller & Henle (1837 or 1838).

***Aetobatus ocellatus* (Kuhl, 1823)**
Whitespotted Eagle Ray
Myliobatus ocellatus Kuhl, *in* van Hasselt, 1823: 316. No original types designated. Neotype: MZB 18225. Type locality: Muara Angke fish landing site, Jakarta, Indonesia.
Local synonymy: *Aetobatis narinari*: Müller & Henle, 1841: 179; Gilchrist & Thompson, 1911: 56; Gilchrist & Thompson, 1916: 289; von Bonde & Swart, 1923: 17; Barnard, 1925: 83, fig. 1, pl. 5; Fowler, 1925b: 194; von Bonde, 1932: 32; Fowler, 1941: 471. *Stoasodon narinari*: Smith, 1949a: 68, fig. 74. *Aetobatus narinari*: Wallace, 1967c: 15, fig. 7; Compagno, 1986: 132, fig. 26.1; Compagno *et al*., 1989: 114, pl.; Compagno, 1999: 117; Heemstra & Heemstra, 2004: 87; NPOA, 2013: 59; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 148. *Aetobatus ocellatus*: White, 2014: 151. White & Last, 2016b: 731, fig. 31.5; Weigmann, 2016: 985.
South Africa voucher material: SAIAB 12843, SAIAB 48514.
South African distribution: Knysna (WC) to KZN border with Mozambique.
Remarks: *Aetobatus narinari* (Euphrasen, 1790) was shown to be a species-complex based on molecular work by Richards *et al.* (2009); although they did not have access to samples from South Africa, or indeed from the WIO. White *et al.* (2010) resurrected *A. ocellatus* as the valid name for the Indo-Pacific, with *A. narinari* being restricted to the Western and Eastern Atlantic, occurring from Angola northwards (White & Last, 2016).
Conservation status: VU (2016).

Family Myliobatidae Bonaparte, 1838
Eagle Rays

Genus *Aetomylaeus* Garman, 1908
Smoothtail Eagle Rays
Aetomylaeus Garman, 1908: 252. Type species: *Myliobatus maculatus* Gray, 1834, by original designation; misspelled *Aetomyleus* in Zoological Record of 1908.

***Aetomylaeus bovinus* (Saint-Hilaire, 1817)**
Duckbill Ray
Myliobatis bovina Saint-Hilaire, 1817: no page number, pl. 26 (fig. 1). No known types. Type locality: Off Alexandria, Egypt, eastern Mediterranean Sea.
Local synonymy: *Pteromylaeus bovinus*: Barnard, 1925: 83; Smith, 1949a: 69, fig. 77; Barnard, 1959: 28; Smith, 1965: 69, fig. 77; Wallace, 1967c: 20, figs. 9, 10; Compagno, 1986: 133, fig. 28.3; Compagno *et al*., 1989: 110, pl.; Heemstra & Heemstra, 2004: 87; Weigmann, 2016: 985. ?*Aetomylus huletti*: Smith, 1953: 513, fig. 77a (original description); Compagno, 1986: 133. *Pteromylaeus bovina*: Compagno, 1999: 117; NPOA, 2013: 59. *Aetomylaeus bovina*: da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 148. *Aetomylaeus bovinus*: White, 2014: 151, fig. 5; White & Last, 2016a: 709, fig. 30.2.
South Africa voucher material: SAIAB 7860 [ex ORI B907], SAIAB 7862 [ex ORI], SAIAB 7880 [ex ORI B60], SAIAB 10445, SAIAB 12841, SAIAB 12848, SAIAB 13299, SAIAB 27442, SAIAB 31824, SAIAB 44291, SAIAB 51206.
South African distribution: The Orange River (NC) to KZN border with Mozambique.
Remarks: White (2014) placed the genus *Pteromylaeus* Garman, 1913 into synonymy with *Aetomylaeus* Garman, 1908.
Conservation status: DD (2016).

***Aetomylaeus vespertilio* (Bleeker, 1852)**
Ornate Eagle Ray
Myliobatis vespertilio Bleeker, 1852: 85. Holotype: RMNH 7460, Jakarta, Java, Indonesia.
Local synonymy: ?*Aetomylus huletti*: Smith, 1953: 513, fig. 77a (original description).
South Africa voucher material: No known specimens in museum collections, but confirmation based on a photograph from Richards Bay (Rob Kyle, pers. comm., Oceanographic Research Institute). The holotype of *A. huletti* (? = *A. vespertilio*) was collected in Zululand (northern KZN), but the type specimen is lost.
South African distribution: New record, from Richards Bay and possibly northern KZN.
Remarks: Smith (1953) described *Aetomylus huletti* based on a specimen from northern KZN (Zululand). However, subsequent authors (Wallace, 1967c; Compagno, 1986) attributed it as a possible synonym of *Pteromylaeus* (now *Aetomylaeus*) *bovinus*. Ebert & van Hees (2015) listed it as possibly being *A. nichofii*, but that species does not occur in the region. The holotype of *A. huletti* is unfortunately lost precluding further examination of the specimen, but it is likely to be *A. vespertilio* rather than *A. nichofii*; a species known to occur in Mozambique (White & Last, 2016a). Recently, a specimen of *A. vespertilio* was caught, and released at Richards Bay confirming this species' presence for the first time in South African waters (R. Kyle, Oceanographic Research Institute, April 2018, photograph and pers. comm.).
Conservation status: EN (2016).

Genus *Myliobatis* Cuvier, 1816
Eagle Rays
Myliobatis Cuvier, 1816: 137. Type species: *Raja aquila* Linnaeus, 1758, by subsequent designation.

***Myliobatis aquila* (Linnaeus, 1758)**
Bull Ray
Raja aquila Linnaeus, 1758: 232. No known types. Type locality: Mediterranean Sea and Northeastern Atlantic [original: "in Mari Mediterraneo"]

Local synonymy: *Myliobatis aquila*: Bleeker, 1860b: 59; Duméril, 1865: 634; Gilchrist, 1902: 169; Thompson, 1914: 165; Gilchrist & Thompson, 1916: 280; von Bonde & Swart, 1923: 17; Barnard, 1925: 82, fig. 7, pl.4; von Bonde, 1934: 17; Smith, 1935: 169; Barnard, 1947: 28, fig. 6, pl. 4; Smith, 1949a: 69 (doubtful from southern Africa); Smith, 1965: 69 (doubtful from southern Africa); Wallace, 1967c: 17, fig. 8; Compagno, 1986: 133, fig. 28.2, pl. 5; Compagno *et al*., 1989: 112, pl.; Compagno *et al*., 1991: 108; Compagno, 1999: 117; Heemstra & Heemstra, 2004: 86; Mann, 2013: 132; NPOA, 2013: 59; da Silva *et al*., 2015: 247; Ebert & van Hees, 2015: 148; Weigmann, 2016: 986; White & Last, 2016a: 715, fig. 30.8. *Myliobatis cervus*: Smith, 1935: 169, fig. 1 (original description; syntypes missing); Smith, 1949a: 68, fig. 75, pl. 3; Smith, 1965: 68, fig. 75, pl. 3. *Holorhinus aquila*: Fowler, 1941: 459. *Holorhinus cervus*: Fowler, 1941: 460.

South Africa voucher material: SAIAB 2860, SAIAB 7844, SAIAB 10423, SAIAB 12111, SAIAB 12842, SAIAB 19823, SAIAB 19864, SAIAB 26451, SAIAB 26452, SAIAB 26453, SAIAB 26504, SAIAB 26505, SAIAB 26961, SAIAB 44344, SAIAB 44345, SAIAB 44346, SAIAB 44347, SAIAB 44350, SAIAB 44352, SAIAB 48515, SAIAB 50843, SAIAB 207767.

South African distribution: The Orange River (NC) to at least Durban, KZN.

Remarks: Smith (1935) described a new species *Myliobatis cervus* from two specimens (designated syntypes) caught off Knysna (WC). In subsequent publications, Smith (1949a, 1965) commented that he doubted the European *M. aquila* occurred in the region and used the presence of orbital horns to distinguish his new species (Smith, 1961a). However, Wallace (1967c) reviewed the issue and concluded that the taxonomic value of the horns was dubious and was a secondary sexual characteristic; a conclusion agreed with by contemporary researchers (Compagno, 1986; Compagno *et al*., 1989; White & Last, 2016). See "Local synonymy" above for full accounting.

Conservation status: DD (2009).

Family Rhinopteridae Jordan & Evermann, 1896

Cownose Rays

Genus *Rhinoptera* Cuvier, 1829

Cownose Rays

Rhinoptera Cuvier, 1829: 401. Type species: *Myliobatis marginata* Geoffroy St. Hilaire, 1817, by subsequent designation; type designated by Bonaparte, 1838: 6 (of separate), also by Hay, 1902: 321. Appeared first as *Rhenoptera* van Hasselt, 1823: 318 and *Rhinoptera* van Hasselt, 1824: 90, regarded as *nomina nuda*. Cuvier's "Les Rhinoptera Kuhl" evidently sufficient to Latinise; two included species.

***Rhinoptera jayakari* Boulenger, 1895**

Oman Cownose Ray

Rhinoptera jayakari Boulenger, 1895: 141. Holotype (unique): BMNH 1894.3.21.13 (skin). Type locality: Muscat, Oman, Gulf of Oman, Arabian Sea, northwestern Indian Ocean.

Local synonymy: *Rhinoptera javanica*: Smith, 1952d: 1020; Smith, 1961a: 504, fig. 77a; Wallace, 1967c: 23, fig. 11; Compagno, 1986: 133, fig. 28.4; Compagno *et al*., 1989: 114, pl.; Compagno, 1999: 118; Heemstra & Heemstra, 2004: 87; Ebert & van Hees, 2015: 148. *Rhinoptera jayakari*: Last *et al.*, 2016l: 736, fig. 32.4; Weigmann, 2016: 988.

South Africa voucher material: SAIAB 7855 [ex ORI], SAIAB 7857 [ex ORI B646], SAIAB 7858 [ex ORI B347] (All SAIAB specimens accessioned as *Rhinoptera javanica*).

South African distribution: Amanzimtoti (south of Durban) to KZN border with Mozambique.

Remarks: The only *Rhinoptera* species in South Africa, previous records referred to *R. javanica*, which does not occur off East or South Africa. *Rhinoptera jayakari* only marginally occurs in South African waters off KZN.

Conservation status: NE.

Family Mobulidae Gill, 1893
Devil Rays

Genus *Mobula* Rafinesque, 1810b
Devil Rays
Mobula Rafinesque, 1810b: 48, 61. Type species: *Mobula auriculata* Rafinesque, 1810b (= *Raia mobular* Bonnaterre, 1788); by monotypy (also by absolute tautonymy).
Remarks: The genus *Mobula* is poorly known in South African waters due to revisions to the genus and misidentification of individual species (Hosegood *et al*., 2020). A comprehensive review of those species occurring in South African waters and their distributional limits is wanting.

***Mobula alfredi* (Krefft, 1868)**
Reef Manta Ray
Deratoptera alfredi Krefft, 1868: 3–9, fig. Holotype: AMS I.1731 (stuffed). Type locality: Watson Bay, Sydney, New South Wales, Australia.
Local synonymy: *Manta alfredi*: Marshall *et al*., 2009: 13, figs. 9–14; Ebert & Dando, 2014: 97, fig.; Ebert & van Hees, 2015: 148; Weigmann, 2016: 981. *Mobula alfredi*: White & Last, 2016c: 742, fig. 33.1; Stevens *et al*., 2018: 70, figs.
South Africa voucher material: SAIAB 7885.
South African distribution: Durban (KZN) and north to the Mozambique border.
Remarks: Formerly in the genus *Manta*, White *et al*. (2018), using morphological and molecular data, concluded that there was no significant difference between the genera *Manta* and *Mobula*. Since *Mobula* is the older name and takes precendence, the two recognized species formerly in the genus *Manta* were reassigned to the genus *Mobula* (White *et al*., 2018). Marshall *et al.* (2009) resurrected *Mobula* (= *Manta*) *alfredi* as distinct from *Mobula birostris*. Prior to this species being resurrected, the name *M. birostris* was widely used throughout the WIO, with historical records likely including both species.
Conservation status: VU (2019).

***Mobula birostris* (Walbaum, 1792)**
Giant Manta Ray
Raja birostris Walbaum, 1792: 535. Types: No types known. Type locality: No locality stated in description.
Local synonymy: *Manta ehrenbergi*: Barnard, 1925: 87; Fowler, 1934b: 409, figs. 2–3; Barnard, 1959: 29, figs. 9–9a, pl. 4. *Manta birostris*: Smith, 1949a: 73, fig. 88; Wallace, 1967c: 13, fig. 6; Compagno, 1986: 134, fig. 29.1, pl. 5; Compagno *et al*., 1989: 116, pl.; Compagno, 1999: 118; Heemstra & Heemstra, 2004: 88; Marshall *et al*., 2009: 4, figs. 1–7; Ebert & Dando, 2014: 99, fig.; Ebert & van Hees, 2015: 148; Weigmann, 2016: 981. *Mobula birostris*: White & Last, 2016c: 743, fig. 33.2; Stevens *et al*., 2018: 74, figs.
South Africa voucher material: SAIAB 7885, SAIAB 48525, SAIAB 75575, SAIAB 75576, SAIAB 200672, SAIAB 200673, SAIAB 200674.
South African distribution: Table Bay (WC) to the KZN border with Mozambique.
Remarks: *Mobula birostris* appears to occur in the more temperate waters of the WC compared to *M. alfredi*, which appears to be more restricted to the warmer waters of the KZN coast.
Conservation status: EN (2020).

***Mobula eregoodoo* (Bleeker, 1859)**
Pygmy Devil Ray
Dicerobatis eregoodoo Cantor, 1849: 1420. No types. Type locality: Penang, Malaysia. Neotype: CAS 56095. Type locality: Gulf of Siam off Cambodia, about 1 mile east of Goh Choaw and 10–12 miles SSE of Koh Kong, 11°00'N–11°05'N, 103°03'30"E–103°05'E.
Local synonymy: *Mobula eregoodootenkee*: Compagno, 1999: 118; Ebert & Dando, 2014: 101, fig.; Ebert & van Hees, 2015: 148; Weigmann, 2016: 981; Stevens *et al*., 2018: 78, figs. *Mobula eregoodoo*: Notarbartolo di Sciara *et al*., 2020: 104, fig. 1.
South Africa voucher material: None.

South African distribution: Durban (KZN) to the Mozambique border.

Remarks: This species has a confused taxonomic and nomenclatural history. A neotype (CAS 56095) was designated for *Cephaloptera eregoodootenkee* Bleeker, 1859, by Notarbartolo-di-Sciara (1987) for Cuvier 1829, which was considered an unneeded subsequent new name for *Dicerobatis eregoodoo* Cantor 1849 by Notarbartolo di Sciara *et al*. (2020). White *et al.* (2018) concluded that it was a synonym of *M. kuhlii*, however Notarbartolo di Sciara *et al*. (2020) consider these to be separate species. These authors also clarified the name as *M. eregoodoo*.

Conservation status: EN (2020).

***Mobula kuhlii* (Müller & Henle, 1841)**

Shortfin Devil Ray

Cephaloptera kuhlii Valenciennes *in* Müller & Henle, 1841: 185, pl. 59 (left). Lectotype: MNHN 0000-1596. Type locality: India.

Local synonymy: *Mobula kuhlii*: Barnard, 1925: 86, fig. 2, pl. 5; Barnard, 1959: 28, fig. 8, pl. 4; Compagno *et al*., 1989: 116, pl.; Compagno, 1999: 118; Ebert & van Hees, 2015: 148; Weigmann, 2016: 982; White & Last, 2016c: 745, fig. 33.4; Stevens *et al*., 2018: 86, figs. *Mobula diabolus*: Smith, 1943: 75; Smith, 1949a: 72, fig. 87; Compagno, 1986: 135, fig. 29.2.

South Africa voucher material: SAIAB 4361, SAIAB 7883, SAIAB 7884, SAIAB 12821, SAIAB 13337, SAIAB 44353, SAIAB 75577, SAIAB 75578, SAIAB 75579, SAIAB 207689.

South African distribution: Port Alfred (EC) to northern KZN.

Remarks: The specific identification in Barnard (1925) was provisional based only on the color of a specimen cast and the fact that *M. kuhlii* had previously been recorded in Zanzibar. The proportions of the cephalic lobes in the drawing (Barnard, 1925: pl. 5) are suggestive of *M. kuhlii* (see Notarbartolo di Sciara *et al.*, 2020, fig. 3). See Remarks under *M. eregoodoo* for relationship with that species.

Conservation status: EN (2020).

***Mobula mobular* (Bonnaterre, 1788)**

Giant Devil Ray

Raia mobular Bonnaterre, 1788: 5. No types known. Type locality: Montredon, near Marseille, France, western Mediterranean Sea.

Local synonymy: *Mobula japanica*: Compagno, 1999: 118; Ebert & Dando, 2014: 103, fig.; Ebert & van Hees, 2015: 148; Weigmann, 2016: 982.

South Africa voucher material: SAIAB uncatalogued.

South African distribution: East of Port Alfred (EC) and the KZN coast.

Remarks: White *et al.* (2018) synonymized *Mobula mobular* (previously considered a Mediterranean Sea endemic) with *M. japonica* with precedence given to the name *M. mobular*. Records from off South Africa are not well documented.

Conservation status: EN (2020).

***Mobula tarapacana* (Philippi, 1892)**

Sicklefin Devilray

Cephaloptera tarapacana Philippi, 1892: 8, pl. 3(fig.2). Holoype (unique): lost. Type locality: 12 miles west of Iquique, Tarapacà Province, Chile, southeastern Pacific.

Local synonymy: *Mobula tarapacana*: Compagno *et al*., 1989: 118, pl.; Compagno, 1999: 118; Ebert & Dando, 2014: 105, fig.; Ebert & van Hees, 2015: 148; Weigmann, 2016: 982; White & Last, 2016c: 748, fig. 33.7; Stevens *et al*., 2018: 102, figs.

South Africa voucher material: None.

South African distribution: Jeffreys Bay (EC) to KZN border with Mozambique.

Remarks: The distribution of this species is patchy with only scattered records in the WIO, including South African waters.

Conservation status: EN (2019).

***Mobula thurstoni* (Lloyd, 1908)**
Bentfin Devil Ray
Dicerobatis thurstoni Lloyd, 1908: 179, fig. 3, pl. 4 (fig. 2). Syntypes: Madras Museum (whereabouts unknown). Type locality: India.
Local synonymy: *Mobula thurstoni*: Compagno *et al*., 1989: 118, pl.; Compagno, 1999: 118; Ebert & Dando, 2014: 107, fig.; Ebert & van Hees, 2015: 148; Weigmann, 2016: 982; White & Last, 2016c: 749, fig. 33.8; Stevens *et al*., 2018: 106, figs.
South Africa voucher material: None.
South African distribution: Algoa Bay (EC) to KZN border with Mozambique.
Remarks: Records on the occurrence of *Mobula* species in South African waters should be re-examined and reviewed to clarify the status of those occurring in these waters.
Conservation status: EN (2019).

Order Chimaeriformes

Family Callorhinchidae Garman, 1901
Elephantfishes

Genus *Callorhinchus* Lacèpede, 1798
Elephantfishes
Callorhinchus Lacèpede, 1798: 400. Type species: *Chimaera callorynchus* Linnaeus, 1758, type by monotypy.

***Callorhinchus capensis* Duméril, 1865**
St Joseph
Callorhynchus capensis Duméril, 1865: 695, fig. 5, pl. 13. Syntypes: MNHN A-7981 (1), 4294 (1), plus 1 probably lost. Type locality: Cape of Good Hope, South Africa.
Local synonymy: *Chimaera callorynchus*: Linnaeus, 1758: 236 (in part: "*Habitat in Mari Aethiopico*"). *Callorhynchus antarcticus*: Bleeker, 1860b: 57; Gilchrist, 1902: 162; Thompson, 1914: 167; Gilchrist & Thompson, 1916: 290; von Bonde, 1923: 5. *Callorhynchus capensis*: Garman, 1904: 271, figs. 5–6, pl. 6; Garman, 1911: 99; Barnard, 1925: 96, fig. 6, pl. 5; Fowler, 1941: 507; Barnard, 1947: 31, fig. 2, pl. 5; Smith, 1949a: 77, fig. 95; Smith, 1965: 77, fig. 95; Smith & Smith, 1966: 35, fig. *Callorhinchus capensis*: Compagno, 1986: 147, fig. 34.1; Compagno *et al*., 1989: 120, pl.; Compagno *et al*., 1991: 109; Freer & Griffiths, 1993: 63; Compagno, 1999: 120; Heemstra & Heemstra, 2004: 90; Didier *et al*., 2012: 100; Mann, 2013: 7; NPOA, 2013: 63; da Silva *et al*., 2015: 246; Ebert & van Hees, 2015: 148; Walovich *et al*., 2015: 163; Didier, 2016: 1445; Weigmann, 2016: 1000.
South Africa voucher material: SAIAB 3956, SAIAB 8263, SAIAB 9785, SAIAB 9786, SAIAB 11020, SAIAB 11078, SAIAB 11936, SAIAB 12919, SAIAB 12993, SAIAB 16195, SAIAB 16727, SAIAB 19819, SAIAB 19820, SAIAB 19824, SAIAB 21886, SAIAB 21887, SAIAB 25195, SAIAB 25196, SAIAB 25197, SAIAB 25198, SAIAB 25199, SAIAB 25200, SAIAB 25201, SAIAB 25202, SAIAB 25203, SAIAB 25204, SAIAB 25205, SAIAB 25206, SAIAB 25207, SAIAB 25208, SAIAB 25209, SAIAB 26309, SAIAB 34589, SAIAB 34590, SAIAB 34591, SAIAB 35300, SAIAB 35888, SAIAB 38256, SAIAB 38681, SAIAB 40959, SAIAB 43842, SAIAB 48665, SAIAB 200716.
South African distribution: The Orange River (NC) to Durban (KZN).
Remarks: A regional endemic to southern Africa, its range extends into southern Namibia. This is one of the most common inshore chondrichthyan species between the Orange River and Cape Agulhas (Compagno *et al*., 1991).
Conservation status: LC (2020).

Family Chimaeridae Rafinesque, 1815
Shortnose Ghostsharks

Genus *Chimaera* Linnaeus, 1758
Rabbitfishes
Chimaera Linnaeus, 1758: 236. Type species: *Chimaera monstrosa* Linnaeus, 1758, type by Linnaean tautonymy.

***Chimaera notafricana* Kemper, Ebert, Compagno, & Didier, 2010**
Cape Chimaera
Chimaera notafricana Kemper, Ebert, Compagno, & Didier, 2010: 56, fig. 1. Holotype: SAM 34517. Type locality: Cape Agulhas, South Africa, 34°49'09"S, 20°00'00"E.
Local synonymy: *Chimaera monstrosa*: Duméril, 1865: 688; Gilchrist, 1902: 162; Thompson, 1914: 166; Gilchrist, 1922b: 51, pl. 8; Barnard, 1925: 94; Fowler, 1936: 143; Fowler, 1941: 489; Barnard, 1947: 30, probably not pl. 5, fig. 3 = *C. monstrosa* from European seas; Smith, 1949a: 76; Smith, 1965: 76; Compagno, 1986: 144, not fig. 32.1, which is European *C. monstrosa*. *Chimaera vaillanti*: Dean, 1906: 7, *nomen nudnum*. *Chimaera* sp.: Compagno *et al*., 1989: 120, pl.; Compagno *et al*., 1991: 112; Compagno, 1999: 120. *Chimaera notafricana*: Kemper *et al*., 2010: 56, fig. 1; Didier *et al*., 2012: 100; Ebert, 2014: 94, fig. 147; Ebert, 2015: 196, fig. 222; Ebert & van Hees, 2015: 148; Walovich *et al*., 2015: 163; Weigmann, 2016: 1001.
South Africa voucher material: Holotype: SAM 34517. Paratypes (4): SAIAB 27132, SAIAB 27133, SAM 34428, SAM 34429. Non-types: SAIAB 27132, SAIAB 27133, SAIAB 27134, SAIAB 27135, SAIAB 34834, SAIAB 54450.
South African distribution: The Orange River (NC) to Algoa Bay (EC).
Remarks: A regional endemic occurring from about Lüderitz, Namibia to Algoa Bay (EC). It had previously been referred to as the European *C. monstrosa*, but it is quite distinct from that species.
Conservation status: LC (2020).

Genus *Hydrolagus* Gill, 1862
Ghostsharks
Hydrolagus Gill, 1862: 331. Type species: *Chimaera colliei* Lay & Bennett, 1839, by monotypy.

***Hydrolagus affinis* (de Brito Capello, 1868)**
Smalleyed Rabbitfish
Chimaera affinis de Brito Capello, 1868: 314, fig. 1, pl. 3. Holotype (unique): type lost in fire. Type location: Setubal, Portugal.
Local synonymy: *Hydrolagus* sp. (?): Smith, 1964: 145; Compagno, 1986: 145, fig. 32.3; Compagno *et al*., 1991: 113 (in part). *Hydrolagus* sp. nov.: Compagno, 1999: 120. *Hydrolagus trolli*: Ebert, 2014: 96, fig. 153. *Hydrolagus* cf. *trolli*: Ebert, 2015: 195, 197, fig. 224; Ebert & van Hees, 2015: 148; Walovich *et al*., 2015: 162; Walovich *et al*., 2017: 509; Weigmann, 2016: 1004. *Hydrolagus affinis*: Walovich, 2017: 54, fig. 12.
South Africa voucher material: SAM 33063 (2), SAM 33198, SAM 33205, SAM 33297 (3 specimens), SAM 34238, SAM 34435, SAM 34933, SAM 34934.
South African distribution: The Orange River (NC) to Algoa Bay off Port Elizabeth (EC). Compagno (1986) illustrates a specimen from off Durban (KZN) that may be this species.
Remarks: This large species had long been considered to be close to southwestern Pacific *Hydrolagus trolli*, but in a morphological and molecular study, Walovich (2017) found it to be identical to the north Atlantic *H. affinis*. This finding extends its known range to at least Algoa Bay (EC) in the WIO.
Conservation status: LC (2020).

***Hydrolagus africanus* (Gilchrist, 1922b)**
African Ghostshark
Chimaera africanus Gilchrist, 1922b: 51, pl. 8. Syntypes: several, all lost. Type locality: deepwater off KZN. Neotype: SAM 34420. Neotype designated by Walovich *et al*. 2015:158, fig. 1. Type locality: west coast of WC, Southeast Atlantic Ocean, 30°04'59.88"S, 14°54'6.12"E.

Local synonymy: *Chimaera africanus*: Gilchrist, 1922b: 51, pl. 8; Barnard, 1925: 95; Norman, 1935: 47; Fowler, 1941: 499; Smith, 1949a: 79, fig. 94; Bigelow & Schroeder, 1953: 543; Smith, 1961a: 76, fig, 94; Smith, 1965, 76, fig. 94. *Hydrolagus* sp.: Compagno *et al*., 1991: 113. *Hydrolagus africanus*: Smith, 1968: 3, pl. 1a; Compagno, 1986: 145, fig. 32.2; Compagno *et al*., 1989: 120, pl. (in part); Compagno, 1999: 120; Kemper *et al*., 2010: 55; Didier *et al*., 2012: 101; Ebert, 2014: 96, fig. 151; Ebert & van Hees, 2015: 148; Walovich *et al*., 2015: 158, fig. 1; Weigmann, 2016: 1002. *Hydrolagus* cf. *africanus*: Ebert, 2015: 198, fig. 225.

South Africa voucher material: Neotype: SAM 34420. Non-types: CAS 241488 (4 specimens), CAS 241490 (2 specimens), CAS 241491, CAS 241492 (2 specimens), CAS 241493, SAIAB 14040 (2 specimens), SAIAB 17324, SAIAB 17325, SAIAB 25211, SAIAB 25712, SAIAB 81688, SAIAB 186459, SAM 33058, SAM 33412, USNM 438927, USNM 438929, USNM 438930, USNM 438931, USNM 438932.

South African distribution: Entire coastline from the Orange River (NC) to KZN border with Mozambique.

Remarks: *Hydrolagus africanus* has long been misidentified with other regional *Hydrolagus* species including *H. affinis* in South African and Namibian waters and with *H. mirabilis* in Angolan waters. However, Walovich *et al*. (2015) reviewed the issue and designated a neotype clarifying the external morphology and providing a key to regional species.

Conservation status: LC (2020).

***Hydrolagus erithacus* Walovich, Ebert, & Kemper, 2017**

Robin's Ghostshark

Hydrolagus erithacus Walovich, Ebert, & Kemper, 2017: 511, figs. 1–2. Holotype: SAIAB 200578. Type locality: Discovery Seamount, Southeast Atlantic Ocean, 43°46'S, 01°21'E.

Local synonymy: *Hydrolagus* sp. nov.: Compagno, 1999: 120. *Hydrolagus erithacus*: Walovich *et al*., 2017: 511, figs. 1–2.

South Africa voucher material: Holotype: SAIAB 200578. Paratypes (8): SAIAB 200579, SAM 34432, SAM 34434, SAM 34723, SAM 34724, SAM 35442, SAM 35446, SAM 35447.

South African distribution: Known from the Southeast Atlantic and Southwest Indian oceans, including near Marion Island and Prince Edward Island within the South African exclusive economic zone.

Remarks: *Hydrolagus erithacus* is the largest known ghostshark to date, exceeding that of *H. trolli* in length. The species was thought to be similar to what is now known to be *H. affinis* in South African waters. Presently, it is known from several seamounts in the southeast Atlantic and southwest Indian oceans, but it may prove to be much wider ranging in the Southern Ocean.

Conservation status: DD (2020).

Family Rhinochimaeridae Garman, 1901

Longnose Chimaeras

Genus *Harriotta* Garman, 1901

Narrownose Chimaeras

Harriotta Goode & Bean, 1895: 471. Type species: *Harriotta raleighana* Goode & Bean, 1895, type by monotypy.

***Harriotta raleighana* Goode & Bean, 1895**

Narrownose Ghostshark

Harriotta raleighana Goode & Bean, 1895: 472, pl. 19. Lectotype: USNM 35520, established in caption to pl. 19, p. 3234 in Jordan & Evermann, 1900. Type locality: Northwestern Atlantic, Gulf Stream, 39°37'45"N, 71°18'45"W.

Local synonymy: *Harriotta raleighana*: Shcherbachev, 1978: 7; Compagno, 1986: 146, fig. 33.1; Compagno *et al*., 1989: 122, pl.; Compagno *et al*., 1990: 202, fig. 1; Compagno *et al*., 1991: 114; Compagno, 1999: 120; Didier *et al*., 2012: 100; NPOA, 2013: 62; Ebert, 2014: 100, figs. 160–161; da Silva *et al*., 2015: 247; Ebert, 2015: 200, fig. 230; Ebert & van Hees, 2015: 148; Walovich *et al*., 2015: 163; Weigmann, 2016: 1005.

South Africa voucher material: SAIAB and SAM several uncatalogued specimens.

South African distribution: The Orange River (NC) to Doring Bay (WC).

Remarks: A wide-ranging species, it is confirmed from the west coast of South Africa but likely has a much wider range.

Conservation status: LC (2016).

Genus *Rhinochimaera* Garman, 1901

Knifetooth Chimaeras

Rhinochimaera Garman, 1901: 75. Type species: *Harriotta pacifica* Mitsukuri, 1895, type by original designation (also monotypic).

Rhinochimaera africana Compagno, Stehmann, & Ebert, 1990

Paddlenose Chimaera

Rhinochimaera africana Compagno, Stehmann, & Ebert, 1990: 206, figs. 2–5. Holotype: SAIAB [formerly RUSI] 27744. Type locality: West of Doring Bay, Western Cape, South Africa, 31°59.8'S, 15°56.2'E.

Local synonymy: *Rhinochimaera atlantica*: Penrith, 1969: 66 (in part); Shcherbachev, 1978: 8 (in part, South Africa: off Atlantic side of Agulhas Bank (WC) and off Kosi Bay (KZN); Compagno, 1986: 146 (in part, KZN). *Rhinochimaera pacifica*: Shcherbachev *et al*., 1982: 28 (in part, records from Shcherbachev 1978 from Agulhas Bank and Kosi Bay). *Rhinochimaera* sp.: Compagno *et al*., 1989: 122, pl. *Rhinochimaera africana*: Compagno *et al*., 1990: 206, figs. 2–5; Compagno *et al*., 1991: 115; Compagno, 1999: 120; Didier *et al*., 2012: 100; Ebert, 2014: 104, fig. 167; Ebert, 2015: 204, fig. 234; Ebert & van Hees, 2015: 148; Weigmann, 2016: 1005.

South Africa voucher material: Holotype: SAIAB 27744. Paratypes, (4): SAM 23123, ZMMU P 14392, ZIL 48699, ISH 1/90 (ex ZMMU P 14393).

South African distribution: Scattered records off Doring Bay (WC) to Kosi Bay (KZN), but likely to occur off the entire South African coast.

Remarks: The species had been misidentified with *R. atlantica* until Compagno *et al*. (1990) recognized it as distinct. Records of *R. atlantica* from off Kosi Bay are actually *R. africana*.

Conservation status: DD (2016).

***Rhinochimaera atlantica* Holt & Byrne, 1909**

Atlantic Spearnose Ghostshark

Rhinochimaera atlantica Holt & Byrne, 1909: 279. Holotype (unique): BMNH 1910.9.17.4. Type locality: Irish Atlantic Slope off southwest Ireland, 50°32'–50°28'N, 11°34'–11°28'W.

Local synonymy: *Rhinochimaera atlantica*: Penrith, 1969: 66 (in part, including *R. africana*); Shcherbachev, 1978: 8 (in part); Compagno, 1986: 146, fig. 33.3; Compagno *et al*., 1989: 122, pl.; Compagno *et al*., 1990: 205, fig. 6; Compagno *et al*., 1991: 116; Compagno, 1999: 120; Didier *et al*., 2012: 100; Ebert, 2014: 104, fig. 168; Ebert, 2015: 204, fig. 235; Ebert & van Hees, 2015: 148; Weigmann, 2016: 1006. *Rhinochimaera pacifica*: Shcherbachev, 1978: 8 (in part).

South Africa voucher material: Numerous uncatalogued specimens at SAIAB and SAM.

South African distribution: The Orange River (NC) to Plettenberg Bay (WC); records from off northern KZN are *R. africana*.

Remarks: This species is relatively common off the west coast where it is usually caught in large aggregations of the same sex and size at over 700 m deep.

Conservation status: LC (2020).

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References

Agassiz, L. (1833–43) *Recherches sur les Poissons Fossiles. 5 Vols*. Petitpierre, Neuchâtel, Switzerland, xlix + 188 pp., xii + 310 + 336 pp., viii + 390 pp., xvi + 296 pp., xii + 122 + 160 pp.
https://doi.org/10.5962/bhl.title.4275

Agassiz, L. (1858) A new species of skate from the Sandwich Islands. *Proceedings of the Boston Society of Natural History*, 6 (1856–1859), 385.

Alava, M.N.R., Gaudiano, J.P.A., Utzurrum, J.T., Capuli, E.E., Aquino, M.T.R., Luchavez-Maypa, M.M.A. & Santos, M.D. (2014) *Pating Ka Ba? An Identification Guide to Sharks, Batoids, and Chimaeras of the Philippines.* Department of Agriculture Bureau of Fisheries and Aquatic Resources – National Fisheries Research and Development Institute, Quezon City and the Marine Wildlife Watch of the Philippines, Taguig City, 200 pp.

Ambily, M.N., Zacharia, P.U., Najmudeen, T.M., Ambily, L., Sunil, K.T.S., Radhakrishnan, M. & Kishor, T.G. (2018) First record of African Angel Shark, *Squatina africana* (Chondricthyes: Squatinidae) in Indian waters, confirmed by DNA barcoding. *Journal of Ichthyology*, 58 (3), 312–317.
https://doi.org/10.1134/S0032945218030013

Anam, R. & Mostarda, E. (2012) *Field Identification Guide to the Living Marine Resources of Kenya*. *FAO Species Identification Guide for Fishery Purposes.* FAO, Rome, 357 pp.

Annandale, N. (1908) A new sting ray of the genus *Trygon* from the Bay of Bengal. *Records of the Indian Museum, Calcutta*, 2 (Pt. 4), Art. 38, 393–394.

Annandale, N. (1909) Report on the fishes taken by the Bengal fisheries steamer "Golden Crown." Part I, Batoidei. *Memoirs of the Indian Museum*, 2 (1), 1–58.
https://doi.org/10.5962/bhl.title.13766

Archey, G. (1921) A new species of shark. *Transactions of the New Zealand Institute*, 53, 195–196.

Aschliman, N.C., Ebert, D.A. & Compagno, L.J.V. (2010) A new legskate (Rajoidei; genus *Cruriraja*) from southern Africa. *Copeia*, 3, 364–372.
https://doi.org/10.1643/CI-09-215

Ayres, W.O. (1855) [Descriptions of new species of Californian fishes.] A number of short notices read before the Society at several meetings in 1855. *Proceedings of the California Academy of Sciences*, Series 1, 1, 23–77.

Barbosa du Bocage, J.V. & de Brito Capello, F. (1864) Sur quelque espèces inédites de Squalidae de la tribu Acanthiana, Gray, qui fréquentent les côtes du Portugal. *Proceedings of the Zoological Society of London*, 1864, 260–263.

Barnard, K.H. (1923) Diagnoses of new species of marine fishes from South African waters. *Annals of the South African Museum*, 13 (Pt. 8), No. 14, 439–445.

Barnard, K.H. (1925) A monograph of the marine fishes of South Africa. Part I (Amphioxus, Cyclostomata, Elasmobranchii, and Teleostei-Isospondyli to Heterosomata). *Annals of the South African Museum*, 21, 1–418.

Barnard, K.H. (1927) A monograph of the marine fishes of South Africa. Part II (Teleostei–Discocephali to end. Appendix). *Annals of the South African Museum* 21, 419–1065.

Barnard, K.H. (1934) New records and descriptions of two new species of South African marine fishes. *Annals and Magazine of Natural History*, Series 10, 13 (15), 230–235.
https://doi.org/10.1080/00222933408654806

Barnard, K.H. (1935) Notes on South African marine fishes. *Annals of the South African Museum*, 30 (5), 645–658.
Barnard, K.H. (1937) Further notes on South African marine fishes. *Annals of the South African Museum*, 32, pt. 2 (6), 41–67.
Barnard, K.H. (1947) *A Pictorial Guide to South African Fishes. Marine and Freshwater*. Maskew Miller Ltd, Cape Town, 226 pp.
Barnard, K.H. (1948) Further notes on South African marine fishes. *Annals of the South African Museum*, 36 (5), 341–406.
Barnard, K.H. (1949) Occurrence of the spiny dogfish *Oxynotus centrina* in South African waters. *Nature*, 164, 970. https://doi.org/10.1038/164970b0
Barnard, K.H. (1959) *A Pictorial Guide to South African Fishes. Marine and Freshwater*. Maskew Miller Ltd, Cape Town, 226 pp.
Barnett, A., Braccini, J.M., Awruch, C.A. & Ebert, D.A. (2012) An overview on the role of Hexanchiformes in marine ecosystems: biology, ecology and conservation status of a primitive order of modern sharks. *Journal Fish Biology*, 80, 966–990. https://doi.org/10.1111/j.1095-8649.2012.03242.x
Bass , A.J., D'Aubrey, J.D. & Kistnasamy, N. (1973) Sharks of the east coast of southern Africa. I. The genus *Carcharhinus* (Carcharhinidae). *Investigational Report*. *Oceanographic Research Institute, Durban*, 33, 1–168.
Bass, A.J., D'Aubrey, J.D. & Kistnasamy, N. (1975a) Sharks of the east coast of southern Africa. II. The families Scyliorhinidae and Pseudotriakidae. *Investigational Report*. *Oceanographic Research Institute*, *Durban*, 37, 1–64.
Bass, A.J., D'Aubrey, J.D. & Kistnasamy, N. (1975b) Sharks of the east coast of southern Africa. III. The families Carcharhinidae (excluding *Mustelus* and *Carcharhinus*) and Sphyrnidae. *Investigational Report*. *Oceanographic Research Institute, Durban*, 38, 1–100.
Bass, A.J., D'Aubrey, J.D. & Kistnasamy, N. (1975c) Sharks of the east coast of southern Africa. IV. The families Odontaspididae, Scapanorhynchidae, Isuridae, Cetorhinidae, Alopiidae, Orectolobidae and Rhiniodontidae. *Investigational Report*. *Oceanographic Research Institute, Durban*, 39, 1–102.
Bass, A.J., D'Aubrey, J.D. & Kistnasamy, N. (1975d) Sharks of the east coast of southern Africa. V. The families Hexanchidae, Chlamydoselachidae, Heterodontidae, Pristiophoridae, and Squatinidae. *Investigational Report*. *Oceanographic Research Institute, Durban*, 43, 1–50.
Bass, A.J., D'Aubrey, J.D. & Kistnasamy, N. (1976) Sharks of the east coast of southern Africa. VI. The families Oxynotidae, Squalidae, Dalatiidae and Echinorhinidae. *Investigational Report*. *Oceanographic Research Institute, Durban*, 45, 1–103.
Bass, A.J. (1986) Families Chlamydoselachidae, Heterodontidae, Orectolobidae, Rhinicodontidae, Scyliorhinidae, Pseudotriakidae, Sphyrnidae, Lamnidae, Cetorhinidae, Alopiidae, Pseudocarchariidae, Squatinidae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 47–48 + 64–66 + 87–102 + 103 + 107.
Bass, A.J. & Compagno, L.J.V. (1986) Families Echinorhinidae, Proscyllidae, Odontaspidiidae, Mitsukurinidae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 63 + 103 + 104–105.
Bass, A.J., Compagno, L.J.V. & Heemstra, P.C. (1986) Family Squalidae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 49–62.
Bass, A.J. & Heemstra, P.C. (1986) Family Pristiophoridae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 106.
Bass, A.J., Heemstra, P.C. & Compagno, L.J.V. (1986) Families Hexanchidae, Carcharhinidae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 45–47 + 67–87.
Bigelow, H.B. & Schroeder, W.C. (1948a) New genera and species of batoid fishes. *Journal of Marine Research*, 7 (3), 543–566.
Bigelow, H.B. & Schroeder, W.C. (1948b) Sharks. Fishes of the Western North Atlantic Part 1. *Memoirs of the Sears Foundation for Marine Research*, Series 1, 1, 56–576.
Bigelow, H.B. & Schroeder, W.C. (1950) New and little known cartilaginous fishes from the Atlantic. *Bulletin of the Museum of Comparative Zoology*, 103 (7), 385–408.
Bigelow, H.B. & Schroeder, W.C. (1953) Fishes of the Western North Atlantic Part 2. Sawfishes, guitarfishes, skates, rays and chimaeroids. *Memoirs of the Sears Foundation for Marine Research*, Series 1, 2, 1–588.
Bigelow, H.B. & Schroeder, W.C. (1954) Deep water elasmobranchs and chimaeroids from the northwestern slope. *Bulletin of the Museum of Comparative Zoology*, 112 (2), 38–87.
Bigelow, H.B. & Schroeder, W.C. (1957) A study of the sharks of the suborder Squaloidea. *Bulletin of the Museum of Comparative Zoology*, 117 (1), 1–150.
Bigelow, H.B. & Schroeder, W.C. (1962) New and little known batoid fishes from the western Atlantic. *Bulletin of the Museum of Comparative Zoology*, 128 (4), 161–244.
Blainville, H. de (1816) Prodrome d'une nouvelle distribution systématique du règne animal. *Bulletin de la Société Philomatique, Paris*, 8, 105–112, 121–124.
Bleeker, P. (1851) Vijfde bijdrage tot de kennis der ichthyologische fauna van Borneo, met beschrijving van eenige nieuwe soorten van zoetwatervisschen. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, 2, 415–442.
Bleeker, P. (1852) Bijdrage tot de kennis der Plagiostomen van den Indischen Archipel. *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen*, 24, 1–92.
Bleeker, P. (1856) *Carcharias (Prionodon) amblyrhynchos*, eene nieuwe haaisoort, gevangen nabij het eiland Solombo. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, 10, 467–468.

Bleeker, P. (1859) Enumeratio specierum piscium hucusque in Archipelago indico observatarum, adjectis habitationibus citationibusque, ubi descriptiones earum recentiores reperiuntur, nec non speciebus Musei Bleekeriani Bengalensibus, Japonicis, Capensibus Tasmanicisque. *Acta Societatis Regiae Scientiarum Indo-Neêrlandicae*, 6, 1–276.

Bleeker, P. (1860a) Elfde bijdrage tot de kennis der vischfauna van Amboina. *Acta Societatis Regiae Scientiarum Indo-Neêrlandicae*, 8 (5), 1–14.
https://doi.org/10.5962/bhl.title.144153

Bleeker, P. (1860b) Zesde bijdrage tot de kennis der vischfauna van Japan. *Acta Societatis Regiae Scientiarum Indo-Neêrlandicae*, 8 (1), 1–104.
https://doi.org/10.5962/bhl.title.144153

Bloch, M.E. & Schneider, J.G. (1801) *Systema ichthyologiae iconibus ex illustratum*. *Vol. 2*. Sumtibus auctoris impressum et Bibliopolio Sanderiano commissum, Berlin, 584 pp.

Bonaparte, C.L. (1832) *Iconografia delle fauna italica per le quattro classi degli animali vertebrati, Roma*, Tomo III, Pesci., Fasc. 1, puntata 1–6, 2 pls.
https://doi.org/10.5962/bhl.title.70395

Bonaparte, C.L. (1834) s.n. *In*: *Iconografia della fauna italica per le quattro classi degli animali vertebrati, Roma*, Tomo III, Pesci., Fasc. 6–11, 29–58.

Bonaparte, C.L. (1838) s.n. *In*: *Selachorum tabula analytica. Nuovi annali delle scienze naturali e rendiconto dei lavori dell'Accademia della Scienze dell'Instituto di Bologna con appendice agraria, Bologna*, 2, 195–214.

Bonfil, R. & Abdallah, M. (2004) *Field Identification Guide to the Sharks and Rays of the Red Sea and Gulf of Aden. FAO Species Identification Guide for Fishery Purposes*. FAO, Rome, 71 pp.

Bonnaterre, J.P. (1788) *Tableau encyclopédique et méthodique des trois règnes de la nature.* Ichthyologie, Paris, 215 pp.
https://doi.org/10.5962/bhl.title.11660

Boulenger, G.A. (1895) Description of a new eagle-ray from Muscat. *Annals and Magazine of Natural History*, Series 6, 15 (86), Art. 15, 141.
https://doi.org/10.1080/00222939508677859

Boulenger, G.A. (1902) Description of a new South-African galeid selachian. *Annals and Magazine of Natural History*, Series 7, 10 (55), Art. 7, 51–52.
https://doi.org/10.1080/00222930208678632

Boulenger, G.A. (1903) Descriptions of six new perciform fishes from the coast of Natal. *Annals of the South African Museum*, 3 (3), 63–67.

Brauer, A. (1906) Die Tiefsee-Fische. I. Systematischer Teil. *In*: C. Chun. (Ed.), *Wissenschaftl. Ergebnisse der deutschen Tiefsee-Expedition "Valdivia," 1898–99, Jena*, 15, pp. 1–432.

Budker, P. (1935) Description d'un genre nouveau de la famille des Carcharinidés. *Bulletin du Muséum National d'Histoire Naturelle*, Série 2, 7 (2), 107–112.

Bustamante, C., Vargas-Caro, C. & Bennett, M.B. (2014) Not all fish are equal: functional biodiversity of cartilaginous fishes (Elasmobranchii and Holocephali) in Chile. *Journal of Fish Biology*, 85 (5), 1617–1633.
https://doi.org/10.1111/jfb.12517

Cadenat, J. (1960) Notes d'ichtyologie ouest-africaine. XXVII. *Raja doutrei*, espèce nouvelle des eaux profondes des côtes du Sénégal. *Bulletin de l'Institut Français d'Afrique Noire (Sér A) Sciences Naturelles*, 22 (1), 294–311.

Cadenat, J. (1963) Notes d'ichtyologie ouest-africaine. XXXIX. Notes sur les requins de la famille des Carchariidae et formes apparentées de l'Atlantique ouest-africain (avec la description d'une espèce nouvelle, *Pseudocarcharias pelagicus*, clasée dans un sous-genre nouveau). *Bulletin de l'Institut Francais d'Afrique Noire (Sér A) Sciences Naturelles*, 25, 526–543.

Cantor, T.E. (1849) Catalogue of Malayan fishes. *Journal of the Asiatic Society of Bengal*, 18 (2), 983–1443.

Carvalho, M.R. de (2016) Sleeper rays. Family Narkidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 170–181.
https://doi.org/10.1071/9780643109148

Carvalho, M.R. de, Last, P.R. & Séret, B. (2016) Torpedo rays. Family Torpedinidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 184–203.
https://doi.org/10.1071/9780643109148

Carvalho, M.R. de & Séret, B. (2016) Order Torpediniformes. Torpedinidae *In*: Carpenter, K.E. & De Angelis, N. (Eds.), *The Living Marine Resources of the Eastern Central Atlantic. Vol. 2. Bivalves, Gastropods, Hagfishes, Sharks, Batoid Fishes, and Chimaeras. FAO Species Identification Guide for Fishery Purposes*. FAO, Rome, pp. 1370–1378.

Castelnau, F.L. (1873) Contribution to the ichthyology of Australia. *Proceedings of the Zoological and Acclimatisation Society of Victoria, Melbourne*, 2, 37–158.

Chen, C.-T., Taniuchi, T. & Nose, Y. (1979) Notes on Blainville's dogfish, *Squalus blainville*, from Japan, with notes on *S. mitsukurii* and *S. japonicus*. *Japanese Journal of Ichthyology*, 26 (1), 26–42.

Clark, R.S. (1926) Rays and skates. A revision of the European species. *Fishery Board for Scotland, Scientific Investigations*, 1, 1–66.

Cliff, G. & Wilson, R.B. (1986) *Natal Sharks Board's Field Guide to Sharks and Other Marine Animals*. Natal Sharks Board, Umhlanga Rocks, 57 pp.

Collett, R. (1879) Fiske fra Nordhavs-Expeditionens sidste Togt, Sommeren 1878. *Forhandlinger i Videnskabs-selskabet i Christiania*, No. 14, 1–106. [for 1878]
Compagno, L.J.V. (1970) Systematics of the genus *Hemitriakis* (Selachii: Carcharhinidae), and related genera. *Proceedings of the California Academy of Sciences*, Series 4, 38 (4), 63–98.
Compagno, L.J.V. (1973) Interrelationships of living elasmobranchs. *In*: Greenwood, P.H., Miles, R. & Patterson, C. (Eds.), *Interrelationships of Fishes*. London. Academic Press. *Zoological Journal of the Linnean Society*, 53 (Supplment 1), pp. 15–61.
Compagno, L.J.V. (1984a) *FAO Species Catalogue. Sharks of the World. An Annotated and Illustrated Catalogue of Shark Species Known to Date. FAO Fisheries Synopsis. Vol. 4. No. 125. Part 1. Hexanchiformes to Lamniformes.* FAO, Rome, pp. 1–250.
Compagno, L.J.V. (1984b) *FAO Species Catalogue. Sharks of the World. An Annotated and Illustrated Catalogue of Shark Species Known to Date. FAO Fisheries Synopsis. Vol. 4. No. 125. Part 2. Carcharhiniformes.* FAO, Rome, pp. 251–655.
Compagno, L.J.V. (1986) Families Pristidae, Narkidae, Rhinobatidae, Myliobatidae, Mobulidae, Dasyatidae, Chimaeridae, Rhinochimaeridae, Callorhinchidae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 110–142, 144–147.
Compagno, L.J.V. (1988a) *Sharks of the Order Carcharhiniformes*. Princeton University Press, Princeton, New Jersey, 486 pp.
Compagno, L.J.V. (1988b) *Scyliorhinus comoroensis* sp. n., a new catshark from the Comoro Islands, western Indian Ocean (Carcharhiniformes, Scyliorhinidae). *Bulletin du Muséum National d'Histoire Naturelle, (Série 4), Section A: Zoologie Biologie et Ecologie Animales*, 10 (3), 603–625.
Compagno, L.J.V. (1999) An overview of chondrichthyan systematics and biodiversity in southern Africa. *Transactions of the Royal Society of South Africa*, 54, 75–120.
https://doi.org/10.1080/00359199909520406
Compagno, L.J.V. (2001) *Sharks of the World, an Annotated and Illustrated Catalogue of Shark Species Known to Date. Volume 2. Bullhead, Mackerel and Carpet Sharks (Heterodontiformes, Lamniformes and Orectolobiformes).* FAO, Rome, 269 pp.
Compagno, L.J.V. (2016) Sharks. *In*: Carpenter, K.E. & De Angelis, N. (Eds.), *The Living Marine Resources of the Eastern Central Atlantic. Vol. 2. Bivalves, Gastropods, Hagfishes, Sharks, Batoid Fishes, and Chimaeras. FAO Species Identification Guide for Fishery Purposes*. FAO, Rome, pp. 1122–1336.
Compagno, L., Dando, M. & Fowler, S. (2005) *Field Guide to the Sharks of the World*. Harper Collins Publishers Ltd, London, 368 pp.
Compagno, L.J.V. & Heemstra, P.C. (1984) *Himantura draco*, a new species of stingray (Myliobatiformes: Dasyatidae) from South Africa, with a key to the Dasyatidae and the first record of *Dasyatis kuhlii* (Müller & Henle, 1841) from southern Africa. *J.L.B. Smith Institute of Ichthyology Special Publication*, 33, 1–17.
Compagno, L.J.V. & Ebert, D.A. (2007) Southern African skate biodiversity and distribution. *Environmental Biology of Fishes*, 80, 125–145.
https://doi.org/10.1007/s10641-007-9243-4
Compagno, L.J.V., Ebert, D.A. & Cowley, P.D. (1991) Distribution of offshore demersal cartilaginous fishes (class Chondrichthyes) of the west coast of southern Africa, with notes on their systematics. *South African Journal of Marine Science*, 11, 43–139.
https://doi.org/10.2989/025776191784287664
Compagno, L.J.V., Ebert, D.A. & Smale, M.J. (1989) *Guide to the Sharks and Rays of Southern Africa*. Struik Publishers, Cape Town, 158 pp.
Compagno, L.J.V. & Heemstra, P.C. (2007) *Electrolux addisoni*, a new genus and species of electric ray from the east coast of South Africa (Rajiformes: Torpedinoidei: Narkidae), with a review of torpedinoid taxonomy. *Smithiana*, 7, 15–49.
Compagno, L.J.V. & Smale, M.J. (1985) *Paragaleus leucolomatus*, a new shark from South Africa, with notes on the systematics of hemigaleid sharks (Carcharhiniformes: Hemigaleidae). *The J.L.B Smith Institute of Ichthyology Special Publication*, 37, 1–21.
Compagno, L.J.V., Stehmann, M. & Ebert, D.A. (1990). *Rhinochimaera africana*, a new longnosed chimaera from southern Africa, with comments on the systematics and distribution of the genus *Rhinochimaera* Garman, 1901 (Chondrichthyes, Chimaeriformes, Rhinochimaeridae). *South African Journal of Marine Science*, 9, 201–222.
https://doi.org/10.2989/025776190784378646
Cornejo, R., Vélez-Zuazo, X., González-Pestana, A., Kouri, C. J. & Mucientes, G. (2015) An updated checklist of Chondrichthyes from the southeast Pacific off Peru. *Check List*, 11 (6), 1809.
https://doi.org/10.15560/11.6.1809
Cowley, P.D. & Compagno, L.J.V. (1993) A taxonomic re-evaluation of the blue stingray from southern Africa (Myliobatiformes: Dasyatidae). *South African Journal of Marine Science*, 13, 135–149.
https://doi.org/10.2989/025776193784287437
Cuvier, G. (1816) *Le Règne Animal distribué d'après son organisation pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée. Les reptiles, les poissons, les mollusques et les annélides. Vol. 2. 1st Edition*. Chez Déterville, Paris, 532 pp.
Cuvier, G. (1829) *Le Règne Animal, distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée. Vol. 2. 2nd Edition*. Chez Déterville, Paris, 406 pp.

Cuvier, G. (1832) Sur le poisson appelé *Machaera*. *Nouvelles Annales du Muséum d'Histoire Naturelle, Paris*, 1, 43–49.
D'Aubrey, J.D. (1964a) Preliminary guide to the sharks found off the east coast of South Africa. *South African Association for Marine Biological Research, Oceanographic Research Institute, Investigational Report*, 8, 1–95.
D'Aubrey, J.D. (1964b) A carchariid shark new to South African waters. *South African Association for Marine Biological Research, Oceanographic Research Institute, Investigational Report*, 9, 1–16.
D'Aubrey, J.D. (1969) Two species of shark new to South African waters. *South African Association for Marine Biological Research, Research Bulletin*, 7, 30–32.
Dahl, R.B., Sigsgaard, E.E., Mwangi, G., Thomsen, P.F., Jørgensen, R.D., de O. Torquato, F., Olsen, L. & Møller, P.R. (2019) The sandy zebra shark: a new color morph of the zebra shark *Stegostoma tigrinum*, with a redescription of the species and a revision of its nomenclature. *Copeia*, 107 (3), 524–541.
https://doi.org/10.1643/CG-18-115
Daly-Engel, T.S., Baremore, I.E., Grubbs, R.D., Gulak, S.J.B., Graham, R.T. & Enzenauer, M.P. (2019) Resurrection of the sixgill shark *Hexanchus vitulus* Springer & Waller, 1969 (Hexanchiformes, Hexanchidae), with comments on its distribution in the northwest Atlantic Ocean. *Marine Biodiversity*, 49 (2), 759–768.
https://doi.org/10.1007/s12526-018-0849-x
da Silva C., Booth, A.J., Dudley, S.F.J., Kerwath, S.E., Lamberth, S.J., Leslie, R.W., McCord, M.E., Sauer, W.H.H. & Zweig, T. (2015) A description and updated overview of the status and management of South Africa's chondrichthyan fisheries. *South African Journal of Marine Science*, 37, 233–248.
https://doi.org/10.2989/1814232X.2015.1044471
da Silva C., Kerwath, S.E., Wilke, C.G., Meÿer, M. & Lamberth, S.J. (2010) First documented southern transatlantic migration of a blue shark *Prionace glauca* tagged off South Africa. *African Journal of Marine Science*, 3, 639–642.
https://doi.org/10.2989/1814232X.2010.540777
Davies, D.H. (1963) Shark attack and its relation to temperature, beach patronage and seasonal abundance of dangerous sharks. *Oceanographic Research Institute, Investigational Report*, 6, 1–43.
Davies, D.H. (1964) *About Sharks and Shark Attack*. Shuter & Shooter, Pietermaritzburg, 257 pp.
Davies, D.H. & Joubert, L.S. (1966) Tag evaluation and shark tagging in South African waters. *Oceanographic Research Institute, Investigational Report*, 12, 1–36.
Davies, D.H. & Joubert, L.S. (1967) Tag evaluation and shark tagging in South African waters. 1964–65. *In*: Gilbert, P.W., Mathewson, R.F. & Rall, D.P. (Eds.), *Sharks, Skates, and Rays*. Johns Hopkins Press, Baltimore, Maryland, pp. 111–140.
Dean, B. (1906) Chimaeroid fishes and their development. *Carnegie Institution of Washington Publications*, 32, 1–195.
https://doi.org/10.5962/bhl.title.32902
de Brito Capello, F. (1868) Descripção de dois peixes novos provenientes dos mares de Portugal. *Jornal do Sciências Mathemáticas, Physicas e Naturaes, Lisboa*, 1, 314–317.
De Bruyn, P., Dudley, S.F.J., Cliff, G. & Smale, M.J. (2005) Sharks caught in the protective gill nets off KwaZulu-Natal, South Africa. 11. The scalloped hammerhead shark *Sphyrna lewini* (Griffith and Smith). *African Journal of Marine Science*, 27 (3), 517–528.
https://doi.org/10.2989/18142320509504112
de Buen, F. (1959) Notas preliminares sobre la fauna marina preabismal de Chile, con descripción de una familia de rayas, dos géneros y siete especies nuevos. *Boletim do Museu Nacional de Chile*, 27 (3), 171–201.
Del Moral-Flores, L.F., Morrone, J.J., Alcocer Durand, J., Espinosa-Pérez, H. & Pérez-Ponce de León, G. (2015) Listado anotado de los tiburones, rayas y quimeras (Chondrichthyes, Elasmobranchii, Holocephali) de México. *Arxius de Miscel·lània Zoològica*, 13, 47–163.
https://doi.org/10.32800/amz.2015.13.0047
Didier, D.A. (2016) Chimaeras. *In*: Carpenter, K.E. & De Angelis, N. (Eds.), *The Living Marine Resources of the Eastern Central Atlantic. Vol. 2. Bivalves, Gastropods, Hagfishes, Sharks, Batoid Fishes, and Chimaeras. FAO Species Identification Guide for Fishery Purposes*. FAO, Rome, pp. 1441–1456.
Didier, D.A., Kemper, J.M. & Ebert, D.A. (2012) Phylogeny, biology, and classification of extant Holocephali. *In*: Carrier, J.C., Musick J.A. & Heithaus. M.R. (Eds.), *The Biology of Sharks and Their Relatives*. CRC Press, Boca Raton, Florida, pp. 97–121.
https://doi.org/10.1201/b11867-6
Donovan, E. (1808) *The natural history of British fishes, including scientific and general descriptions of the most interesting species, and an extensive selection of accurately finished coloured plates. Vol. II*. printed for the author and F. C. and J. Rivington, London, pp. 407–516, pls. 97–120.
Doyle, D. (1964) Shark fight at Buffels bay. *Fin Diver*, 1 (8), 18–19.
Duméril, A.H.A. (1853) Monographie de la tribu des Scylliens ou Roussettes (poissons plagiostomes) comprenant deux espèces nouvelles. *Revue et Magasin de Zoologie*, Séries 2, 5, 8–25 + 73–87 + 119–130.
Duméril, A.H.A. (1865) *Histoire naturelle des poissons ou ichthyologie générale. Tome Premier. I. Elasmobranches. Plagiostomes et Holocéphales ou Chimères*. *Vol. 1.* Librarie Encylopedique de Roret, Paris, 720 pp.
https://doi.org/10.5962/bhl.title.2111
Duméril, A.M.C. (1805) *Zoologie analytique, ou méthode naturelle de classification des animaux.* Allais, Paris, 344 pp.

Ebert, D.A. (1990) The taxonomy, biogeography and biology of cow and frilled sharks (Chondrichthyes: Hexanchiformes). Unpublished Ph.D. dissertation, Rhodes University, Grahamstown, 308 pp.
Ebert, D.A. (1991a) Observations on the predatory behaviour of the sevengill shark, *Notorynchus cepedianus*. *South African Journal of Marine Science*, 11, 455–465.
https://doi.org/10.2989/025776191784287637
Ebert, D.A. (1991b) Diet of the sevengill shark, *Notorynchus cepedianus*, in the temperate coastal waters of southern Africa. *South African Journal of Marine Science*, 11, 565–572.
https://doi.org/10.2989/025776191784287547
Ebert, D.A. (1994) Diet of the sixgill shark *Hexanchus griseus* off southern Africa. *South African Journal of Marine Science*, 14, 213–218.
https://doi.org/10.2989/025776194784287030
Ebert, D.A. (1996) Biology of the sevengill shark, *Notorynchus cepedianus* (Peron, 1807), in the temperate coastal waters of southern Africa. *South African Journal of Marine Science*, 17, 93–103.
https://doi.org/10.2989/025776196784158545
Ebert, D.A. (2002a) Some observations on the reproductive biology of the sixgill shark, *Hexanchus griseus* (Bonnaterre, 1788) from southern African waters. *South African Journal of Marine Science*, 24, 359–363.
https://doi.org/10.2989/025776102784528439
Ebert, D.A. (2002b) Ontogenetic changes in the diet of the sevengill shark (*Notorynchus cepedianus*). *Marine and Freshwater Research*, 53, 517–523.
Ebert D.A. (2013) Deep-sea cartilaginous fishes of the Indian Ocean. Vol. 1. Sharks. *FAO Species Catalogue for Fishery Purposes No. 8. Vol. 1*. FAO, Rome, 256 pp.
Ebert D.A. (2014) Deep-sea cartilaginous fishes of the Indian Ocean. Vol. 2. Batoids and chimaeras. *FAO Species Catalogue for Fishery Purposes No. 8. Vol. 2*. FAO, Rome, 129 pp.
Ebert, D.A. (2015) Deep-sea cartilaginous fishes of the Southeastern Atlantic Ocean. *FAO Species Catalogue for Fishery Purposes No. 9*. FAO, Rome, 251 pp.
Ebert, D.A. (2016) Deep-sea Cartilaginous Fishes of the Southeastern Pacific Ocean. *FAO Species Catalogue for Fishery Purposes*. FAO, Rome, 241 pp.
Ebert, D.A. & Dando, M. (2020) *Field Guide to Sharks, Rays, & Chimaeras of Europe and the Mediterranean*. Princeton University Press, Princeton, 383 pp.
Ebert, D.A., Bigman, J.S. & Lawson, J.M. (2017) Biodiversity, life history, and conservation of northeastern Pacific Chondrichthyans. *Advances in Marine Biology*, 77, 9–78.
https://doi.org/10.1016/bs.amb.2017.07.001
Ebert, D.A. & Cailliet, G.M. (2011) *Pristiophorus nancyae* sp. nov., a new species of sawshark (Chondrichthyes: Pristiophoridae) from southern Africa. *Bulletin of Marine Science*, 87 (3), 501–512.
https://doi.org/10.5343/bms.2010.1108
Ebert, D.A. & Compagno, L.J.V. (2007) Biodiversity and systematics of skates (Chondrichthyes: Rajiformes: Rajoidei). *Environmental Biology of Fishes*, 80, 111–124.
https://doi.org/10.1007/s10641-007-9247-0
Ebert D.A. & Compagno, L.J.V. (2009) *Chlamydoselachus africana*, a new species of frilled shark from southern Africa (Chondrichthyes, Hexanchiformes, Chlamydoselachidae). *Zootaxa*, 2173 (1), 1–18.
https://doi.org/10.11646/zootaxa.2173.1.1
Ebert, D.A., Compagno, L.J.V. & Cowley, P.D. (1992) A preliminary investigation of the feeding ecology of squaloid sharks off the west coast of southern Africa. *South African Journal of Marine Science*, 12, 601–609.
https://doi.org/10.2989/02577619209504727
Ebert, D.A., Compagno, L.J.V. & Cowley, P.D. (2006) Reproductive biology of catsharks (Chondrichthyes: Scyliorhinidae) from off the west coast of southern Africa. *ICES Journal of Marine Science*, 63, 1053–1065.
https://doi.org/10.1016/j.icesjms.2006.04.016
Ebert, D.A., Compagno, L.J.V. & Cowley, P.D. (2008) Aspects on the reproductive biology of skates (Chondrichthyes: Rajiformes: Rajoidei) from southern African waters. *ICES Journal of Marine Science*, 65, 81–102.
https://doi.org/10.1093/icesjms/fsm169
Ebert, D.A., Compagno, L.J.V. & DeVries, M.J. (2011) A new species of lanternshark (Squaliformes: Etmopteridae: *Etmopterus*) from southern Africa. *Copeia*, 2011 (3), 379–384.
https://doi.org/10.1643/CI-09-183
Ebert, D.A. & Cowley, P.D. (2003) Diet, feeding behaviour, and habitat utilisation of the blue stingray, *Dasyatis chrysonta* (Smith, 1828) from southern Africa waters. *Marine and Freshwater Research*, 54, 957–965.
https://doi.org/10.1071/MF03069
Ebert, D.A. & Cowley, P.D. (2009) Reproduction and development of the blue stingray, *Dasyatis chrysonota*, in southern African waters. *Journal of the Marine Biological Association of the U.K.*, 89 (4), 809–815.
https://doi.org/10.1017/S0025315408002907
Ebert, D.A., Cowley, P.D. & Compagno, L.J.V. (1991) A preliminary investigation of the feeding ecology of skates (Batoidea: Rajidae) off the west coast of southern Africa. *South African Journal of Marine Science*, 10, 71–81.
https://doi.org/10.2989/02577619109504621

Ebert, D.A., Cowley, P.D. & Compagno, L.J.V. (1996) A preliminary investigation of the feeding ecology of catsharks (Scyliorhinidae) off the west coast of southern Africa. *South African Journal of Marine Science*, 17, 233–240. https://doi.org/10.2989/025776196784158563

Ebert, D.A., Cowley, P.D. & Compagno, L.J.V. (2002) First records of the longnose spiny dogfish, *Squalus blainvillei* (Squalidae) and deep-water stingray, *Plesiobatis daviesi* (Urolophidae) from South African waters. *South African Journal of Marine Science*, 24, 355–357. https://doi.org/10.2989/025776102784528538

Ebert, D.A. & Dando, M. (2014) *On Board Guide for the Identification of Pelagic Sharks and Rays of the Western Indian Ocean*. SmartFish Programme, FAO, Rome & Indian Ocean Commission, Port Louis, 109 pp.

Ebert, D.A., Fowler, S. & Compagno, L.J.V. (2013) *Sharks of the World: A Fully Illustrated Guide to the Sharks of the World*. Wild Nature Press, Plymouth, 528 pp.

Ebert, D.A. & Gon, O. (2017) A new species of guitarfish (Rhinopristiformes: Rhinobatidae: *Rhinobatos*) from the southwestern Indian Ocean. *Zootaxa*, 4276 (2), 204–214. https://doi.org/10.11646/zootaxa.4276.2.3

Ebert, D.A., Haas, D.L. & de Carvalho, M.R. (2015) *Tetronarce cowleyi* sp. nov., a new species of electric ray from southern Africa (Chondrichthyes: Torpediformes: Torpedinidae). *Zootaxa*, 3936 (2), 237–250. https://doi.org/10.11646/zootaxa.3936.2.4

Ebert, D.A., Ho, H.-C., White, W.T. & de Carvalho, M.R. (2013c) Introduction to the systematics and biodiversity of sharks, rays, and chimaeras (Chondrichthyes) of Taiwan. *Zootaxa*, 3752 (1), 5–19. https://doi.org/10.11646/zootaxa.3752.1.3

Ebert, D.A. & Mostarda, E. (2013) *Identification Guide to the Deep-sea Cartilaginous Fishes of the Indian Ocean.* FishFinder Programme, FAO, Rome, 76 pp.

Ebert, D.A. & Mostarda, E. (2015) *Identification Guide to the Deep-sea Cartilaginous Fishes of the Southeastern Atlantic Ocean.* FishFinder Programme, FAO, Rome, 70 pp.

Ebert, D.A. & Stehmann, M.F.W. (2013) *Sharks, Batoids, and Chimaeras of the North Atlantic. FAO Species Catalogue for Fishery Purposes. No. 7*. FAO, Rome, 523 pp.

Ebert, D.A., Straube, N., Leslie, R.W. & Weigmann, S. (2016) *Etmopterus alphus* n. sp.: a new lanternshark (Squaliformes: Etmopteridae) from the south-western Indian Ocean. *African Journal of Marine Science*, 38 (3), 329–340. https://doi.org/10.2989/1814232X.2016.1198275

Ebert, D.A. & van Hees, K.E. (2015) Beyond jaws: rediscovering the "*Lost Sharks*" of southern Africa. *African Journal of Marine Science*, 37, 141–156. https://doi.org/10.2989/1814232X.2015.1048730

Ebert, D.A., White, W.T., Goldman, K.J., Compagno, L.J.V., Daly-Engel, T.S. & Ward, R. (2010) Reevaluation and redescription of *Squalus suckleyi* (Girard, 1854) from the North Pacific, with comments on the *Squalus acanthias* subgroup (Squaliformes: Squalidae). *Zootaxa*, 2612 (1), 22–40. https://doi.org/10.11646/zootaxa.2612.1

Ebert, D.A., White, W.T. & Ho, H.-C. (2013b) Redescription of *Hexanchus nakamurai* Teng 1962 (Chondrichthyes: Hexanchiformes: Hexanchidae), with designation of a neotype. *Zootaxa*, 3752 (1), 20–34. https://doi.org/10.11646/zootaxa.3752.1.4

Ebert, D.A., White, W.T., Ho, H.-C., Last, P.R., Nakaya, K., Séret, B., Straube, N. & de Carvalho, M.R. (2013d) An annotated checklist of Taiwan Chondrichthyans. *Zootaxa*, 3752 (1), 279–386. https://doi.org/10.11646/zootaxa.3752.1.17

Ebert, D.A. & Wilms, H.A. (2013) *Pristiophorus lanae* sp. nov., a new sawshark species from the Western North Pacific, with comments on the genus *Pristiophorus* Müller & Henle, 1837 (Chondrichthyes: Pristiophoridae). *Zootaxa*, 3752 (1), 86–100. https://doi.org/10.11646/zootaxa.3752.1.7

Ehemann, N.R., González-González, L.V., Chollet-Villalpando, J.G. & Cruz-Agüero, J.D.L. (2018) Updated checklist of the extant Chondrichthyes within the Exclusive Economic Zone of Mexico. *ZooKeys*, 774, 17–39. https://doi.org/10.3897/zookeys.774.25028

Euphrasen, B.A. (1790) *Raja* (*Narinari*). *Kongliga Vetenskaps Akademiens nya Handlingar, Stockholm*, 11 (for 1790), 217–219.

Everett, B.I., Cliff, G., Dudley, S.F.J., Wintner, S.P. & van der Elst, R.P. (2015) So sawfish (*Pristis* spp.) represent South Africa's first local extirpation of a marine elasmobranch in the modern era? *African Journal of Marine Science*, 37 (2), 275–284. https://doi.org/10.2989/1814232X.2015.1027269

Faber, F. (1829) *Naturgeschichte der Fische Islands*. Frankfurt-am-Main, 206 pp.

Faria, V.V., McDavitt, M.T., Charvet, P., Wiley, T.R., Simpfendorfer, C.A. & Naylor, G.J.P. (2013) Species delineation and global population structure of critically endangered sawfishes (Pristidae). *Zoological Journal of the Linnean Society*, 167, 136–164. https://doi.org/10.1111/j.1096-3642.2012.00872.x

Fennessy, S.T. (1994) Incidental capture of elasmobranchs by commercial prawn trawlers on the Tugela Bank, Natal, South Africa. *South African Journal of Marine Science*, 14 (1), 287–296. https://doi.org/10.2989/025776194784287094

Fernholm, B. & Wheeler, A.C. (1983) Linnaean fish specimens in the Swedish Museum of Natural History, Stockholm. *Zoological Journal of the Linnean Society*, 78 (3), 199–286. https://doi.org/10.1111/j.1096-3642.1983.tb00867.x

Figueiredo, P.F. de & Carvalho, M.R. de (2018) Comparative morphology and systematics of the cookiecutter sharks, genus *Isistius* Gill (1864) (Chondrichthyes: Squaliformes: Dalatiidae). *PLoS ONE*, 13 (8), e0201913. https://doi.org/10.1371/journal.pone.0201913

Flammang, B.E., Ebert, D.A. & Cailliet, G.M. (2007) Egg cases of the genus *Apristurus* (Chondrichthyes: Scyliorhinidae): phylogenetic and ecological implications. *Zoology*, 110, 308–317. https://doi.org/10.1016/j.zool.2007.03.001

Forsskål, P.S. (1775) *Descriptiones animalium avium, amphibiorum, piscium, insectorum, vermium; quae in itinere orientali observavit... Post mortem auctoris edidit Carsten Niebuhr*. ex officina Mölleri, Hauniae, 20 + xxxiv + 164 pp. https://doi.org/10.5962/bhl.title.2154

Forster, J.R. (1781) *Zoologia Indica Selecta Tabulis XV aeneis illustrata [Indische Zoologie oder Systematische Beschreibungen seltener und unbekannter Thiere aus Indien, mit 15 illuminirten Kupfertafeln erläutert]*. Johann Jacob Gebauer, Halle, 42 pp.

Fowler, H.W. (1908) Notes on sharks. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 60, 52–70.

Fowler, H.W. (1910) Notes on batoid fishes. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 62, 468–475.

Fowler, H.W. (1925a) Descriptions of three new marine fishes from the Natal coast. *Annals of the Natal Museum*, 5 (2), 195–200.

Fowler, H.W. (1925b) Fishes from Natal, Zululand and Portuguese East Africa. *Proceedings of the Academy of Natural Sciences, Philadelphia*, 1925, 77, 187–268.

Fowler, H.W. (1926) Descriptions of three new fishes from the Natal coast. *Annals of the Natal Government Museum*, 5 (3), 399–402.

Fowler, H.W. (1934a) Descriptions of new fishes obtained 1907 to 1910, chiefly in the Philippine Islands and adjacent seas. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 85 (for 1933), 233–367.

Fowler, H.W. (1934b) Fishes obtained by Mr. H. W. Bell-Marley chiefly in Natal and Zululand in 1929 to 1932. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 86, 405–514.

Fowler, H.W. (1934c) Natal fishes obtained by Mr. H. W. Bell-Marley. *Annals of the Natal Museum*, 7 (3), 403–433.

Fowler, H.W. (1935) South African fishes received from Mr. H. W. Bell-Marley in 1935. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 87, 361–408.

Fowler, H.W. (1936) The marine fishes of West Africa based on the collection of the American Museum Congo expedition, 1909–1915. Part 1. *Bulletin of the American Museum of Natural History*, 70 (1), 1–605.

Fowler, H.W. (1941) The fishes of the groups Elasmobranchii, Holocephali, Isospondyli, and Ostarophysi obtained by the U.S. Bureau of Fisheries streamer "Albatross" in 1907 to 1910, chiefly in the Philippine Islands and adjacent seas. *Bulletin United States National Museum*, 100, 1–879.

Fowler, H.W. (1969) A catalog of World fishes (XI). *Quarterly Journal of the Taiwan Museum, Taipei*, 22 (3/4), 125–190. [catalog pp. 501–566]

Fraser-Brunner, A. (1949) Notes on the electric rays of the genus *Torpedo*. *Annals and Magazine of Natural History*, Seris 12, 2 (24), 943–947. https://doi.org/10.1080/00222934908654036

Freer, D.W.L. & Griffiths, C.L. (1993) The fishery for, and general biology of, the St Joseph *Callorhinchus capensis* (Dumeril) off the south-western Cape, South Africa. *South African Journal of Marine Science*, 13, 63–74. https://doi.org/10.2989/025776193784287428

Fricke, R. (1999a) *Fishes of the Mascarene Islands (Réunion, Mauritius, Rodriguez): an Annotated Checklist, with Descriptions of New Species*. *Theses Zoologicae. Vol. 31*. Koeltz Scientific Books, Koenigstein, 759 pp.

Fricke, R. (1999b) Annotated checklist of the marine and estuarine fishes of Germany, with remarks of their taxonomic identity. *Stuttgarter Beiträge zur Naturkunde*, Serie A (Biologie), 587, 1–67.

Fricke, R. (2000) Invalid neotypes. *Copeia*, 2000 (2), 639–640. https://doi.org/10.1643/0045-8511(2000)000[0640:ENAN]2.0.CO;2

Fricke, R. & Koch, I. (1990) A new species of the lantern shark genus *Etmopterus* from southern Africa (Elasmobranchii: Squalidae). *Stuttgarter Beiträge zur Naturkunde*, Series A (Biologie), 450, 1–9.

Fricke, R., Eschmeyer, W.N. & Van der Laan, R. (Eds.) (2020) Eschmeyer's catalog of fishes: genera, species, and references. Available from: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp (accessed 30 June 2020)

Fricke, R., Mahafina, J., Behivoke, F., Jaonalison, H., Léopold, M. & Ponton, D. (2018) Annotated checklist of the fishes of Madagascar, southwestern Indian Ocean, with 158 new records. *FishTaxa*, 3 (1), 1–432.

Garman, S. (1880) New species of selachians in the museum collection. *Bulletin of the Museum of Comparative Zoology* 6 (11), 167–172.

Garman, S. (1884) An extraordinary shark. *Bulletin of the Essex Institute*, 16, 47–55.

Garman, S. (1901) Genera and families of the chimaeroids. *Proceedings of the New England Zoölogical Club*, 2, 75–77.

Garman, S. (1904) The chimaeroids (Chismopnea Raf., 1815; Holocephala Müll., 1834), especially *Rhinochimaera* and its allies. *Bulletin of the Museum of Comparative Zoology*, 41 (2), 245–272.
Garman, S. (1906) New Plagiostomia. *Bulletin of the Museum of Comparative Zoology*, 46, 203–208.
Garman, S. (1908) New Plagiostomia and Chismopnea. *Bulletin of the Museum of Comparative Zoology*, 51 (9), 249–256.
Garman, S. (1911) The Chismopnea (chimaeroids). *Memoirs of the Museum of Comparative Zoology*, 40 (3), 81–101. https://doi.org/10.5962/bhl.title.49087
Garman, S. (1913) The Plagiostomia (sharks, skates, and rays). *Memoirs of the Museum of Comparative Zoology, Harvard College*, 36, 1–515.
Garrick, J.A.F. (1956) Studies on New Zealand Elasmobranchii. Part V. *Scymnodalatias* n. g. Based on *Scymnodon sherwoodi* Archey, 1921 (Selachii). *Transactions of the Royal Society of New Zealand*, 83 (3), 555–571.
Garrick, J.A.F. (1967) A broad view of *Carcharhinus* species, their systematics and distribution. *In:* Gilbert, P.W., Mathewson, R.F. & Rall, D.P. (Eds.), *Sharks, Skates, and Rays*. Johns Hopkins Press, Baltimore, Maryland, pp. 85–91.
Garrick, J.A.F. (1982) Sharks of the genus *Carcharhinus*. *NOAA (National Oceanic and Atmospheric Administration) Technical Report NMFS (National Marine Fisheries Service) Circular*, 445, 1–194.
Garrick, J.A.F. & Springer, S. (1964) *Isistius plutodus*, a new squaloid shark from the Gulf of Mexico. *Copeia*, 1964 (4), 678–682. https://doi.org/10.2307/1441443
Geoffroy St. Hilaire, E. (1817) s.n. *In*: *Poissons du Nil, de la mer Rouge et de la Méditerranée. In*: *Description de l'Egypte ou recueil des observations et des recherches qui ont été faites en Égypte pendant l'expedition de l'Armée français, publié par les ordres de sa Majesté-L'Empereur Napoléon le Grand. (Imprimerie Impériale). Vol. 1*. *Part 1*. Histoire Naturelle, Paris, pp. 1–52, pls. 1–17 (1809) + 18–27 (1817).
Gilbert, C.R. (1967) A revision of the hammerhead sharks (family Sphyrnidae). *Proceedings of the United States National Museum*, 119 (3539), 1–88. https://doi.org/10.5479/si.00963801.119-3539.1
Gilchrist, J.D.F. (1902) Catalogue of fishes recorded from South Africa. *Cape of Good Hope, Department of Agriculture, Marine Investigations in South Africa*, 1, 97–179.
Gilchrist, J.D.F. (1913) Description of a new species of sting-ray (*Trygon*) from South Africa. *Transactions of the Royal Society of South Africa*, 3, 33–34. https://doi.org/10.1080/00359191309519676
Gilchrist, J.D.F. (1921) Fisheries and Marine Biological Survey. Report no. 1 for the Year 1920. Annexure A. List of Fishes, etc., procured; Annexure B., List of stations of SS "Pickle"; Annexure C., Journal of SS "Pickle". *Report of the Fisheries and Marine Biological Survey, Union of South Africa*, 1, I–Ill.
Gilchrist, J.D.F. (1922a) Fisheries and Marine Biological Survey. Report no. 2 for the Year 1921. Annexure A. List of Fishes, etc., procured; Annexure B., List of stations of SS "Pickle"; Annexure C., Journal of SS "Pickle". *Report of the Fisheries and Marine Biological Survey, Union of South Africa*, 2, 1–85.
Gilchrist, J.D.F. (1922b) Deep-sea fishes procured by the S.A. "Pickle" (Part I.). Special Report (3), *Report of the Fisheries and Marine Biological Survey, Union of South Africa*, 2, 41–79.
Gilchrist, J.D.F. & Thompson, W.W. (1911) Descriptions of fishes from the coast of Natal. Pt 3. *Annals of the South African Museum*, 11 (2), 29–58. https://doi.org/10.5962/bhl.part.5070
Gilchrist, J.D.F. & Thompson, W.W. (1914) Description of three new South African fishes. *Marine Biological Report, Union of South Africa, Province of the Cape of Good Hope*, 2 (7), 128–131.
Gilchrist, J.D.F. & Thompson, W.W. (1916) A catalogue of the sea fishes recorded from Natal. Part I. *Annals of the Durban Museum*, 1 (3), 255–290.
Gilchrist, J.D.F. & von Bonde, C. (1924) Deep-sea fishes procured by the S.S. "Pickle" (Part II). *Report Fisheries and Marine Biological Survey, Union of South Africa*, 3 (7), 1–24. [1922]
Gill, T.N. (1862) Analytical synopsis of the order of Squali; and revision of the nomenclature of the genera. *Annals of the Lyceum of Natural History of New York*, 7, 367–408. https://doi.org/10.1111/j.1749-6632.1862.tb00166.x
Gill, T.N. (1865) Synopsis of the eastern American sharks. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 16, 258–265.
Gill, T.N. (1872) Arrangement of the families of fishes, or classes Pisces, Marsipobranchii, and Leptocardii. *Smithsonian Miscellaneous Collections*, 247, 1–49. https://doi.org/10.5962/bhl.title.18974
Gill, T.N. (1893) Families and subfamilies of fishes. *Memoirs of the National Academy of Science Memoirs*, VI, 127–138. https://doi.org/10.5962/bhl.part.6303
Giltay, L. (1928) Notes ichthyologiques. II. Une espèce nouvelle de *Rhinobatus* du Congo belge (*Rhinobatus congolensis*, nov. sp.). *Annales de la Société Royale Zoologique de Belgique*, 59, 21–27.
Gmelin, J.F. (1789) *Caroli a Linné...Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species; cum characteribus, differentiis, synonymis, locis. Editio decimo tertia, aucta, reformata. 1788–93*. *3 Vols. in 9 parts. Vol. 1. Pt. 3*. s.n., Lipsiae, pp. 1033–1516.

Golani, D. & Fricke, R. (2015) Checklist of Red Sea fishes with delineation of the Gulf of Suez, Gulf of Aqaba, endemism and Lessepsian migrants. *Zootaxa*, 4509 (1), 1–215.
https://doi.org/10.11646/zootaxa.4509.1.1

Gon, O. & Skelton, P.H. (1997) A history of the fish collection of South Africa. *In:* Pietsch, T.W. & Anderson, W.D. (Eds.), *Collection Building in Ichthyology and Herpetology*. *American Society of Ichthyologists and Herpetologists, Special Publication*, 3, pp. 133–168.

Goode, G.B. & Bean, T.H. (1895) On *Harriotta*, a new type of chimaeroid fish from the deeper waters of the northwestern Atlantic. *Scientific Results of Exploration by the U. S. Fish Commission Steamer Albatross*. *Proceedings of the United States National Museum*, 1894, 17 (1014), 471–473.
https://doi.org/10.5479/si.00963801.17-1014.471

Goode, G.B. & Bean, T.H. (1896) Oceanic ichthyology, a treatise on the deep-sea and pelagic fishes of the world, based chiefly upon the collections made by the steamers Blake, Albatross, and Fish Hawk in the northwestern Atlantic, with an atlas containing 417 figures. *Special Bulletin United States National Museum*, 2, 1–553.

Gray, J.E. (1830–1835) *Illustrations of Indian zoology; chiefly selected from the collection of Major-General Hardwicke, F.R.S.* Treuttel, Wurtz, Treuttel, Jun. and Richter [unpaginated]
https://doi.org/10.5962/bhl.title.95127

Gray, J.E. (1851) *List of the Specimens of Fish in the Collection of the British Museum. Part I. Chondropterygii*. British Museum (Natural History), London, 160 pp.

Gray, J.E. (1854) *Catalogue of Fish Collected and Described by Laurence Theodore Gronow, now in the British Museum.* British Museum (Natural History), London, 196 pp.

Griffith, E. & Smith, C.H. (1834) The class Pisces, arranged by the Baron Cuvier, with supplementary additions, by Edward Griffith, F.R.S. &c. and Lieut.-Col. Charles Hamilton Smith, F.R., L.S.S., &c. &c. *In*: Cuvier, G. (Ed.), *The Animal Kingdom, Arranged in Conformity with its Organization, by the Baron Cuvier, Member of the Institute of France...with Supplementary Additions to each Order, by Edward Griffith...and Others*. *2nd Edition*. Whittaker & Co., London, pp. 1–680.

Gruber, S.H. & Compagno, L.J.V. (1981) Taxonomic status and biology of the bigeye thresher, *Alopias superciliosus*. *Fishery Bulletin*, 79 (4), 617–640.

Guitart, D.J. (1966) Nuevo nombre para una especie de Tiburón del género *Isurus* (Elasmobranchii, Isuridae) de aguas Cubanas. *Poeyana*, Series A, Instituto de Biologia, 15, 1–9.

Gunnerus, J.E. (1765) Brugden (*Squalus maximus*). *Det Trondhiemske Selskabs Skrifter*, 3, 33–49.

Günther, A. (1870) Catalogue of the fishes in the British Museum. Catalogue of the Physostomi, containing the families Gymnotidae, Synbranchidae, Muraenidae, Pegasidae, and of the Lophobranchii, Plectognathi, Dipnoi, Ganoidei, Chondropterygii, Cyclostomata, Leptocardii, in the British Museum. *Catalogue of Fishes*, 8, 1–549.

Günther, A. (1876) Remarks on fishes, with descriptions of new species in the British Museum, chiefly from southern seas. *Annals and Magazine of Natural History*, Series 4, 17 (101), Art. 43, 389–402.
https://doi.org/10.1080/00222937608681975

Günther, A. (1877) Preliminary notes on new fishes collected in Japan during the expedition of H. M. S. `Challenger'. *Annals and Magazine of Natural History*, Series 4, 20 (119), Art. 56, 433–446.
https://doi.org/10.1080/00222937708682260

Günther, A. (1879) Notice of two new species of fishes from the South seas. *Annals and Magazine of Natural History*, Series 5, 4 (20), 136–137.
https://doi.org/10.1080/00222937908679804

Günther, A. (1880) Report on the shore fishes procured during the voyage of H.M.S. *Challenger* in the years 1873–1876. *In:* Report on the scientific results of the voyage of H.M.S. Challenger during the years 1873–76. *Zoology*, 1 (6), 1–82, pls. 1–32.

Hasse, J.C.F. (1879) *Das natürliche System der Elasmobranchier auf Grundlage des Baues und der Entwicklung ihrer Wirbelsäule. Eine morphologische und paläontologische Studie.* Gustav Fischer Verlag, Jena, 76 pp.
https://doi.org/10.5962/bhl.title.8431

Hay, O.P. (1902) Bibliography and catalogue of the fossil vertebrata of North America. *Bulletin of the U. S. Geological Survey*, 179, 1–868.
https://doi.org/10.5962/bhl.title.20094

Heemstra, P.C. & Heemstra, E. (2004) *Coastal Fishes of Southern Africa*. National Inquiry Service Centre and South African Institute for Aquatic Biodiversity, Grahamstown, 488 pp.

Heemstra, P.C., Hissmann, K., Fricke, H., Smale, M.J. & Schauer, J. (2006) Fishes of the deep demersal habitat at Ngazidja (Grand Comoro) Island, Western Indian Ocean. *South African Journal of Science*, 102, 444–460.

Heemstra, P.C. & Smith, M.M. (1980) Hexatrygonidae, a new family of stingrays (Myliobatiformes, Batoidea) from South Africa, with comments on the classification of batoid fishes. *Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology*, 43, 1–17.

Hemprich, F.W. & Ehrenberg, C.G. (1899) *Symbolae physicae, seu icones adhuc ineditae ... ex itineribus per Libyam, AEgyptiam, Nubiam, Dongolam, Syriam, Arabiam et Habessiniam publico institutis sumptu ... studio annis MDCCCXX–MDCCCXXV redierunt. Zoologica. Symbolae physicae, seu icones adhuc ineditae*. Reimer, Berolini [Berlin], 17 pp.

Hermann, J. (1783) *Tabula affinitatum animalium olim academico specimine edita, nunc uberiore commentario illustrata com annotationibus ad historiam naturalem animalium augendam facientibus*. J. G. Treuttel, Argentorati, 370 pp. https://doi.org/10.5962/bhl.title.58872

Holt, E.W.L. & Byrne, L.W. (1909) Preliminary note on some fishes from the Irish Atlantic slope. *Annals and Magazine of Natural History*, Series 8, 3 (15), 279–280. https://doi.org/10.1080/00222930908692576

Hosegood, J., Humble, E., Ogden, R., de Bruyn, M., Creer, S., Stevens, G.M.W., Abudaya, M., Bassos-Hull, K., Bonfil, R., Fernando, D., Foote, A.D., Hipperson, H., Jabado, R.W., Kaden, J., Moazzam, M., Peel, L.R., Pollett, S., Ponzo, A., Poortvliet, M., Salah, J., Senn, H., Stewart, J.D., Wintner, S. & Carvalho, G. (2020) Phylogenomics and species delimitation for effective conservation of manta and devil rays. *Molecular Ecology*, 29 (24), 4783–4796.

Hulley, P.A. (1966) The validity of *Raja rhizacanthus* Regan and *Raja pullopunctata* Smith, based on a study of the clasper. *Annals of the South African Museum*, 48 (20), 497–514.

Hulley, P.A. (1969) The relationship between *Raja miraletus* Linnaeus and *Raja ocellifera* Regan based on a study of the clasper. *Annals of the South African Museum*, 52 (6), 137–147.

Hulley, P.A. (1970) An investigation of the Rajidae of the west and south coasts of southern Africa. *Annals of the South African Museum*, 55, 151–220.

Hulley, P.A. (1971) *Centrophorus squamosus* (Bonnaterre) (Chondrichthyes, Squalidae) in the eastern south Atlantic. *Annals of the South African Museum*, 57 (11), 265–270.

Hulley, P.A. (1972a) The origin, interrelationships and distribution of southern African Rajidae (Chondrichthyes, Batoidei). *Annals of the South African Museum*, 60, 1–103. https://doi.org/10.2307/1442499

Hulley, P.A. (1972b) A new species of southern African brevirajid skate (Chondrichthyes, Batoidei, Rajidae). *Annals of the South African Museum*, 60 (9), 253–263.

Hulley, P.A. (1973) Interrelationships within the Anacanthobatidae (Chondrichthyes, Rajoidea), with a description of the lectotype of *Anacanthobatis marmoratus* von Bonde & Swart, 1923. *Annals of the South African Museum*, 62 (4), 131–158.

Hulley, P.A. (1986) Family Rajidae, Anacanthobatidae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 115–128.

Hulley, P.A. & Penrith, M.J. (1966) *Euprotomicroides zantedeschia*, a new genus and species of pigmy dalatiid shark from South Africa. *Bulletin of Marine Science*, 16 (2), 222–229.

Hulley, P.A. & Stehmann, M. (1977) The validity of *Malacoraja* Stehmann, 1970 (Chondrichthyes; Batoidei, Rajidae) and its phylogenetic significance. *Annals of the South African Museum*, 72 (12), 227–237.

Human, B.A. (2006a) A taxonomic revision of the catshark genus *Poroderma* Smith, 1837 (Chondrichthyes: Carcharhiniformes: Scyliorhinidae). *Zootaxa*, 1229 (1), 1–32. https://doi.org/10.11646/zootaxa.1229.1.1

Human, B.A. (2006b) A taxonomic revision of the catshark genus *Holohalaelurus* Fowler 1934 (Chondrichthyes: Carcharhiniformes: Scyliorhinidae), with descriptions of two new species. *Zootaxa*, 1315 (1), 1–56. https://doi.org/10.11646/zootaxa.1315.1.1

Human, B.A. (2007) A taxonomic revision of the catshark genus *Haploblepharus* Garman 1913 (Chondrichthyes: Carcharhiniformes: Scyliorhinidae). *Zootaxa*, 1451 (1), 1–40. https://doi.org/10.11646/zootaxa.1451.1.1

Human, B.A. (2010) Range extension and a further female specimen of the grinning izak (*Holohalaelurus grennian* Human 2006; Scyliorhinidae; Chondrichthyes). *Smithiana*, 11, 25–33.

Human, B.A. & Compagno, L.J.V. (2006) Description of *Haploblepharus kistnasamyi*, a new catshark (Chondrichthyes: Scyliorhinidae) from South Africa. *Zootaxa*, 1318 (1), 41–58. https://doi.org/10.11646/zootaxa.1318.1.2

Human, B.A., Owen, B.A., Compagno, L.J.V. & Harley, E.H. (2006) Testing morphologically based phylogenetic theories within the cartilaginous fishes with molecular data, with special reference to the catshark family (Chondrichthyes; Scyliorhinidae) and the interrelationships within them. *Molecular Phylogenetics and Evolution*, 39 (2), 384–391. https://doi.org/10.1016/j.ympev.2005.09.009

Hureau, J.C. & Monod, T. (1973) *Check-list of the Fishes of the North-eastern Atlantic and of the Mediterranean*. *Vol. 1*. CLOFNAM. Unesco, Paris, 683 pp.

Hutton, F.W. (1875) Descriptions of new species of New-Zealand fish. *Annals and Magazine of Natural History*, Series 4, 16 (95), (Art. 41), 313–317. https://doi.org/10.1080/00222937508681859

Ishiyama, R. (1958) Studies on the rajid fishes (Rajidae) found in the waters around Japan. *Journal of the Shimonoseki College of Fisheries*, 7, 191–394.

IUCN (2012) *IUCN Red List Categories and Criteria: Version 3.1.* Second edition. IUCN, Gland and Cambridge, 32 pp.

IUCN (2020) The IUCN Red List of Threatened Species. Version 2020-3. Available from: https://www.iucnredlist.org (assessed 27 February 2021)

IUCN Standards and Petitions Subcommittee (2019) *Guidelines for Using the IUCN Red List Categories and Criteria. Version 14*. IUCN, Gland and Cambridge, 114 pp.

Jabado, R.W. & Ebert, D.A. (2015) *Sharks of the Arabian Seas: An Identification Guide*. The International Fund for Animal Welfare, Dubai, 240 pp.
Jabado, R.W., Kyne, P.M., Pollom, R.A., Ebert, D.A., Simpfendorfer, C.A., Ralph, G.M. & Dulvy, N.K. (2017) *The Conservation Status of Sharks, Rays, and Chimaeras in the Arabian Sea and Adjacent Waters*. Environment Agency, Abu Dhabi and IUCN Species Survival Commission Shark Specialist Group, Vancouver, 236 pp.
Jahn, A.E. & Haedrich, R.L. (1987) Notes on the pelagic squaloid shark *Isistius brasiliensis*. *Biological Oceanography*, 5, 297–309.
Jordan, D.S. (1888) *A manual of vertebrate animals of the northern United States, including the district north and east of the Ozark mountains, south of the Laurentian hills, north of ... Virginia, and east of the Missouri River; inclusive of marine species*. *5th Edition*. A.C. McClurg and company, Chicago, Illinois, 375 pp.
https://doi.org/10.5962/bhl.title.11640
Jordan, D.S. (1898) Description of a species of fish (*Mitsukurina owstoni*) from Japan, the type of a distinct family of lamnoid sharks. *Proceedings of the California Academy of Sciences*, Series 3 (Zoology), 1, 199–204.
Jordan, D.S. (1919) The genera of fishes, part III, from Guenther to Gill, 1859–1880, twenty-two years, with the accepted type of each. A contribution to the stability of scientific nomenclature. *Leland Stanford Junior University Publications, University Series*, 39, 285–410.
Jordan, D.S. & Evermann, B.W. (1896) The fishes of North and Middle America: a descriptive catalogue of the species of fish-like vertebrates found in the waters of North America, north of the Isthmus of Panama. Part I. *Bulletin of the United States National Museum*, 47, 1–1240.
https://doi.org/10.5962/bhl.title.39714
Jordan, D.S. & Evermann, B.W. (1900) The fishes of North and Middle America: a descriptive catalogue of the species of fish-like vertebrates found in the waters of North America, north of the Isthmus of Panama. Part IV. *Bulletin of the United States National Museum*, 47, 3137–3313.
https://doi.org/10.5962/bhl.title.39720
Jordan, D.S. & Fowler, H.W. (1903) A review of the elasmobranchiate fishes of Japan. *Proceedings of the United States National Museum*, 26, 593–674.
https://doi.org/10.5479/si.00963801.26-1324.593
Jordan, D.S. & Gilbert, C.H. (1879) Notes on the fishes of Beaufort Harbor, North Carolina. *Proceedings of the United States National Museum*, 1 (55), 365–388.
https://doi.org/10.5479/si.00963801.1-55.365
Jordan, D.S. & Gilbert, C.H. (1883) Synopsis of the fishes of North America. *Bulletin of the United States National Museum*, 16, 1–1018.
https://doi.org/10.5479/si.03629236.16.i
Jordan, D.S. & Seale, A. (1906) The fishes of Samoa. Description of the species found in the archipelago, with a provisional check-list of the fishes of Oceania. *Bulletin of the Bureau of Fisheries*, 25, 173–455. [for 1905]
https://doi.org/10.5962/bhl.title.46247
Jordan, D.S. & Snyder, J.O. (1902) Descriptions of two new species of squaloid sharks from Japan. *Proceedings of the United States National Museum*, 25, 79–81.
https://doi.org/10.5479/si.00963801.25-1279.79
Jourdan, C. (1861) *Comptes rendus hebdomadaires des seances de l'Academie des Sciences*, 53, 959–962.
Karrer, C. (1973) Über Fische aus dem Südostatlantik. *Mitteilungen aus dem Zoologischen Museum in Berlin*, 49 (1), 191–257.
https://doi.org/10.1002/mmnz.4830490113
Kaup, J.J. (1826) Beyträge zu Amphibiologie und Ichthiyologie. *Isis, Oken*, 19 (1), 87–89.
Kemper, J.M., Ebert, D.A., Compagno, L.J.V. & Didier, D.A. (2010) *Chimaera notafricana* sp. nov. (Chondrichthyes: Chimaeriformes: Chimaeridae), a new species of chimaera from southern Africa. *Zootaxa*, 2532 (1), 55–63.
https://doi.org/10.11646/zootaxa.2532.1.2
Klausewitz, W. (1960) Die Typen und Typoide des Naturmuseums Senckenberg, 23, Pisces, Chondrichthyes, Elasmobranchii. *Senckenbergiana Biologica*, 41 (5/6), 289–296.
Klunzinger, C.B. (1871) Synopsis der Fische des Rothen Meeres. II. Theil. *Verhandlungen der K.-K. zoologisch-botanischen Gesellschaft in Wien*, 21, 441–688.
https://doi.org/10.5962/bhl.title.14760
Klunzinger, C.B. (1880) Die von Müller'sche Sammlung australischer Fische in Stuttgart. Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. *Mathematisch-Naturwissenschaftliche Classe*, 80 (1. Abth.), (Nos 3–4), 325–430.
Krefft, G. (1968) Neue und erstmalig nachgewiesene Knorpelfische aus dem Archibenthal des Südwestatlantiks, einschließlich einer Diskussion einiger *Etmopterus*-Arten südlicher Meere. *Archiv für Fischereiwissenschaft*, 19 (1), 1–42.
Krefft, J.L.G. (1868) *Deratoptera alfredi* (Prince Alfred's ray). *Illustrated Sydney News*, 5 (11 July 1868), 3, 9.
Lacepède, B.G.E. (1798) *Histoire naturelle des poissons*. *Vol. 1.* Plassan, Paris, 532 pp.
https://doi.org/10.5962/bhl.title.125512
Lacepède, B.G.E. (1803) Histoire naturelle des poissons. 5, 1–803.

Lampe, M. 1914. Die fische der Deutschen Südpolar-Expedition 1901–1903. 3. Die hochsee- und küstenfische. *Deutsch Südpolar-Expedition*, 15 (2), 203–256.
https://doi.org/10.1071/9780643109148

Last, P.R. & Stevens, J.D. (2009) *Sharks and Rays of Australia*. CSIRO Publishing, Collingwood, 644 pp.

Last, P.R., White, W.T., Caira, J.N., Dharmadi, Fahmi, Jensen, K., Lim, A.P.K., Manjaji-Matsumoto, M., Naylor, G.J.P., Pogonoski, J.J., Stevens, J.D. & Yearsley, G.K. (2010) *Sharks and Rays of Borneo*. CSIRO Publishing, Collingwood, 298 pp.

Last, P.R., Bogorodsky, S.V. & Alpermann, T.J. (2016j) *Maculabatis ambigua* sp. nov., a new whipray (Myliobatiformes: Dasyatidae) from the western Indian Ocean. *Zootaxa*, 4154 (1), 66–78.

Last, P.R., Manjaji-Matsumoto, B.M., Naylor, G.J.P. & White, W.T. (2016i) Stingrays. Family Dasyatidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 522–618.
https://doi.org/10.1071/9780643109148

Last, P.R., Naylor, G.J.P. & Manjaji-Matsumoto, B.M. (2016h) A revised classification of the family Dasyatidae (Chondrichthyes: Myliobatiformes) based on new morphological and molecular insights. *Zootaxa*, 4139 (3), 345–368.
https://doi.org/10.11646/zootaxa.4139.3.2

Last, P.R., Séret, B. & Naylor, G.J.P. (2016b) A new species of guitarfish, *Rhinobatos borneensis* sp. nov. with a redefinition of the family-level classification in the order Rhinopristiformes (Chondrichthyes: Batoidea). *Zootaxa*, 4117 (4), 451–475.
https://doi.org/10.11646/zootaxa.4117.4.1

Last, P.R., Séret, B., Stehmann, M.F.W. & Weigmann, S. (2016g) Skates. Family Rajidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 204–363.
https://doi.org/10.1071/9780643109148

Last, P.R., Stehmann, M.F.W., Séret, B. & Weigmann, S. (2016e) Softnose skates. Family Arhynchobatidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 364–472.
https://doi.org/10.1071/9780643109148

Last, P.R., Weigmann, S. & Yang, L. (2016f) Changes to the nomenclature of the skates (Chondrichthyes: Rajiformes). *In:* Last, P.R. & Yearsley, G.K. (Eds.), *Rays of the World: Supplementary Information*. CSIRO Australian National Fish Collection, Hobart, pp. 11–34.

Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (2016a) *Rays of the World*. Cornell University Press, Ithaca, New York 790 pp.
https://doi.org/10.1071/9780643109148

Last, P.R., White, W.T. & Jones, C.M. (2016l) Cownose rays. Family Rhinopteridae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Seret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 732–740.
https://doi.org/10.1071/9780643109148

Last, P.R., White, W.T. & Naylor, G.J.P. (2016c) Sawfishes. Family Pristidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 58–64.
https://doi.org/10.1071/9780643109148

Last, P.R., White, W.T. & Séret, B. (2016d) Wedgefishes. Family Rhinidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 65–76.
https://doi.org/10.1071/9780643109148

Last, P.R., White, W.T. & Serét, B. (2016k) Taxonomic status of maskrays of the *Neotrygon kuhlii* species complex (Myliobatoidei: Dasyatidae) with the description of three new species from the Indo-West Pacific. *Zootaxa*, 4083 (4), 533–561.
https://doi.org/10.11646/zootaxa.4083.4.5

Lay, G.T. & Bennett, E.T. (1839) Fishes. *In*: Beechey, F.W. (Ed.), *The Zoology of Captain Beechey's Voyage; Collections and Notes made by Captain Beechey, the Officers and Naturalist of the Expedition, during a Voyage to the Pacific and Behring's Straits Performed in His Majesty's Ship Blossom, under the Command of Captain F.W. Beechey, R.N., F.R.S, &c. &c. in the years 1825, 26, 27, and 28*. Henry G. Bohn, London, pp. 41–75.

Lesson, R.P. (1831) Poissons. *In*: *Duperrey, L.I., Voyage autour du monde...sur la corvette de La Majesté La Coquille, pendant les années 1822, 1823, 1824 et 1825*, Zoologie, 2 (Pt. 1), 66–238.

Lesueur, C.A. (1818) Description of several new species of North American fishes. *Journal of the Academy of Natural Sciences, Philadelphia*, 1, 222–235 + 359–368.

Lesueur, C.A. (1822) Description of a *Squalus*, of a very large size, which was taken on the coast of New-Jersey. *Journal of the Academy of Natural Sciences, Philadelphia*, 2, 343–352.

Lichtenstein, M.H.C. (1844) *Descriptiones animalium quae in itinere ad Maris Australis terras per annos 1772 1773 et 1774 suscepto, collegit observavit et delineavit Ioannes Reinoldus Forster ... nunc demum editae ... Henrico Lichtenstein*. Ex Officina Academica, Berlin, 424 pp.

Linck, H.F. (1790) Versuch einter Einthei l ung der Fische nach den Ziihnen. *Magazinfiir das Neueste Physik und Naturggeschichte, Gotha*, 6, 28–38.

Linnaeus, C. (1758) *Systema Naturae, Ed. X. (Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata*. Impensis Direct. Laurentii Salvii, Holmiae, 824 pp.
https://doi.org/10.5962/bhl.title.542

Lloyd, R.E. (1908) On two new species of eagle-rays (Myliobatidae), with notes on the skull of the genus *Ceratoptera*. *Records of the Indian Museum, Calcutta*, 2 (2), 175–180.

Lowe, R.T. (1839) A supplement to a synopsis of the fishes of Madeira. *Proceedings of the Zoological Society of London*, 1839 (Pt. 7), 76–92.

Lowe, R.T. (1841) Certain new species of Madeiran fishes. *Proceedings of the Zoological Society of London*, 1840 (8, o. 89), 36–39.

Lütken, C.F. (1887) Korte Bidrag til nordisk Ichthyographi. VI. En for Grønlandshavet ny Rokke-art (*Raja Fyllae* n. sp. ad int.) m. m. *Videnskabelige Meddelelser fra den Naturhistoriske Forening i Kjøbenhavn*, Aaret 1887, 1–4.

Maduna, S.N., da Silva, C., Wintner, S.P., Roodt-Wilding, R. & Bester-van der Merwe, A.E. (2016) When two oceans meet: regional population genetics of an exploited coastal shark, *Mustelus mustelus*. *Marine Ecology Progress Series*, 544, 183–196.
https://doi:10.3354/meps11596

Mace, G.M., Collar, N.J., Gaston, K.J., Hilton-Taylor, C., Akçakaya, H.R., Leader-Williams, N., Milner-Gulland, E.J. & Stuart, S.N. (2008) Quantification of extinction risk: IUCN's system for classifying threatened species. *Conservation Biology*, 22, 1424–1442.
https://doi.org/10.1111/j.1523-1739.2008.01044.x

Macleay, W. (1883) Contribution to a knowledge of the fishes of New Guinea. No. III. *Proceedings of the Linnean Society of New South Wales*, 7 (4), 585–598.
https://doi.org/10.5962/bhl.part.22766

Malm, A.W. (1877) *Göteborgs och Bohusläns fauna*. Ryggradsdjuren, Göteborg Handelstidning Akteriolags Tryckeri Göteborg, 674 pp.

Manjaji-Matsumoto, B.M. & Last, P.R. (2008) *Himantura leoparda* sp. nov., a new whipray (Myliobatoidei, Dasyatidae) from the Indo-Pacific. *In*: Last, P.R., White, W.T. & Pogonoski, J.J. (Eds.), *Descriptions of New Australian Chondrichthyans*. *CSIRO Marine and Atmospheric Research Paper*, 022, pp. 292–301.

Mann, B.Q. (2013) Southern African marine linefish species profiles. *Oceanographic Research Institute, Special Publication*, 9, 1–343.

Marshall, A.D., Compagno, L.J.V. & Bennett, M.B. (2009) Redescription of the genus *Manta* with resurrection of *Manta alfredi* (Krefft, 1868) (Chondrichthyes; Myliobatoidei; Mobulidae). *Zootaxa*, 2301 (1), 1–28.
https://doi.org/10.11646/zootaxa.2301.1.1

Matsubara, K. (1936) A new carcharoid shark found in Japan. *Dobutsugaku Zasshi = Zoological Magazine Tokyo*, 48, 380–382.

McCulloch, A.R. (1915) Report on some fishes obtained by the F. I. S. "Endeavour" on the coasts of Queensland, New South Wales, Victoria, Tasmania, South and South-Western Australia, Part III. *Biological Results Endeavour*, 3, 97–170.

McEachran, J.D. & Compagno, L.J.V. (1982) Interrelationships of and within *Breviraja* based on anatomical structures (Pisces: Rajoidei). *Bulletin of Marine Science*, 32 (2), 399–425.

Meisner, E.E. (1987) Une nouvelle espèce de la raie (Rajidae, Batoidei) du secteur indien de Antarctique. A new species of ray (Rajidae, Batoidei) from the Indian Ocean sector of the Antarctic. *Zoologicheskii Zhurnal*, 66 (12), 1840–1849.

Merrett, N.R. (1973) A new shark of the genus *Squalus* (Squalidae: Squaloidea) from the equatorial western Indian Ocean; with notes on *Squalus blainvillei*. *Journal of Zoology*, *London*, 171 (1), 93–110.
https://doi.org/10.1111/j.1469-7998.1973.tb07518.x

Mitsukuri, K. (1895) On a new genus of the chimaeroid group *Hariotta*. *Dobutsugaku Zasshi [Zoological Magazine Tokyo]*, 7 (80), 97–98.

Miyosi, Y. (1939) Description of three new species of elasmobranchiate fishes collected at Hyuga Nada, Japan. *Bulletin of the Biogeographical Society of Japan*, 9, 91–97.

Müller, J. & Henle, F.G.J. (1837a) Gattungen der Haifische und Rochen nach einer von ihm mit Hrn. Henle unternommenen gemeinschaftlichen Arbeit über die Naturgeschichte der Knorpelfische. *Bericht Akademie der Wissenschaften zu Berlin*, 1837, 111–118.

Müller, J. & Henle, F.G.J. (1837b) Ueber die Gattungen der Plagiostomen. *Archiv für Naturgeschichte*, 3, 394–401 + 434.
https://doi.org/10.5962/bhl.part.10051

Müller, J. & Henle, F.G.J. (1838a) On the generic characters of cartilaginous fishes, with descriptions of new genera. *Magazine of Natural History*, 2, 33–37, 88–91.

Müller, J. & Henle, F.G.J. (1838b) Poissons cartilagineux. *L'Institut*, 6, 63–65.

Müller, J. & Henle, F.G.J. (1838c) s.n. *In*: *Systematische Beschreibung der Plagiostomen*. Plagiostomen, Berlin, pp. 1–28.

Müller, J. & Henle, F.G.J. (1839) s.n. *In*: *Systematische Beschreibung der Plagiostomen*. Plagiostomen, Berlin, pp. 29–102.

Müller, J. & Henle, F.G.J. (1841) s.n. *In*: *Systematische Beschreibung der Plagiostomen*. Plagiostomen, Berlin, pp. 103–200.

Muñoz-Chápuli, R. & Ramos, F. (1989a) Morphological comparison of *Squalus blainvillei* and *S. megalops* in the eastern Atlantic, with notes on the genus. *Japanese Journal of Ichthyology*, 36 (1), 6–21.
https://doi.org/10.1007/BF02905668

Muñoz-Chápuli, R. & Ramos, F. (1989b) Review of the *Centrophorus* sharks (Elasmobranchii, Squalidae) of the eastern Atlantic. *Cybium*, 13 (1), 65–81.
Myagkov, N.A. & Kondyurin, V.V. (1986) Dogfishes *Squalus* (Squalidae), of the Atlantic Ocean and comparative notes on the species of this genus from other regions. *Voprosy Ikhtiologii*, 26 (4), 560–575.
Nakabo, T. (2013) *Fishes of Japan with Pictorial Keys to the Species. Vol. 1*. Tokai University Press, Kanagawa, 1749 pp.
Nakamura, H. (1935) On the two species of the thresher shark from Formosan waters. *Memoirs Faculty Science Taihoku Imperial University Formosa*, 14, 1–6.
Nardo, G.D. (1827) Prodromus observationum et disquisitionum Adriaticae ichthyologiae. *Giornale di fisica, chimica e storia naturale, medicina, ed arti.*, Series 2, Dec. II, 10, 22–40.
Naylor, G.J.P., Caira, J.N., Jensen, K., Rosana, K.A.M., White, W.T. & Last, P.R. (2012a) A DNA sequence-based approach to the identification of shark and ray species and its implications for global elasmobranch diversity and parasitology. *Bulletin of the American Natural History Museum*, 367, 1–263.
https://doi.org/10.1206/754.1
Naylor, G.J.P., Caira, J.N., Jensen, K., Rosana, K.A.M., Straube, N. & Lakner, C. (2012b) Elasmobranch phylogeny: a mitochondrial estimate based on 595 species. *In*: Carrier, J.C., Musick, J.A. & Heithaus, M.R. (Eds.), *Biology of Sharks and Their Relatives*, *Second Edition*. CRC Press, Boca Raton, Florida, pp. 31–56.
https://doi.org/10.1201/b11867-4
Nishida, K. (1990) Phylogeny of the suborder Myliobatidoidei. *Memoirs of the Faculty of Fisheries, Hokkaido University*, 37 (1.2), 1–108.
Norman, J.R. (1922) Three new fishes from Zululand and Natal, collected by Mr H.W. Bell Marley; with additions to the fish fauna of Natal. *Annals and Magazine of Natural History*, 9 (52), 318–322.
https://doi.org/10.1080/00222932208632681
Norman, J.R. (1926) A synopsis of the rays of the family Rhinobatidae, with a revision of the genus *Rhinobatus*. *Proceedings of the Zoological Society of London*, 1926 (4), 941–982.
https://doi.org/10.1111/j.1096-3642.1926.tb02228.x
Norman, J.R. (1935) Coast fishes, Part. I. *The South Atlantic. 'Discovery' Reports*, 12, 1–58.
Norman, J.R. (1939) Fishes. The John Murray Expedition 1933–34. *Scientific Reports, John Murray Expedition*, 7 (1), 1–116.
Notarbartolo di Sciara, G. (1987) A revisionary study of the genus *Mobula* Rafinesque, 1810 (Chondrichthyes: Mobulidae) with the description of a new species. *Zoological Journal of the Linnean Society*, 91 (1), 1–91.
https://doi.org/10.1111/j.1096-3642.1987.tb01723.x
Notarbartolo di Sciara, G., Adnet, S., Bennett, M., Broadhurst, M.K., Fernando, D., Jabado, R.W., Laglbauer, B.J.L. & Stevens, G. (2020) Taxonomic status, biological notes, and conservation of the longhorned pygmy devil ray *Mobula eregoodoo* (Cantor, 1849). *Aquatic Conservation: Marine and Freshwater Ecosystems*, 30 (1), 104–122.
https://doi.org/10.1002/aqc.3230
NPOA. (2013) *National Plan of Action for the Conservation and Management of Sharks (NPOA-Sharks)*. Department of Agriculture, Forestry and Fisheries (DAFF), Rogge Bay, Cape Town, 63 pp.
Ogilby, J.D. (1915) Ichthyological notes (no. 2). *Memoirs of the Queensland Museum*, 3, 130–136.
Olfers, J.F.M. von (1831) *Die Gattung Torpedo in ihren naturhistorischen und antiquarischen Beziehungen erläutert*. Gedruckt in der Druckerei der Königlichen Akademie der Wissenschaften, Berlin, 35 pp., 3 pls.
Penrith, M.J. (1969) New records of deep-water fishes from South West Africa. *Cimbebasia*, Series A, 1 (3), 59–75.
Péron, F. (1807) *Voyage de Découvertes aux Terres Australes, exécuté par ordre de sa majesté l'Empereur et Roi, sur les Corvettes la Géographe, la Naturaliste et la Goulette le Casuarina, pendant les années 1800, 1801, 1803 et 1804*. De l'Imprimerie impériale, Paris, 496 pp.
https://doi.org/10.5962/bhl.title.44096
Peters, W. (C.H.) (1855) Übersicht der in Mossambique beobachteten Seefische. *Bericht über die zur Bekanntmachung geeigneten Verhandlungen der Königlichen Preussischen Akademie der Wissenschaften zu Berlin*, 1855, 428–466.
Philippi, R.A. (1892) Algunos peces de Chile. Las rayas, *Callorrhynchus* i *Orthagoriscus* Chilenos. *Anales del Museo Nacional de Chile*, Primera Seccion, Zoología, 3, 1 + 1–16 + 1.
Pickering, M. & Caira, J.N. (2012) A new hyperapolytic species, *Trilocularia eberti* sp n. (Cestoda: Tetraphyllidae), from *Squalus* cf. *mitsukurii* (Squaliformes: Squalidae) off South Africa with comments on its development and fecundity. *Folia Parasitologica*, 59, 107–114.
https://doi.org/10.14411/fp.2012.016
Piotrovskiy, A.S. & Prut'ko, V.G. (1980) The occurrence of the goblin shark, *Scapanorhynchus owstoni* (Chondrichthyes, Scapanorhynchidae) in the Indian Ocean. *Journal of Ichthyology*, 20 (1), 124–125.
Poey, F. (1858–61) s.n. *In*: *Memorias sobra la historia natural de la Isla de Cuba, acompañadas de sumarios Latinos y extractos en Francés. Tomo 2*. Impr. de Barcina, La Habana, pp. 1–96 (1858) + 97–336 (1860) + 337–442, (1861).
Poey, F. (1875) Enumeratio piscium cubensium (Parte Primera). *Anales de la Sociedad Española de Historia Natural, Madrid*, 4, 75–161.
https://doi.org/10.5962/bhl.title.12630
Poll, M. (1951) *Poissons*. I. Generalités. II. Sélaciens et Chimères. Résultats Scientifiques. *Expédition Océanographique Belge dans les Eaux Côtières Africaines de l'Atlantique Sud (1948–1949), Bruxelles*, 4 (1), 1–154.

Pollom, R., Gledhill, K., Fernando, S. & Leslie, R. (2020) *Holohalaelurus favus*. *The IUCN Red List of Threatened Species*, 2020, e.T161652A124522141.
https://doi.org/10.2305/IUCN.UK.2020-2.RLTS.T161652A124522141.en

Psomadakis, P.N., Htun, T., Russell, B.C. & Tun, M.T. (2019) *Field Identification Guide to the Living Marine Resources of Myanmar. FAO Species Identification Guide for Fishery Purposes*. FAO, Rome, 694 pp.

Quoy, J.R.C. & Gaimard, J.P. (1824) Description des Poissons. Chapter IX. *In*: *de Freycinet, L., Voyage autour du Monde... exécuté sur les corvettes de L. M. "L'Uranie" et "La Physicienne," pendant les années 1817, 1818, 1819 et 1820. Paris. Description des Poissons. Chapter IX*, 1824, pp. 1–328.

Rafinesque, C.S. (1810a) s.n. *In*: *Caratteri di alcuni nuovi generi e nuove specie di animali e piante della Sicilia, con varie osservazioni sopra i medisimi. Part 1 (involves fishes)*. Sanfilippo, Palermo, pp. 3–69.
https://doi.org/10.5962/bhl.title.104418

Rafinesque, C.S. (1810b) *Indice d'ittiologia siciliana; ossia, catalogo metodico dei nomi latini, italiani, e siciliani dei pesci, che si rinvengono in Sicilia disposti secondo un metodo naturale e seguito da un appendice che contiene la descrizione de alcuni nuovi pesci siciliani*. Presso Giovanni del Nobolo, con approvazzione, Messina, 70 pp.
https://doi.org/10.5962/bhl.title.6893

Rafinesque, C.S. (1815) *Analyse de la nature, ou tableau de l'univers et des corps organisés*. Aux deìpens de l'auteur, Palerme, 224 pp.
https://doi.org/10.5962/bhl.title.106607

Regan, C.T. (1904) Descriptions of three new marine fishes from South Africa. *Annals and Magazine of Natural History*, Series 7, 14 (80), 128–130.
https://doi.org/10.1080/03745480409442978

Regan, C.T. (1906a) Descriptions of new or little-known fishes from the coast of Natal. *Annals of the Natal Government Museum*, 1 (1), 1–6.

Regan, C.T. (1906b) Descriptions of some new sharks in the British Museum Collection. *Annals and Magazine of Natural History*, Series 7, 18 (108), 435–440.
https://doi.org/10.1080/00222930608562643

Regan, C.T. (1908a) A collection of fishes from the coasts of Natal, Zululand and Cape Colony. *Annals of the Natal Government Museum*, 1 (3), 241–255.

Regan, C.T. (1908b) A synopsis of the sharks of the Family Scyliorhinidae. *Annals and Magazine of Natural History*, Series 8, 1, 453–465.
https://doi.org/10.1080/00222930808692434

Regan, C.T. (1921) New fishes from deepwater off the coast of Natal. *Annals and Magazine of Natural History*, Series 9, 7 (41), 412–420.
https://doi.org/10.1080/00222932108632540

Reinhardt, J.C.H. (1825) Ichthyologiske bidrag. *In:* H.C. Örsted. *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger og dets Medlemmers Arbeider (Kjøbenhavn)*, 1824–25, pp. 1–35.

Richardson, A.J., Maharaj, G., Compagno, L.J.V., Leslie, R.W., Ebert, D.A. & Gibbons, M.J. (2000) The abundance, distribution, morphometrics, reproduction, and diet of the Izak catshark, *Holohalaelurus regani*. *Journal of Fish Biology*, 56 (3), 552–576.
https://doi.org/10.1111/j.1095-8649.2000.tb00755.x

Risso, A. (1810) *Ichthyologie de Nice, ou histoire naturelle des poissons du département des Alpes Maritimes*. F. Schoell, Paris, 388 pp.
https://doi.org/10.5962/bhl.title.7052

Risso, A. (1827) Histoire naturelle des principales productions de l'Europe méridionale, et particulièrement de celles des environs de Nice et des Alpes maritimes. F.G. Levrault, Paris & Strasbourg. *Histoire naturelle de l'Europe meridionale*, 3, 1–480.
https://doi.org/10.5962/bhl.title.58984

Roberts, C.D., Stewart, A.L., Struthers, C.D., Barker, J.J. & Kortet, S. (2019) *Checklist of the Fishes of New Zealand. Online Version 1.1*. Museum of New Zealand Te Papa Tongarewa, Wellington, 219 pp.

Robinson, R. & Dunn, J.S. (1923) *Salt Water Angling in South Africa*. Robinson & Co., Durban, 315 pp.

Rosenblatt, R.H. & Baldwin, W.J. (1958) A review of the eastern Pacific sharks of the genus *Carcharhinus*, with a redescription of *C. malpeloensis* (Fowler) and California records of *C. remotus* (Duméril). *California Fish & Game*, 44 (2), 137–159.

Rüppell, W.P.E.S. (1829) Atlas zu der Reise im nördlichen Afrika. *Fische des Rothen Meers, Frankfurt am Main (Heinrich Ludwig Brönner)*, Part 2, 27–94.

Rüppell, W.P.E.S. (1837) Neue Wirbelthiere zu der Fauna von Abyssinien gehörig. *Fische des Rothen Meeres. Frankfurt-am-Main*, 1837, 53–80.

Sabaj, M.H. (2019) Standard symbolic codes for institutional resource collections in herpetology and ichthyology: An Online Reference. Version. 7.1. 21 March 2019. American Society of Ichthyologists and Herpetologists, Washington, D.C. Available from: https://www.asih.org/ (accessed 15 June 2020)

Saldaña-Ruiz, L.E., García-Rodríguez, E., Pérez-Jiménez, J.C., Tovar-Ávila, J. & Rivera-Téllez, E. (2020) Biodiversity and conservation of sharks in Pacific Mexico. *Advances in Marine Biology*, 83, 11–60.
https://doi.org/10.1016/bs.amb.2019.08.001

Sasahara, R., Sato, K. & Nakaya, K. (2008) A new species of deep-water catshark, *Apristurus ampliceps* sp. nov. (Chondrichthyes: Carcharhiniformes: Scyliorhinidae), from New Zealand and Australia. *In:* Last, P.R., White, W.T. & Pogonoski, J.J. (Eds.), Descriptions of New Australian Chondrichthyans. *CSIRO Marine and Atmospheric Research Paper*, 022, pp. 93–104

Schinz, H.R. (1822) *Das Thierreich eingetheilt nach dem Bau der Thiere als Grundlage ihrer Naturgeschichte und der vergleichenden Anatomie*. *Vol. 2.* Mit vielen Zusätzenversehen von H. R. Schinz. Cotta, Stuttgart and Tübingen, 835 pp.

Serena, F. (2005) *Field Identification Guide to the Sharks and Rays of the Mediterranean and Black Sea. FAO Species Identification Guide for Fishery Purposes.* FAO, Rome, 97 pp.

Séret, B. (1989) Deep water skates of Madagascar. Part 3. Rajidae (Pisces, Chondrichthyes, Batoidea). *Raja (Dipturus) crosnieri* sp. n. *Cybium*, 13 (2), 115–130.

Séret, B. (2016) Batoid fishes. Multiple families. *In*: Carpenter, K.E. & De Angelis, N. (Eds.), *The Living Marine Resources of the Eastern Central Atlantic. Vol. 2. Bivalves, Gastropods, Hagfishes, Sharks, Batoid Fishes, and Chimaeras. FAO Species Identification Guide for Fishery Purposes*. FAO, Rome, pp. 1337–1369, 1404–1433.

Séret, B. & Last, P.R. (2016) Giant stingray. Family Plesiobatidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 674–675. https://doi.org/10.1071/9780643109148

Séret, B., Last, P.R. & Naylor, G.J.P. (2016a) Guitarfishes. Family Rhinobatidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 77–109.
https://doi.org/10.1071/9780643109148

Séret, B., Last, P.R. & Naylor, G.J.P. (2016b) Giant guitarfishes. Family Glaucostegidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 110–116.
https://doi.org/10.1071/9780643109148

Séret, B., Last, P.R., Weigmann, S. & Stehmann, M.F.W. (2016c) Legskates. Family Anacanthobatidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 494–508.
https://doi.org/10.1071/9780643109148

Séret, B. & de Carvalho, M.R. (2016) Sixgill stingrays. Family Hexatrygonidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 509–510.
https://doi.org/10.1071/9780643109148

Shaw, G. & Nodder, F.P. (1789–1813) *The Naturalist's Miscellany, or Coloured Figures of Natural Objects; Drawn and Described from Nature*. *24 Vols*. J. Cooper, London. [unnumbered pages]
https://doi.org/10.5962/bhl.title.61214

Shcherbachev, Y.N. (1978) Long-nosed chimaeras (Rhinochimaeridae, Chimaeriformes) from the waters of South Africa. *Trudy Institute Okeanology P.P. Shirshova*, 111, 7–9.

Shcherbachev, Y.N., Dolganov, V.N. & Timokhin, I.G. (1982) Deep-sea chondrichthyan fishes (Chondrichthyes) from the waters of the Southern Hemisphere. *In: Unsufficiently Studied Fishes of the Open Ocean*. P.P. Shirshov Institute of Oceanology, Moscow, pp. 6–31.

Shirai, S. & Tachikawa, H. (1993) Taxonomic resolution of the *Etmopterus pusillus* species group (Elasmobranchii, Etmopteridae), with description of *E. bigelowi*, n. sp. *Copeia*, 1993 (2), 483–495.
https://doi.org/10.2307/1447149

Smale, M.J., Compagno, L.J.V. & Human, B.A. (2002) First megamouth shark from the western Indian Ocean and South Africa. *South African Journal of Science*, 98 (7/8), 349–350.

Smith, A. (1828) Descriptions of new, or imperfectly known objects of the animal kingdom, found in the south of Africa. *South African Commercial Advertiser*, 145, 2.

Smith, A. (1829) Contributions to the natural history of South Africa, &c. *Zoological Journal, London*, 16, 433–444.

Smith, A. (1837) (On the necessity for a revision of the groups included in the Linnean genus *Squalus*). *Annals of Natural History*, 1 (1), 72–74.

Smith, A. (1838) (On the necessity for a revision of the groups included in the Linnean genus *Squalus*). *Proceedings of the Zoological Society of London*, 5 (57), 85–86.

Smith, A. (1839) Pisces. *In*: Illustrations of the zoology of South Africa; consisting chiefly of figures and descriptions of the objects of natural history collected during an expedition into the interior of South Africa in 1834–36, 4, pp. 1–77 (unnumbered), accompanying, pls. 1–31.
https://doi.org/10.5962/bhl.title.10567

Smith, A. (1849) Pisces. *In: Illustrations of the Zoology of South Africa. Vol. 4*. Smith, Elder, and Co., London, 77 pp.

Smith, H.M. (1912) The squaloid sharks of the Philippine Archipelago, with descriptions of new genera and species. *Proceedings of the United States National Museum*, 41 (1877), 677–685.
https://doi.org/10.5479/si.00963801.41-1877.677

Smith, H.M. (1913) Description of a new carcharioid shark from the Sulu Archipelago. Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907–1910. No. 29. *Proceedings of the United States National Museum*, 45 (2003), 599–601.
https://doi.org/10.5479/si.00963801.45-2003.599

Smith, J.L.B. (1934) The growth changes of *Pteroplatea natalensis*, G and T. *Transactions of the Royal Society of South Africa*, 22 (1), 83–87.
https://doi.org/10.1080/00359193409519331
Smith, J.L.B. (1935) New and little known fishes from South Africa. *Records of the Albany Museum*, 4 (2), 169–235.
Smith, J.L.B. (1936) Two interesting new fishes from South Africa. *Transactions of the Royal Society of South Africa*, 14 (1), 1–6.
https://doi.org/10.1080/00359193609518910
Smith, J.L.B. (1943) Interesting new fishes of three genera new to South Africa, with a note on *Mobula diabolus* (Shaw). *Transactions of the Royal Society of South Africa*, 30 (1), 67–77.
https://doi.org/10.1080/00359194309519831
Smith, J.L.B. (1949a) *The Sea Fishes of Southern Africa*. South Africa Central News Agency Ltd., 550 pp.
Smith, J.L.B. (1949b) Forty-two fishes new to South Africa, with notes on others. *Annals and Magazine of Natural History*, Series 12, 2 (14), 97–111.
https://doi.org/10.1080/00222934908653970
Smith, J.L.B. (1949c) Interesting fishes of three genera new to South Africa. *Annals and Magazine of Natural History*, Series 12, 2 (17), 367–374.
https://doi.org/10.1080/00222934908526727
Smith, J.L.B. (1950) A new dogfish from South Africa, with notes on other chondrichthyan fishes. *Annals and Magazine of Natural History*, Series 12, 3, 878–887.
https://doi.org/10.1080/00222935008654719
Smith, J.L.B. (1951) A new galeorhinid shark from South Africa, with notes on other species. *Annuals and Magazine of Natural History*, Series 12, 4 (37), 86–93.
https://doi.org/10.1080/00222935108654128
Smith, J.L.B. (1952a) A new hound shark from South Africa, and new records. *Annals and Magazine of Natural History*, Series 12, 5, 223–226.
https://doi.org/10.1080/00222935208654285
Smith, J.L.B. (1952b) *Carcharhinus zambezensis* Peters, 1852, notes on other chondrichthyan fishes. *Annals and Magazine of Natural History*, Series 12, 5, 857–863.
https://doi.org/10.1080/00222935208654359
Smith, J.L.B. (1952c) Two chondrichthyan fishes new to South Africa. *Annals and Magazine of Natural History*, Series 12, 5, 760–765.
https://doi.org/10.1080/00222935208654346
Smith, J.L.B. (1952d) Tropical fishes recently found in South Africa. *Annals and Magazine of Natural History*, Series 12, 5, 1020–1023.
https://doi.org/10.1080/00222935208654381
Smith, J.L.B. (1952e) We need information about sharks: anglers can help science. *South African Angler*, 6 (11), 6–7, 22.
Smith, J.L.B. (1952f) The Zambesi shark. *South African Angler*, 7 (5), 13, 26.
Smith, J.L.B. (1952g) An interesting stingray. *South African Angler*, 7 (2), 15.
Smith, J.L.B. (1953) *The Sea Fishes of Southern Africa. 3rd Edition*. South Africa Central News Agency Ltd., 564 pp.
Smith, J.L.B. (1955) New species and new records of fishes from Moçambique. Part I. *Memorias do Museu Dr. Alvaro de Castro*, 3, 3–27.
Smith, J.L.B. (1957a) A new shark from South Africa. *South African Journal of Science*, 53, 261–264.
Smith, J.L.B. (1957b) A new shark from Zanzibar, with notes on *Galeorhinus* Blainville. *Annals and Magazine of Natural History*, Series 12, 10 (116), 585–592.
https://doi.org/10.1080/00222935708656002
Smith, J.L.B. (1957c) A preliminary survey of the scylliogaleid dogfishes of South Africa. *South African Journal of Science*, 53, 353–359.
Smith, J.L.B. (1957d) Sharks of the genus *Isurus* Rafinesque, 1810. *Rhodes University Ichthyological Bulletin*, 6, 91–96.
Smith, J.L.B. (1957e) Dasyatid rays new to South Africa. *Annals and Magazine of Natural History*, Series 12, 10 (116), 429–431.
https://doi.org/10.1080/00222935708655980
Smith, J.L.B. (1958a) The mystery killer - the new shark *Carcharhinus vanrooyeni*. *Veld & Vlei*, 3 (9), 12–14, 28.
Smith, J.L.B. (1958b) Sharks of the genus *Pterolamiops* Springer, 1951, with notes on isurid sharks. *Rhodes University Ichthyological Bulletin*, 10, 131–134.
Smith, J.L.B. (1958c) White-tip sharks. *Veld & Vlei*, 3 (7), 16–18.
Smith, J.L.B. (1959) A shark, new to African seas. *Field & Tide*, 2 (1), 16.
Smith, J.L.B. (1961a) *The Sea Fishes of Southern Africa. 4th Edition*. Central News Agency Ltd., Cape Town, 580 pp.
Smith, J.L.B. (1961b) Are we on the right road with sharks? *Field & Tide*, 3 (6), 18–20, 29.
Smith, J.L.B. (1962a) Bronze whaler shark of Australia comes to South Africa. *Field & Tide*, 4 (1), 28.
Smith, J.L.B. (1962b) The shark. *Probe, Cape*, 23–28.
Smith, J.L.B. (1963) Shark attacks in the South African seas. *In:* Gilbert, P.W. (Ed.), *Sharks and Survival*. D.C. Heath, Boston, pp. 363–368.

Smith, J.L.B. (1964) Fishes collected by Dr T. Mortenson off the coast of South Africa in 1929, with an account of the genus *Cruriraja* Bigelow & Schroeder, 1954 in South Africa. *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening*, 126, 283–300.
Smith, J.L.B. (1965) *The Sea Fishes of Southern Africa. 5th Edition*. Central News Agency Ltd., 580 pp.
Smith, J.L.B. (1967a) The lizard shark *Chlamydoselachus anguineus* Garman in South Africa. *Occasional Papers of the Department of Ichthyology, Rhodes University, Grahamstown, South Africa*, 10, 105–115.
Smith, J.L.B. (1967b) A new squalid shark from South Africa with notes on the rare *Atractophorus armatus* Gilchrist. *Occasional Papers of the Department of Ichthyology, Rhodes University*, 11, 117–136.
Smith, J.L.B. (1968) New and interesting fishes from deepish water off Durban, Natal and southern Mozambique. *South African Association for Marine Biological Research, Oceanographic Research Institute, Investigational Report*, 19, 1–30.
Smith, J.L.B. & Smith, M.M. (1966) *Fishes of the Tsitsikama National Park*. National Parks Board Trust, Pretoria, 161 pp.
Smith, M.M. (1975) Common and scientific names of the fishes of southern Africa. Part 1. Marine fishes. *J.L.B. Smith Institute of Ichthyology Special Publication*, 14, 1–178.
Smith, M.M. & Heemstra, P.C. (1986a) (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, 1191 pp.
Smith, M.M. & Heemstra, P.C. (1986b) Family Hexatrygonidae. *In:* Smith, M.M. & Heemstra, P.C. (Eds.), *Smith's Sea Fishes*. Macmillan, Johannesburg, pp. 142–143.
https://doi.org/10.1007/978-3-642-82858-4
Soares, K.D.A. & Carvalho, M.R. de (2019) The catshark genus *Scyliorhinus* (Chondrichthyes: Carcharhiniformes: Scyliorhinidae): taxonomy, morphology and distribution. *Zootaxa*, 4601 (1), 1–147.
https://doi.org/10.11646/zootaxa.4601.1.1
Springer, S. (1950) A revision of North American sharks allied to the genus *Carcharhinus*. *American Museum Novitates*, 1451, 1–13.
Springer, S. (1979) A revision of the catsharks, family Scyliorhinidae. *NOAA (National Oceanic and Atmospheric Administration) Technical Report NMFS (National Marine Fisheries Service) Circular*, 422, 1–152.
https://doi.org/10.5962/bhl.title.63029
Springer, V.G. & Garrick, J.A.F. (1964) A survey of vertebral numbers in sharks. *Proceedings of the United States National Museum*, 116, 73–96.
https://doi.org/10.5479/si.00963801.116-3496.73
Stehmann, M. (1970) Vergleichend morphologische und anatomische Untersuchungen zur Neuordnung der Systematik der Nordostatlantischen Rajidae. *Archiv für Fischereiwissenschaft*, 21, 73–164.
Stehmann, M. (1971) Untersuchungen zur validät von *Raja maderensis* Lowe, 1839, zur geographischen variation von *Raja straeleni* Poll, 1951, und zum subgenerischen status beider arbeiten arten (Pisces, Batoidei, Rajidae). *Archiv für Fischereiwissenschaft*, 22 (3), 175–199.
Stehmann, M. (1995) First and new records of skates (Chondrichthyes, Rajiformes, Rajidae) from the West African continental slope (Morocco to South Africa), with descriptions of two new species. *Archiv für Fischereiwissenschaft*, 43 (1), 1–119.
Stehmann, M.F.W. (1976) *Breviraja caerulea* spec. nov. (Elasmobranchii, Batoidea, Rajidae); eine neue archibenthale Rochenart und zugleich ein Erstnachweis ihrer Gattung im Nordostatlantik. *Archiv für Fischereiwissenschaft*, 27 (2), 97–114.
Steindachner, F. (1866) Über die Fische von Port Jackson in Australien. *Anzeiger der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftlichen Classe*, 3 (7), 50–54.
Stevens, G., Fernando, D., Dando, M. & Notarbartolo di Sciara, G. (2018) *Guide to the Manta & Devil Rays of the World*. Wild Nature Press, Plymouth, 144 pp.
https://doi.org/10.1515/9780691207216
Storer, D.H. (1843) Description of a new species of *Torpedo*. *American Journal of Science and Arts*, 45 (1), Art. 18, 165–170, pl. 3.
Storm, V. (1881) Bidrag til kundskab om Trondhjemsfjordens fauna. III. Det Kongelige Norske videnskabers selskabs skrifter, Trondheim, 1880, 73–96.
Straube, N., Duhamel, G., Gasco, N., Kriwet, J. & Schliewen, U.K. (2011a) Description of a new deep-sea lantern shark *Etmopterus viator* sp. nov. (Squaliformes: Etmopteridae) from the Southern Hemisphere. *Cybium*, 35 (Supplement), 137–150.
Straube, N., Kriwet, J. & Schliewen, U.K. (2011b) Cryptic diversity and species assignment of large lantern sharks of the *Etmopterus spinax* clade from the Southern Hemisphere (Squaliformes, Etmopteridae). *Zoologica Scripta*, 40 (1), 61–75.
https://doi.org/10.1111/j.1463-6409.2010.00455.x
Straube, N., Leslie, R.W., Clerkin, P.J., Ebert, D.A., Rochel, E., Corrigan, S.L., Chenhong, L. & Naylor, G.J.P. (2015) On the occurrence of the southern lanternshark, *Etmopteus granulosus*, off South Africa, with comments on the validity of *E. compagnoi*. *Deepsea Research II: Topical Studies in Oceanography*, 115, 11–17.
https://doi.org/10.1016/j.dsr2.2014.04.004
Tanaka, S. (1912) Figures and descriptions of the fishes of Japan, including the Riukiu Islands, Bonin Islands, Formosa, Kurile Islands, Korea, and southern Sakhalin. *Figures and Descriptions of the Fishes of Japan*, 9, 145–164.
https://doi.org/10.5962/bhl.title.13715
Taniuchi, T. & Garrick, J.A.F. (1986) A new species of *Scymnodalatias* from the southern oceans, and comments on other squaliform sharks. *Japanese Journal of Ichthyology*, 33 (2), 119–134.
https://doi.org/10.1007/BF02905840

Taylor, L.R. Jr., Compagno, L.J.V. & Struhsaker, P.J. (1983) Megamouth–a new species, genus, and family of lamnoid shark (*Megachasma pelagios*, family Megachasmidae) from the Hawaiian Islands. *Proceedings of the California Academy of Sciences*, Series 4, 43 (8), 87–110.

Teng, H.-T. (1962) *Classification and Distribution of the Chondrichthyes of Taiwan*. Ogawa Press, Maizuru, 304 pp.

Thompson, W.W. (1914) Catalogue of the fishes of the Cape Province (Pt 1). *Marine Biological Report, Cape Town*, 2 (8), 132–167.

Van Bruggen, A.C. (1965) Records and observations in the Port Elizabeth oceanarium in 1960. *Zoologische Garten, Leipzig*, 31 (3/4), 190–191.

Van der Elst, R. (1981) *A Guide to the Common Sea Fishes of Southern Africa*. C. Struik, Cape Town, 367 pp.

van der Laan R., Eschmeyer, W.N. & Fricke, R. (2014) Family-group names of recent fishes. *Zootaxa*, 3882 (1), 1–230. https://doi.org/10.11646/zootaxa.3882.1.1

van Hasselt, J.C. (1823) Uittreksel uit een' brief van Dr. J. C. van Hasselt, aan den Heer C. J. Temminck. *Algemeene Konst- en Letter-bode voor het Jaar I Deel*, No. 20, 315–317.

van Hasselt, J.C. (1824) Sur les poissons de Java. Extrait d'une première lettre du Dr. J.-P. van Hasselt à M. C. J. Temminck. (Algem. Konst. en Ledderbode, mai 1823.). *Bulletin des Sciences Naturelles et de Géologie, Férussac*, 2 (Zoologie), Art. 73, 89–92.

van Oijen, M.J.P. (2001) *Squalus edwardsii* (currrently *Haploblepharus edwardsii*; Chondrichthyes, Carcharhiniformes): proposed attribution to Schinz (1822) and conservation of *edwardsii* as the correct original spelling. *Bulletin of Zoological Nomenclature*, 58 (4), 294–296.

Veríssimo, A., Zaera-Perez, D., Leslie, R., Iglésias, S.P., Séret, B., Grigoriou, P., Aspasia, S., Gubili, C., Barría, C., Duffy, C., Hernández, S., Batjakas, I.E. & Griffiths, A.M. (2017) Molecular diversity and distribution of eastern Atlantic and Mediterranean dogfishes *Squalus* highlight taxonomic issues in the genus. *Zoologica Scripta*, 46 (4), 414–428. https://doi.org/10.1111/zsc.12224

Viana, S.T. de F.L., de Carvalho, M.R. & Ebert, D.A. (2017) *Squalus bassi* sp. nov., a new long-snouted spurdog (Chondrichthyes: Squaliformes: Squalidae) from the Agulhas Bank. *Journal of Fish Biology*, 91 (4), 1178–1207. https://doi.org/10.1111/jfb.13448

Viana, S.T. de F.L., Lisher, M.W. & de Carvalho, M.R. (2018) Two new species of short-snouted dogfish sharks of the genus *Squalus* Linnaeus, 1758, from southern Africa (Chondrichthyes: Squaliformes: Squalidae). *Marine Biodiversity*, 48, 1787–1814. https://doi.org/10.1007/s12526-017-0673-8

Viana, S.T.F.L. & Carvalho, M.R. de (2018) Resurrection and redescription of the southern dogfish *Squalus probatovi* (Squalidae), a valid species from Angola. *Journal of Ichthyology*, 58 (5), 617–632. https://doi.org/10.1134/S003294521805020X

Voigt, F.S. (1832) *Das Thierreich von Cuvier, übersetzt und durch Zusätze erweitert. Vol. 2*. Brockhaus, Leipzig. [unknown pagination]

von Bonde, C. (1923) Shallow-water fishes procured by the S.S. "Pickle". Special Report 1 in *Report on the Fisheries and Marine Biological Survey, Union of South Africa*, 3, 1–40.

von Bonde, C. (1932) Report no. 9 for the year ending December, 1931. Report of Fisheries and Marine Biological Survey for 1931, including lists of fishes, etc., lists of stations of the R.S. Africana, and salinity results obtained during 1931. *Union of South Africa, Fisheries and Marine Biological Survey, Report*, 9, 1932, 4–128.

von Bonde, C. (1933) Report no 10 for the year ending December, 1932. Report of Fisheries and Marine Biological Survey for 1932, including lists of fishes, etc., lists of stations of the R.S. Africana, and salinity results obtained during 1932. *Union of South Africa, Fisheries and Marine Biological Survey, Report*, 10, 1933, 4–109.

von Bonde, C. (1934) Shark fishing as an industry. *Union of South Africa, Department of Commerce and Industry, Fisheries and Marine Biological Survey, Investigational Report*, Series 2, 1–19.

von Bonde, C. (1945a) The external development of the banded dogfish or Pofadderhaai *Haploblepharus edwardsii* (M. & H.). *Biological Bulletin of the Marine Biological Laboratory, Woods Hole*, 88 (1), 1–11. https://doi.org/10.2307/1538166

von Bonde, C. (1945b) Stages in the development of the picked or spiny dogfish, *Squalus acanthias* (Linn.). *Biological Bulletin of the Marine Biological Laboratory, Woods Hole*, 88 (3), 220–232. https://doi.org/10.2307/1538311

von Bonde, C. (1948) The development of the striped dogfish, (Lui-Haai) *Poroderma africanum* (Gmelin). *Transcations of the Royal Society of South Africa*, 31 (5), 465–474. https://doi.org/10.1080/00359194809518961

von Bonde, C. & Swart, D.B. (1923) The Platosomia (skates and rays) collected by the S. S. "Pickle". *University of South Africa, Fisheries and Marine Biological Survey Report*, 3 (5), 1–22.

Waite, E.R. (1899) Scientific results of the trawling expedition of H. M. C. S. "Thetis," off the coast of New South Wales, in February and March, 1898. *Memoirs of the Australian Museum, Sydney*, 4 (1), 2–132.

Waite, E.R. (1916) Fishes. *In*: Australasian Antarctic expedition 1911–1914. *Scientific Reports*, Series C (Zoology & Botany), 3 (1), 1–92.

Walbaum, J.J. (1792) *Petri Artedi sueci genera piscium. In quibus systema totum ichthyologiae proponitur cum classibus, ordinibus, generum characteribus, specierum differentiis, observationibus plurimis. Redactis speciebus 242 ad genera 52. Ichthyologiae pars III*. Ant. Ferdin. Rose, Greifswald, 723 pp.

Wallace, J.H. (1967a) The batoid fishes of the east coast of southern Africa. Part III: skates and electric rays. *Investigational Report*. *Oceanographic Research Institute, Durban*, 17, 1–62.

Wallace, J.H. (1967b) The batoid fishes of the east coast of southern Africa. Part I: sawfishes and guitarfishes. *Investigational Report*. *Oceanographic Research Institute, Durban*, 15, 1–32.

Wallace, J.H. (1967c) The batoid fishes of the east coast of southern Africa. Part II: manta, eagle, duckbill, cownose, butterfly and sting rays. *Investigational Report*. *Oceanographic Research Institute, Durban*, 16, 1–56.

Walmsley-Hart, S.A., Sauer, W.H.H. & Buxton, C.D. (1999) The biology of the skates *Raja wallacei* and *R. pullopunctata* (Batoidea: Rajidae) on the Agulhas Bank, South Africa. *South African Journal of Marine Science*, 21, 165–179. https://doi.org/10.2989/025776199784126051

Walovich, K.A., Ebert, D.A. & Kemper, J.M. (2017) *Hydrolagus erithacus* sp. nov. (Chimaeriformes: Chimaeridae), a new species of chimaerid from southeastern Atlantic and southwestern Indian oceans. *Zootaxa*, 4226 (4), 509–520. https://doi.org/10.11646/zootaxa.4226.4.4

Walovich, K.A., Ebert, D.A., Long, D.J. & Didier, D.A. (2015) Redescription of *Hydrolagus africanus* (Gilchrist, 1922) (Chimaeriformes: Chimaeridae), with a review of southern African chimaeroids and a key to their identification. *African Journal of Marine Science*, 37, 157–165. https://doi.org/10.2989/1814232X.2015.1033012

Weigmann, S. (2016) Annotated checklist of the living sharks, batoids and chimaeras (Chondrichthyes) of the world, with a focus on biogeographical diversity. *Journal of Fish Biology*, 88, 837–1037. https://doi.org/10.1111/jfb.12874

Weigmann, S., Stehmann, M.F.W. & Thiel, R. (2014a) *Rajella paucispinosa* n. sp., a new deep-water skate (Elasmobranchii, Rajidae) from the western Indian Ocean off South Mozambique, and a revised generic diagnosis. *Zootaxa*, 3847 (3), 359–387. https://doi.org/10.11646/zootaxa.3847.3.3

Weigmann, S., Stehmann, M.F.W. & Thiel, R. (2014b) Complementary redescription of *Anacanthobatis ori* (Wallace, 1967) and its assignment to *Indobatis* n. g. (Elasmobranchii, Anacanthobatidae), with comments on other legskates. *Zootaxa*, 3779 (2), 101–132. https://doi.org/10.11646/zootaxa.3779.2.1

Weigmann, S., Séret, B., Last, P.R. & McEachran, J.D. (2016a) Pygmy skates. Family Gurgesiellidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 473–493. https://doi.org/10.1071/9780643109148

Weigmann, S., Vaz, D.F.B., White, W.T., Carvalho, M.R. de & Thiel, R. (2016b) Distribution and comments on the morphology of *Centroscymnus owstonii* Garman, 1906 (Squaliformes: Somniosidae), with focus on its occurrence in the Indian Ocean. *Marine Biodiversity*, 46 (3), 641–653. https://doi.org/10.1007/s12526-015-0413-x

Weigmann, S., Gon, O., Leeney, R.H., Barrowclift, E., Berggren, P., Jiddawi, N. & Temple, A.J. (2020) Revision of the sixgill sawsharks, genus *Pliotrema* (Chondrichthyes, Pristiophoriformes), with descriptions of two new species and a redescription of *P. warreni* Regan. *PLoS ONE*, 15 (3), e0228791. https://doi.org/10.1371/journal.pone.0228791

White, E.G. (1937) Interrelationships of the elasmobranchs with a key to the order Galea. *Bulletin of the American Museum of Natural History*, 74 (2), 25–138.

White, W.T. (2012) A redescription of *Carcharhinus dussumieri* and *C. sealei*, with resurrection of *C. coatesi* and *C. tjutjot* as valid species (Chondrichthyes: Carcharhinidae). *Zootaxa*, 3241 (1), 1–34. https://doi.org/10.11646/zootaxa.3241.1.1

White, W.T. (2014) A revised generic arrangement for the eagle ray family Myliobatidae, with definitions for the valid genera. *Zootaxa*, 3860 (2), 149–166. https://doi.org/10.11646/zootaxa.3860.2.3

White, W.T., Ebert, D.A. & Compagno, L.J.V. (2008) Description of two new species of gulper sharks, genus *Centrophorus* (Chondrichthyes: Squaliformes: Centrophoridae) from Australia. *In:* Last, P.R., White, W.T. & Pogonoski, J.J. (Eds.), Descriptions of New Australian Chondrichthyans. *CSIRO Marine and Atmospheric Research Paper*, 022, pp. 1–21.

White, W.T., Ebert, D.A., Naylor, G.J.P., Ho, H.-C., Clerkin, P.J., Verissimo, A. & Cotton, C.F. (2013) Revision of the genus *Centrophorus* (Squaliformes: Centrophoridae): Part 1—redescription of *Centrophorus granulosus* (Bloch & Schneider), a senior synonymy of *C. acus* Garman and *C. niaukang*, Teng. *Zootaxa*, 3752 (1), 35–72. https://doi.org/10.11646/zootaxa.3752.1.5

White, W.T. & Weigmann, S. (2014) *Carcharhinus humani* sp. nov., a new whaler shark (Carcharhiniformes: Carcharhinidae) from the western Indian Ocean. *Zootaxa*, 3821 (1), 71–87. https://doi.org/10.11646/zootaxa.3821.1.5

White, W.T., Vaz, D.F.B., Ho, H.-C., Ebert, D.A., de Carvalho, M.R., Corrigan, S., Rochel, E., de Carvalho, M., Tanaka, S. & Naylor, G.J.P. (2015) Redescription of *Scymnodon ichiharai* Yano & Tanaka 1984 (Squaliformes: Somniosidae) from the western North Pacific, with comments on the definition of somniosid genera. *Ichthyological Research*, 62, 213–229. https://doi.org/10.1007/s10228-014-0430-y

White, W.T. & Last, P.R. (2016a) Eagle rays. Family Myliobatidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 706–725. https://doi.org/10.1071/9780643109148

White, W.T. & Last, P.R. (2016b) Pelagic eagle rays. Family Aetobatidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 726–731. https://doi.org/10.1071/9780643109148

White, W.T. & Last, P.R. (2016c) Devilrays. Family Mobulidae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 741–749. https://doi.org/10.1071/9780643109148

White, W.T., Ebert, D.A. & Naylor, G.J.P. (2017) Revision of the genus *Centrophorus* (Squaliformes: Centrophoridae): Part 2—Description of two new species of *Centrophorus* and clarification of the status of *Centrophorus lusitanicus* Barbosa du Bocage & de Brito Capello, 1864. *Zootaxa*, 4344 (1), 86–114.

White, W.T., Corrigan, S., Yang, L., Henderson, A.C., Bazinet, A.L., Swofford, D.L. & Naylor, G.J.P. (2018) Phylogeny of the manta and devilrays (Chondrichthyes: Mobulidae), with an updated taxonomic arrangement for the family. *Zoological Journal of the Linnean Society*, 182 (1), 50–75. https://doi.org/10.1093/zoolinnean/zlx018

White, W.T. & Ko'ou, A. (2018) An annotated checklist of the chondrichthyans of Papua New Guinea. *Zootaxa*, 4411 (1), 1–82. https://doi.org/10.11646/zootaxa.4411.1

Whitley, G.P. (1929) Additions to the check-list of the fishes of New South Wales. No. 2. *Australian Zoologist*, 5 (4), 353–357.

Whitley, G.P. (1933) Studies in ichthyology. No. 7. *Records of the Australian Museum*, 19 (1), 60–112. https://doi.org/10.3853/j.0067-1975.19.1933.691

Whitley, G.P. (1939) Taxonomic notes on sharks and rays. *Australian Zoologist*, 9 (3), 227–262.

Whitley, G.P. (1940) *The Fishes of Australia. Part I. The Sharks, Rays, Devil-fish, and Other Primitive Fishes of Australia and New Zealand. Australian Zoological Handbook*. Royal Zoological Society of New South Wales, Sydney, 280 pp.

Yano, K., Stevens, J.D. & Compagno, L.J.V. (2004) A review of the systematics of the sleeper shark genus *Somniosus* with redescriptions of *Somniosus (Somniosus) antarcticus* and *Somniosus (Rhinoscymnus) longus* (Squaliformes: Somniosidae). *Ichthyological Research*, 51 (4), 360–373. https://doi.org/10.1007/s10228-004-0244-4

Yokota, L., White, W.T. & de Carvalho, M.R. (2016) Butterfly rays. Family Gymnuridae. *In*: Last, P.R., White, W.T., de Carvalho, M.E., Séret, B., Stehmann, M.F.W. & Naylor, G.J.P. (Eds.), *Rays of the World*. Cornell University Press, Ithaca, New York, pp. 511–521. https://doi.org/10.1071/9780643109148