

# ANNOTATED LIST OF FISHES CAUGHT BY THE R/V ARQUIPÉLAGO OFF THE CAPE VERDE ARCHIPELAGO

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MENEZES, G.M., O. TARICHE, M.R. PINHO, P.N. DUARTE, A. FERNANDES, M.A. ABOIM 2004. Annotated list of fishes caught by the R/V Arquipélago off the Cape Verde archipelago. *Arquipélago*. Life and Marine Sciences 21A: 57-71.

A prospective survey was carried out in October - November of 2000, in the Cape Verde archipelago, by the R/V ARQUIPÉLAGO. The main objective was to determine the species composition and relative abundance of the demersal fish resources living in the waters of the Cape Verde archipelago. A list of fishes caught with bottom longline during the survey is presented in this document, along with information about the area, depth limits and the relative abundance of the species in the catches. Ninety-seven different species from 49 families were identified from 20 long-line sets. To our knowledge, the following 12 species were recorded for the first time from the waters of Cape Verde islands: *Etmopterus princeps*, *Etmopterus pusillus*, *Gymnothorax maderensis*, *Myroconger compressus*, *Laemonema robustum*, *Beryx splendens*, *Scorpaena elongata*, *Serranus atricauda*, *Taractes rubescens*, *Taractichthys longipinnis*, *Pagrus africanus* and *Cathidermis sufflamen*. The species *Laemonema robustum*, were new to the CLOFETA area.

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## INTRODUCTION

The Democratic Republic of Cape Verde, covering 4033 km<sup>2</sup> and composed of 10 islands and five islets, is located in the Eastern Atlantic (36° - 40° N, 22° - 26° W), 750 km from the west of African continent. Despite of the relatively vastness of the Cape Verde Exclusive Economic Zone (734 265 km<sup>2</sup>), the area with depths less than 200 metres near the island shelf is only 5934 km<sup>2</sup> (BRAVO DE LAGUNA 1985). Due to the limited extension of the island shelf and the relatively low primary production around the islands, the biodiversity is apparently lower than on the adjacent continental coast of Africa.

Fish diversity has been the target of several studies and surveys. The first list of fishes inhabiting the Cape Verdean waters was published by FRANÇA & VASCONCELOS (1962), based on surveys in 1957, 1958 and 1959, by the Portuguese R/V BALDAQUE DA SILVA. A list

of 128 species was compiled along with the locality of the catches and the fishing method used.

REINER (1996) summarized oceanographic expeditions which have contributed to the knowledge of the biodiversity of marine fishes in Cape Verde from 1832 (HMS BEAGLE) to 1981 (R/V DR. FRIDTJOF NANSEN). The islandic research ships FENGUR did surveys in 1984, 1985 and 1988, and ISLANDIA in 1994, 1995, 1996 and 1997. The R/V CAPRICÓRNIO conducted a survey of oceanography and small pelagic fish (IPIMAR and INDP, 1997).

REINER (1996) cited and described 528 species of marine fishes recorded and likely to occur in Cape Verdean waters. The marine fishes from Cape Verde are included in the Check-list of the fishes of the eastern tropical Atlantic - CLOFETA (QUÉRO et al. 1990), a basic reference work for the West African waters. Recently, new fish species for Cape Verde were added by BRITO

& MILLER (2001) with the description of *Gobius ateriformis* and *Gobius tetrophthalmus*.

The main purpose of this work is to report on the fishes caught during the longline survey cruise of the R/V ARQUIPÉLAGO (MENEZES 2003), operated by the Department of Oceanography and Fisheries (DOP) of the University of the Azores (UAç). This survey was implemented under the CABOFISH project (Research cruise on the demersal and deep-water fishing resources of Cape Verde), which was a joint initiative between the governments of Cape Verde and the Azores, the University of the Azores and the Instituto Nacional de Desenvolvimento das Pescas (INDP) of Cape Verde. The main aims of the project were to identify the demersal and deep-water ichthyofauna and their main distribution patterns down to 1200 m depth, and prospect for fish species potentially interesting for the development of a bottom longline fishery in the archipelago of Cape Verde.

## MATERIAL AND METHODS

The R/V ARQUIPÉLAGO survey was carried out in October and November of 2000 (MENEZES et al. 2001) by researchers from DOP and INDP (the National Institute for Fisheries Development, Cape Verde Islands). The survey covered the entire archipelago, which was divided into five areas according to island proximity and assumed biological similarity (Fig. 1). Areas were identified as follows: 1 - Santo Antão, São Nicolau, São Vicente and Santa Luzia, islands and Branco islet; 2 - Sal and Boavista islands; 3 - Maio and São Tiago islands; 4 - Brava and Fogo islands, and Grande islet; 5 - Nova Holanda and Noroeste banks. The number of stations per area was proportional to the size of each area. Fishing stations were semi-randomly distributed in order to repeat some hand-line stations from earlier surveys (ODDSSON & MONTEIRO 1998). The depths studied on this expedition ranged from a few metres to 1200 m.

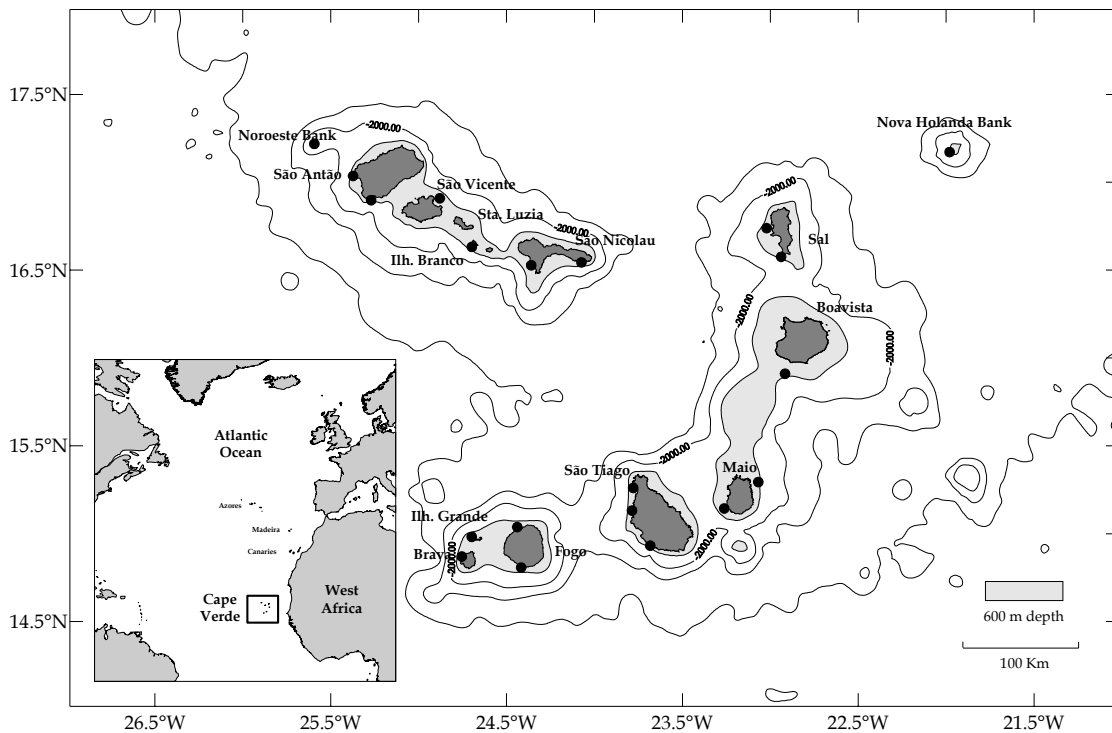


Fig. 1. The Cape Verde archipelago. Location of the fishing stations (black circles) sampled during the bottom longline survey by the R/V ARQUIPÉLAGO (adapted from MENEZES 2003).

A bottom longline, with Steel No. 9 “J” shaped hooks (with a gape of 12 mm) was baited with salted sardine (*Sardina pilchardus*) during the first part of the operations, and later with bigeye scad (*Selar crumenophthalmus*). The allocated fishing effort along depth was proportional to the planar area of each depth stratum. The longline was deployed around 06:00h and usually retrieved two hours later.

The catches were sorted by depth strata, identified to species, counted, weighed and measured. Biological sampling was also carried out for future studies of reproduction, growth and genetics. Most of the fishes were identified onboard, but some were frozen for later identification. At least one specimen of most species was photographed and copies deposited in the DOP/UAç archives (*ImagDOP*). Whenever possible, specimens of each species were preserved and deposited in the DOP/UAç or INDP fish reference collections.

In the following list, fishes are grouped by Class, Order and Family following FishBase (FROESE & PAULY 2004). Identification of the species mostly follows WHITEHEAD et al. (1989), FishBase (FROESE & PAULY 2004), HUREAU & MONOD (1979), STARNES (1988), EDWARDS (1991), REINER & MARTINS (1995). The following FAO identification sheets were also consulted: FISHER et al. (1981), COMPAGNO (1984), ALLEN (1985), NAKAMURA (1985), COHEN et al. (1990), SCHNEIDER (1990), HEEMSTRA & RANDALL (1993), NAKAMURA & PARIN (1993), FISHER et al. (1995). Whenever possible, the species common names are indicated in English (En), Cape Verde Creole (Cr), and Portuguese (Pt). The sources for the English names were from FishBase (FROESE & PAULY 2004) and WHITEHEAD et al. (1989). Portuguese names follow SANCHES (1986) or SANTOS et al. (1997), and the Cape Verde Creole names were given by local co-authors, in most cases corresponding to those REINER (1996).

In this work, we used the following four fields for characterising each species:

*Abundance*: reflects both the relative abundance and the frequency of occurrence of each species. The relative abundance was measured as the average percentage of catch per unit effort (catch per hook) of each species per

depth strata. The frequency of occurrence was measured as the average percentage of occurrence of each species in all the fishing sets per depth strata. Abundance category follows the arbitrary groups of MENEZES (2003) based on the combination of the two above indices: *I - Rare* with a relative abundance smaller than 0.01%; *II - Common* species with an average relative abundance values between 0.01% and 0.1% *III - Frequent* species with average relative abundance values between 0.1 and 10% and an average frequency of occurrence between 1 and 10%; *IV - Dominant* species each accounting with more than 10% of the average relative abundance with an average frequency of occurrence of more than 25%.

*Occurrence*: indicates fishing areas and depth range. The sub-areas covered by the survey were (see also Figure 1): Santo Antão, São Vicente, Boavista, Sal, São Nicolau, Maio, Santiago, Brava, and Fogo islands, Branco and Grande islets, and Noroeste and Nova Holanda seamounts.

*Size*: Refers to the minimum and the maximum of the Total length (TL) or Fork length (FL), according to the species.

*Remarks*: further notes were added whenever considered relevant.

## RESULTS

The following species of fishes were caught and identified during the survey expedition off the Cape Verde archipelago:

### CLASS CHONDRICHTHYES

#### ORDER HEXANCHIFORMES

##### Family Hexanchidae

*Heptanchias perlo* (Bonnaterre, 1788)

Sharpenose sevengill shark (En). Boca-doce (Pt).

Frequent, caught at Nova Holanda seamount and Santo Antão island, between 300-500 m. *Size* (TL): 81 - 108 cm

#### ORDER SQUALIFORMES

##### Family Dalatiidae

***Etmopterus princeps*** Collet, 1904  
Greater lanternshark (En). Lixinha da fundura (Pt).

Frequent, caught at Nova Holanda seamount, Boavista, Maio and, Sal islands, between 600-800 m, but usually from 650-750 m. *Size* (TL): 24 - 43 cm. *Remarks*: First record for Cape Verde islands (Fig. 2). Recorded from off Senegal (CLOFETA).

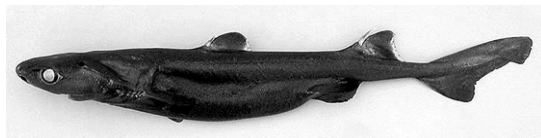


Fig. 2. New species recorded to Cape Verde - *Etmopterus princeps* (Photo credits: PDuarte - ImagDOP).

***Etmopterus pusillus*** (Lowe, 1839)  
Smooth lanternshark (En). Xarinha preta (Pt).  
Frequent, caught at Nova Holanda bank, Maio, Sal, Santo Antão, Santiago, and São Nicolau islands, between 400-1100 m, but usually from 650-700 m. *Size* (TL): 30 - 56 cm. *Remarks*: First record for Cape Verde islands (Fig. 3).



Fig. 3. New species recorded to Cape Verde - *Etmopterus pusillus* (Photo credits: PDuarte - ImagDOP).

***Scymnodon obscurus*** (Vaillant, 1888)  
Smallmouth velvet dogfish (En). Arreganhada (Pt).  
Frequent, one individual caught at Sal island, between 800 -850 m.

Family Centrophoridae

***Centrophorus granulosus*** (Bloch & Schneider, 1801)  
Gulper shark (En). Gata (Cr). Barroso (Pt).  
Dominant, caught at Boavista, Brava, Fogo, Maio, Sal, Santiago, Santo Antão, São Nicolau, São Vicente islands, and Grande islet, between 200-1050 m, but usually from 650-700 m. *Size* (TL): 64 - 108 cm. *Remarks*: 25 individuals

caught below the deepest limit cited in CLOFETA (800 m).

***Centrophorus lusitanicus*** Bocage & Capello, 1864  
Lowfin gulper shark (En). Gata lixa (Cr). Barroso (Pt).  
Common, caught at Fogo and São Vicente islands, between 600-700 m. *Size* (TL): 74 - 75 cm.

***Centrophorus uyato*** (Rafinesque, 1810)  
Little gulper shark (En). Gata (Cr). Barroso pequeno (Pt).  
Frequent, caught at Boavista, Maio, Sal Santo Antão, Santiago, São Nicolau and São Vicente islands, between 150-850 m, but usually from 600-700 m. *Size* (TL): 46 - 100 cm. *Remarks*: 13 individuals caught below the deepest limit cited in CLOFETA (400 m).

***Deania profundorum*** (Smith & Radcliffe, 1912)  
Arrowhead dogfish (En). Sapata (Pt).  
Frequent, caught at São Nicolau, between 700-850 m. *Size* (TL): 61 - 74 cm. *Remarks*: Caught to 800 m. Two individuals caught below the deepest limit cited in CLOFETA (600 m).

ORDER LAMNIFORMES

Family Odontaspidae

***Carcharias taurus*** Rafinesque, 1810  
Sand tiger shark (En). Tubarão touro (Pt).  
*Remarks*: One individual caught at surface detached from the fishing line, at Branco islet. *Size*: not recorded.

***Odontaspis ferox*** (Risso, 1810)  
Smalltooth sand tiger (En). Tubarão areia (Pt).  
Common, caught at Santiago island, between 650-700 m. *Size* (TL): ca. 300 cm.

ORDER CARCHARHINIFORMES

Family Pseudotriakidae

***Pseudotriakis microdon*** Capello, 1868/7  
False catshark (En). Peixe mona (Pt).

*Remarks:* One individual caught at surface detached from the fishing line, at Santiago island. *Size* (TL): 223 cm.

Family Triakidae

***Mustelus mustelus*** (Linnaeus, 1758)  
Smooth-hound (En). Cação (Cr). Cação (Pt).  
Frequent, caught at the islands of Boavista, Maio, Sal, Santiago, Santo Antão, São Nicolau, São Vicente, and Branco islet, between 0-350 m, but usually between 0-100 m. *Size* (TL): 47 - 121 cm.

Family Carcharhinidae

***Rhizoprionodon acutus*** (Rüppel, 1837)  
Milk shark (En). Tubarão bicudo (Pt).  
Frequent, caught at Maio island, between 0-50 m. *Size* (TL): 43 - 192 cm.

***Carcharinus altimus*** (Spriger, 1950)  
Bignose shark (En). Tubarão baboso (Pt).  
Common, one individual caught at São Vicente island, between 0-50 m. *Size* (TL): 74 cm.

ORDER RAJIFORMES

Family Rajidae

***Raja herwigi*** Krefft, 1965  
Cape Verde skate (En). Raia (Cr) Raia de Cabo Verde (Pt).  
Common, caught at Santiago, between 250-300 m. *Size* (TL): 49 - 51 cm. *Remarks:* Endemic species from Cape Verde islands. Caught below the deepest limit cited in CLOFETA (102 m).

CLASS ACTINOPTERYGII

ORDER ANGUILLIFORMES

Family Muraenidae

***Gymnothorax afer*** Bloch, 1795  
Dark moray (En). Moreia preta (Cr). Moreão escuro (Pt).  
Common, caught at Fogo and Santiago islands, between 50-100m. *Size* (TL): 45 - 93 cm.

***Gymnothorax vicinus*** (Castelnau, 1855)  
Dark moray (En). Moreia preta (Cr). Moreão escuro (Pt).

Common, caught at Fogo and Santiago islands, between 50-100m. *Size* (TL): 53 - 72 cm.

***Gymnothorax maderensis*** (Johnson, 1862)  
Sharktooth moray (En). Moreão amarelo (Pt).  
Common, caught at Santiago island and Noroeste seamount, between 50-300m. *Size* (TL): 61 - 90 cm. *Remarks:* First record for Cape Verde islands (Fig. 4). In CLOFETA, cited for the area after a single record from Benin. One specimen caught below the deepest limit cited in CLOFETA (200 m).



Fig. 4. New species recorded to Cape Verde - *Gymnothorax maderensis* (Photo credits: PDuarte - ImagoDOP).

***Gymnothorax polygonius*** Poey, 1875  
Polygon moray (En). Moreão (Pt).  
Frequent, caught at Santo Antão, Sal, Boavista, Maio, Santiago, São Vicente, Fogo, and São Nicolau islands, Grande and Branco islet, and Noroeste and Nova Holanda seamounts, between 50-300m, but usually from 100-200m. *Size* (TL): 50 - 98 cm.

***Muraena helena*** Linnaeus, 1758  
Mediterranean moray (En). Moreia pintada (Cr). Moreia pintada (Pt).  
Frequent, caught at Fogo, Maio and Santo Antão islands, and Noroeste and Nova Holanda seamounts, between 100-250 m, but usually from 150-200 m. *Size* (TL): 63 - 99 cm.

Family Myrocongridae

***Myroconger compressus*** Günther, 1870  
Red eel (En). Congro rosa (Pt).  
Common at Fogo and Santiago islands where 5 individuals were caught between 200-350 m. *Size*

(TL): 58 - 59 cm. *Remarks*: First record from Cape Verde Islands (Fig. 5). Very rare in museum collections. Specimens previously known from Senegal and Saint Helena, although the locality of Saint Helena specimen is questionable according to SMITH (1989), who knew of only two specimens.



Fig. 5. New species recorded to Cape Verde - *Myroconger compressus* (Photo credits: PDuarte - ImagDOP).

#### Family Congridae

***Paraconger notialis*** Kanazawa, 1961  
Guinean conger (En). Congro da Guiné (Pt). Frequent, caught at Maio, Sal, Santo Antão, São Vicente and São Nicolau islands, between 0-500m, but usually caught from 0-100 m. *Size* (TL): 45 - 82 cm. *Remarks*: Eleven individuals caught below the deepest limit cited in CLOFETA (50 m). Four individuals longer than the maximum length cited in CLOFETA: (62.7 mm).

#### Family Colocongridae

***Coloconger cadenati*** Kanazawa, 1961  
Congro preto (Pt). Frequent, caught at Boavista, Fogo, Sal, Santo Antão, Santiago São Vicente and São Nicolau islands, Grande islet, and Noroeste and Nova Holanda seamounts, between 300-850m, but usually 600-850 m. *Size* (TL): 44 - 72 cm. *Remarks*: Thirty eight individuals caught below the deepest limit cited in CLOFETA (600 m).

#### Family Ophichthidae

***Echelus myrus*** (Linnaeus, 1758)  
Painted eel (En). Cobra de orelhas (Pt). Common, caught at Maio and São Nicolau islands, between 350-550 m. *Size* (TL): 40 - 42 cm. *Remarks*: All individuals caught much deeper than the limits cited in CLOFETA and FAO species identification sheets (3 to 12 m).

***Mystriophis rostellatus*** (Richardson, 1848)  
African spoon-nose eel (En). Cobra amarela (Pt). Common, caught at Grande islet, between 100-150 m. *Size* (TL): 100 cm. *Remarks*: The fishes were caught well below the lower limit cited in CLOFETA and FAO (40 m).

#### Family Synphobranchidae

***Synphobranchus kaupii*** Johnson, 1862  
Kaup's arrowtooth eel (En). Congrinho (Pt). Dominant, caught at Boavista, Fogo, Maio, Sal, Santo Antão, Santiago, São Vicente and São Nicolau islands, Noroeste and Nova Holanda seamounts, between 500-1200 m, but usually from 800 - 850 m. *Size* (TL): 31 - 72 cm.

#### ORDER AULOPIFORMES

##### Family Aulopidae

***Aulopus filamentosus*** (Bloch, 1792)  
Royal flagfin (En) Pescada (Cr) Lagarto (Pt). Frequent, caught at Sal, São Vicente, São Nicolau, Maio, Santiago, Santo Antão, Fogo, and Brava islands, Grande islet, Nova Holanda and Noroeste seamounts, between 50-300 m, but usually from 100 - 250. *Size* (FL): 20 - 44 cm.

##### Family Synodontidae

***Synodus saurus*** (Linnaeus, 1758)  
Atlantic lizardfish (En). Pescado (Cr.) Peixe lagarto (Pt). Common, one individual caught at Maio island, between 50-100 m. *Size* (FL): 29 cm.

#### ORDER LOPHIIFORMES

##### Family Lophiidae

***Lophius vaillanti*** Regan, 1903

Shortspine african angler (En). Tamboril (Cr).  
Tamboril africano (Pt).

Frequent, caught at Boavista and São Nicolau islands, between 550-700 m. *Size* (TL): 82 cm (one specimen not measured).

ORDER GADIFORMES

Family Moridae

***Laemonema laureysi*** Poll, 1953

Guinean codling (En). Abrótea de natura (Pt).

Frequent, caught at Boavista, Fogo, Maio, Sal, Santo Antão, Santiago, São Vicente, and São Nicolau islands, Branco and Grande islets, and Noroeste and Nova Holanda seamounts, between 300-850 m, but usually from 350-700 m. *Size* (TL): 27 - 43 cm. *Remarks*: Seventeen individuals caught below the deepest limit cited in CLOFETA (618 m).

***Laemonema robustum*** Johnson, 1862

Rare, 1 specimen caught at Santo Antão island, between 800-850 m. *Size* (TL): 43 cm. *Remarks*: First record for Cape Verde islands (Fig. 6). Only known previously from the Madeira archipelago. Not recorded for the area in CLOFETA.



Fig. 6. New species recorded to Cape Verde - *Laemonema robustum* (Photo credits: P Duarte - ImagDOP).

***Physiculus dalwigki*** Kaup, 1858

Black codling (En). Abrótea de natura (Pt).

Common, caught at Fogo and São Vicente islands, between 350-700 m. *Size* (TL): 29 - 30 cm.

Family Phycidae

***Phycis phycis*** (Linnaeus, 1766)

Forkbeard (En). Abrótea (Pt).

Common, caught at São Vicente islands and Noroeste seamount, between 100-250 m. *Size* (TL): 54 - 59 cm.

Family Macrouridae

***Caelorinchus caelorhincus caelorhincus*** (Risso, 1810)

Blackspot grenadier (En). Rato bicudo (Pt).

Common, caught at Santiago island, between 550-600 m.

***Malacocephalus laevis*** (Lowe, 1843)

Softhead grenadier (En). Peixe rato (Pt).

Frequent, caught at Santiago, Santo Antão, and São Nicolau islands, between 500-850 m. *Size* (TL): 37 - 47 cm (Total length).

***Malacocephalus occidentalis*** Goode & Bean, 1885

Western softhead grenadier (En). Peixe rato de serrilha (Pt).

Frequent, caught at Maio and Santiago islands, and Nova Holanda seamount, between 250-650 m. *Size* (TL): 31 - 52 cm.

ORDER OPHIDIIFORMES

Family Ophidiidae

***Brotula barbata*** (Bloch & Schneider, 1801)

Bearded brotula (En). Falsa abrótea (Pt).

Rare, one individual caught at Santiago island, between 0-50 m. *Size* (TL): 38 cm.

ORDER BERYCIFORMES

Family Trachichthyidae

***Gephyroberyx darwinii*** (Johnson, 1866)

Darwin's slimehead (En). Imperatriz (Pt.)

Frequent, caught at Boavista, Fogo, Sal, Santiago, São Nicolau islands, between 150-600 m, but usually between 350-400 m. *Size* (FL): 31 - 49 cm.

Family Berycidae

***Beryx decadactylus*** Cuvier in Cuvier & Valenciennes, 1829

Alfonsino (En). Imperador (Pt).  
Frequent, caught at Boavista, Fogo, Maio, Sal, and Santiago islands, and Nova Holanda seamount, between 250-650 m. *Size* (FL): 25 - 45 cm.

***Beryx splendens*** Lowe, 1834  
Splendid alfonsino (En). Alfonsim (Pt).  
Frequent, caught at Nova Holanda seamount, between 350-650 m. *Size* (FL): 26 - 36 cm.  
*Remarks*: First record for Cape Verde islands (Fig. 7).



Fig. 7. New species recorded to Cape Verde - *Beryx splendens* (Photo credits: PDuarte - *ImagDOP*).

Family Holocentridae

***Myripristis jacobus*** Cuvier in Cuvier & Valenciennes, 1829  
Blackbar soldierfish (En). Rainha (Cr.).  
Maraquita do alto (Pt.)  
Frequent, caught at São Nicolau island, between 0-50 m. *Size* (FL): 17 cm

***Sargocentron hastatum*** (Cuvier in Cuvier & Valenciennes, 1829)  
Red squirrelfish (En). Rei (Cr.). Esquilo (Pt.)  
Frequent, caught at Fogo, Maio, Sal, Santiago, Santo Antão, and São Nicolau islands, and Grande islet, between 0-200 m. *Size* (FL): 20 - 25 cm.

ORDER POLYMIXIIFORMES

Family Polymixiidae

***Polymixia nobilis*** Lowe, 1836  
Beardfish (En). Salmonete do alto (Pt).  
Frequent, caught at Fogo, Maio, Sal, Santiago, Santo Antão, and São Nicolau, islands, Grande and Branco islets, and Noroeste and Nova Holanda seamounts, between 50-750 m, but

usually 200-400 m. *Size* (FL): 19 - 48 cm.  
*Remarks*: Nine individuals exceeding the maximum FL cited in CLOFETA (38 cm). The largest (47.5 cm FL) was a female, caught at Fogo island.

ORDER ZEIFORMES

Family Zeidae

***Zenopsis conchifera*** (Lowe, 1852)  
Silvery John dory (En). Peixe galo (Cr). Peixe galo (Pt).  
Common, caught at Boavista, and Grande islet, between 200-300 m. *Size* (TL): 41 - 44 cm.

ORDER SYNGNATHIFORMES

Family Fistulariidae

***Fistularia petimba*** Lacepède, 1803  
Red cornetfish (En). Peixe-agulha (Pt).  
Common, one individual caught at Maio island, between 50-100 m. *Size* (FL): 77 cm.

ORDER SCORPAENIFORMES

Family Scorpaenidae

***Neomerinthe folgori*** (Postel & Roux, 1964)  
Folger's scorpionfish (En).  
Frequent, caught at Fogo, Sal, Santiago, and São Nicolau islands, Grande and Branco islets, Nova Holanda and Noroeste seamounts, between 150-750 m, but usually from 300-400 m. *Size* (TL): 33 - 57 cm. *Remarks*: Seventeen individuals caught below the deepest limit cited in CLOFETA (310 m). 36 individuals exceeding the TL max. cited in CLOFETA (35 cm).

***Pontinus accraensis*** Norman, 1935  
Ghanean rockfish (En). Requeime (Pt).  
Common, caught at Santiago island and Nova Holanda seamount, between 150-300 m. *Size* (TL): 20 - 22 cm. *Remarks*: All individuals caught were longer than the TL max. cited in CLOFETA (184 mm TL). The largest fish (220 mm TL) was caught in Nova Holanda seamount.

***Pontinus kuhlii*** (Bowdich, 1825)



Offshore rockfish (En). Fanhama (Cr). Bagre (Pt). Frequent, caught at Fogo, Sal, Santiago, São Nicolau, São Vicente, Santo Antão, Maio, Fogo, Boavista, and Brava islands, and Grande islet, between 50-500 m, but usually between 200-400 m. *Size* (TL): 16 - 46 cm

***Scorpaena angolensis*** Norman, 1935

Angola rockfish (En). Charroco (Cr). Rascasso de Angola (Pt).

Common, caught at Maio, and Sal islands, between 0-100 m. *Size* (TL): 20 - 21 cm. *Remarks*: Two individuals longer than the TL max. cited in CLOFETA (150 mm). The largest (20.5 cm TL) was caught in Maio island.

***Scorpaena elongata*** Cadenat, 1943

Slender rockfish (En). Charroco (Cr).

Frequent, caught at Fogo, Maio, and Santiago islands, and Grande islet, between 150-450 m. *Size* (TL): 30 - 46 cm. *Remarks*: First record for Cape Verde islands (Fig. 8).



Fig. 8. New species recorded to Cape Verde - *Scorpaena elongata* (Photo credits: PDuarte - ImagDOP).

***Scorpaena scrofa*** Linnaeus, 1758

Largescaled scorpionfish (En). Garoupa de Madeira (Cr). Rocaz (Pt).

Frequent, at Santo Antão, and São Nicolau islands, Noroeste seamount, between 50-250 m. *Size* (TL): 27 - 43 cm

Family Sebastidae

***Helicolenus dactylopterus*** (Delaroche, 1809)

Bluemouth rockfish (En). Fanhama (Cr). Boca-negra (Pt).

Frequent, caught at Fogo, Santiago, São Nicolau, Santo Antão, Maio, and Boavista islands, Grande and Branco islets, and Noroeste and Nova

Holanda seamounts, between 250-750 m, but usually 400-600 m. *Size* (TL): 24 - 50 cm. *Remarks*: Thirteen individuals longer than the TL max. cited in CLOFETA (40 cm). The largest fish (50 cm, male, 2169 g) was caught at Santiago island.

ORDER DACTYLOPTERIFORMES

Family Dactylopteridae

***Dactylopterus volitans*** (Linnaeus, 1758)

Flying gurnard (En). Passo ganeto (Cr). Cabra voadora (Pt).

Frequent, caught at Boavista, Maio, Santiago and São Vicente islands, and Branco islet, between 0-150 m. *Size* (FL): 28 - 51 cm.

ORDER PERCIFORMES

Family Serranidae

***Cephalopholis taeniops*** (Valenciennes in Cuvier & Valenciennes, 1828)

African hind (En). Garoupa (Cr).

Frequent, caught at Boavista, Brava, Fogo, Maio, Sal, Santiago, Santo Antão, and São Nicolau islands, Grande and Branco islets, between 0-200 m, but usually from 50-100 m. *Size* (TL): 24 - 59 cm.

***Epinephelus goreensis*** (Valenciennes, 1830)

Dogtooth grouper (En). Merôta (Cr). Garoupa de bigode (Pt).

Frequent, caught at Sal and Santo Antão islands, and Noroeste seamount, between 50-200 m, but usually from 100-150 m. *Size* (TL): 32 - 56 cm.

***Serranus atricauda*** Günther, 1874

Blacktail comber (En). Manelinho (Cr). Garoupa (Pt).

**Occurrence**: Caught at Fogo, Santiago, Sal, São Vicente, São Nicolau, Santo Antão, Maio, and Boavista islands, Grande and Branco islets, and Noroeste seamount, between 50-300 m, but usually from 50-150 m. *Size* (TL): 20 - 35 cm. *Remarks*: First record from Cape Verde islands (Fig. 9). It was misidentified as *S. cabrilla* by MONTEIRO (1998). Seventy six individuals caught below the deepest limit cited in CLOFETA (90 m).



Fig. 9. New species recorded to Cape Verde - *Serranus atricauda* (Photo credits: PDuarte - ImagDOP).

Family Anthiidae

***Anthias anthias*** (Linnaeus, 1758)

Swallowtail seaperch (En). Canário de mar (Pt). Common, two specimens caught at Fogo and Santiago islands, between 200-300 m. *Size* (FL): 25 cm.

Family Priacanthidae

***Priacanthus arenatus*** Cuvier in Cuvier & Valenciennes, 1829

Atlantic bigeye (En). Façola (Cr). Fura-vasos (Pt). Frequent, caught at Maio and Santo Antão islands, between 0-200 m. *Size* (TL): 26 - 35 cm.

***Heteropriacanthus cruentatus*** (Lacepède, 1801)

Glasseye (En). Façola (Cr). Fura-vasos da rocha (Pt). Common, one fish caught at Santiago island, between 0-50 m. Length (TL): 26 cm

Family Carangidae

***Caranx crysos*** (Mitchill, 1815)

Blue runner (En). Bonito (Cr). Írio serra (Pt). Common, caught at Sal island, between 0-50 m. *Size* (FL): 34 - 41 cm. *Remarks*: Pelagic species.

***Caranx lugubris*** Poey, 1860

Black jack (En). Enforcado (Cr). Encharéu (Pt). Rare, one fish caught at Santo Antão island, between 100-150 m. Length (FL): 50 cm. *Remarks*: Pelagic species.

***Pseudocaranx dentex*** (Bloch & Schneider, 1801)

White trevally (En). Encharéu (Cr). Encharéu (Pt).

Rare, one fish caught at Branco islet, between 100-150 m. Length (FL): 59 cm.

*Remarks*: Pelagic species.

***Selar crumenophthalmus*** (Bloch, 1793)

Bigeye scad (En). Chicharro (Cr). Charro preto (Pt).

Common, caught at Sal island, between 0-50 m. *Size* (FL): 24 - 25 cm. *Remarks*: Pelagic species.

***Seriola fasciata*** (Bloch, 1793)

Lesser amberjack (En). Esmoregal (Cr). Íriu (Pt). Frequent, caught at Santo Antão island, Ilhéu Branco islet, and Noroeste seamount, between 0-450 m, but usually from 0-150 m. *Size* (FL): 36 - 54 cm. *Remarks*: Pelagic species.

***Trachurus picturatus*** (Bowdich, 1825)

Blue jack mackerel (En). Chicharro de Lisboa (Cr). Chicharro do alto (Pt).

Common, caught at Santiago island, and Ilhéu Branco islet, between 50-150 m. *Size* (FL): 34 - 36 cm.

***Uraspis secunda*** (Poey, 1860)

Cottonmouth jack (En). Babador (Cr). Xaréu de língua branca (Pt).

Common, 2 individuals caught at Sal island and Ilhéu Branco islet, between 0-100 m. Measurements not caught. *Remarks*: Pelagic species.

Family Bramidae

***Brama brama*** (Bonnaterre, 1788)

Atlantic pomfret (En). Xaputa (Pt). Common, one individual caught at Boavista island, between 700-750 m. Length (FL): 21 cm. *Remarks*: Pelagic species.

***Pterycombus brama*** Fries, 1837

Atlantic fanfish (En). Xaputa (Xaputa galhuda) (Pt).

Common, one individual caught at Nova Holanda seamount, between 850-900 m. Length (FL): 34 cm. *Remarks*: Pelagic species.

***Taractes rubescens*** (Jordan & Evermann, 1887).

Pomfret (En). Xaputa (Pt).

Common, caught at Sal island, between 500-650 m. *Size* (FL): 52 - 60 cm. *Remarks*: First record from Cape Verde islands (Fig. 10). CLOFETA cites only two juveniles caught off West Africa. Pelagic species.

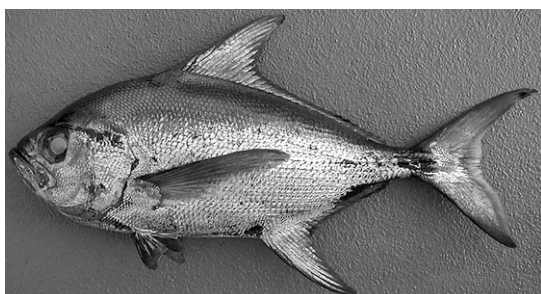


Fig. 10. New species recorded to Cape Verde - *Taractes rubescens* (Photo credits: PDuarte - ImagDOP).

***Taractichthys longipinnis*** (Lowe, 1843)

Bigscale pomfret (En). Xaputa (Pt).

Frequent, caught at Fogo, Maio and Santo Antão islands, between 350-900 m. *Size* (FL): 44 - 47 cm. *Remarks*: First record for Cape Verde islands (Fig. 11). Pelagic species.



Fig. 11. New species recorded to Cape Verde - *Taractes longispinnis* (Photo credits: PDuarte - ImagDOP).

Family Emmelichthyidae

***Erythrocles monodi*** Poll & Cadenat, 1954

Atlantic rubyfish (En). Salmão de fundo (Cr). Peixe-rubi do Atlântico (Pt).

Frequent, caught at Maio, Sal, Santo Antão, and Santiago islands, between 100-400 m, but usually

from 150-250 m. *Size* (FL): 33 - 41 cm. *Remarks*: one individual caught below the deepest limit cited in CLOFETA (300 m).

Family Lutjanidae

***Apsilus fuscus*** Valenciennes in Cuvier & Valenciennes, 1830

African forktail snapper (En). Dobradão (Cr). Dobradão (Pt).

Frequent, caught at Fogo and Santo Antão islands, between 0-100 m. *Size* (FL): 32 - 38 cm.

***Lutjanus fulgens*** (Valenciennes in Cuvier & Valenciennes, 1830)

Golden african snapper (En). Goraz (Cr)

Frequent, caught at Santo Antão and Maio islands, between 0-50 m. *Size* (FL): 38 - 43 cm.

Family Haemulidae

***Parapristipoma humile*** (Bowdich, 1825)

Guinean grunt (En). Papagaio (Cr). Palhaço (Pt).

Frequent, caught at Sal and Santiago islands, Ilhéu Branco and Grande islets, between 0-150 m, but usually from 50-100 m. *Size* (FL): 24 - 37 cm. *Remarks*: 2 individuals caught below the deepest limit cited in CLOFETA (100 m).

***Pomadasys incisus*** (Bowdich, 1825)

Bastard grunt (En). Besugo (Cr). Roncador (Pt).

Frequent, caught at Maio island, between 0-50 m. *Size* (FL): 23 - 25 cm.

Family Sparidae

***Dentex macrophthalmus*** (Bloch, 1791)

Large-eye dentex (En). Goraz (Cr). Cachucho (Pt).

Frequent, caught at Boavista, Maio, Santo Antão, and São Vicente islands, between 100-500 m, but usually from 200-250 m. *Size* (FL): 17 - 33 cm.

***Lithognathus mormyrus*** (Linnaeus, 1758)

Streaped seabream (En). Sargo de areia (Cr). Ferreira (Pt).

Common, caught at Sal island, between 0-50 m. *Size* (FL): 25 - 28 cm.

***Pagellus acarne*** (Risso, 1827)

Axillary seabream (En). Besugo (Cr). Besugo (Pt).

Frequent, caught at Boavista, Maio, Sal, Santiago, Santo Antão, São Nicolau, and São Vicente islands, between 0-550 m, but usually from 200-300 m. *Size* (FL): 17 - 33 cm. *Remarks*: One specimen caught below the deepest limit cited in CLOFETA (500 m).

***Pagrus africanus*** Akazaki, 1962.

Southern common seabream (En). Pargo (Cr). Pargo (Pt).

Rare, one individual caught at Ilhéu Branco islet, between 100-150 m. Length (FL): 62 cm. *Remarks*: First record from Cape Verde islands (Fig. 12).

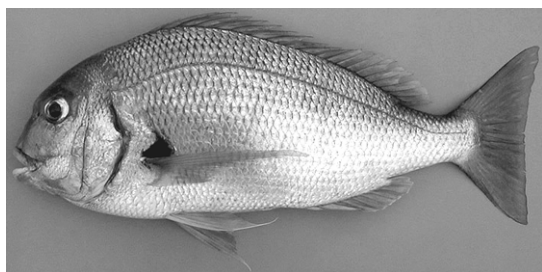


Fig. 12. New species recorded to Cape Verde - *Pagrus africanus* (Photo credits: PDuarte - ImagDOP).

***Spondylisoma cantharus*** (Linnaeus, 1758)

Black seabream (En). Ruta (Cr). Choupa (Pt). Common, caught at São Vicente island, and Ilhéu Branco islet, between 50-150 m. *Size* (FL): 36 - 48 cm.

***Virididentex acromegalus*** (Osório, 1911)

Bulldog dentex (En). Benteia (Cr). Common, caught at Maio, Sal, and Santo Antão islands, between 50 - 150 m. *Size* (FL): 34 - 41 cm. *Remarks*: Several specimens caught below the deepest limit cited in CLOFETA (60 m). A monospecific genus endemic to Cape Verde.

Family: Polynemidae

***Galeoides decadactylus*** (Bloch, 1795)

Lesser african threadfin (En). Barbo (Cr). Common, caught at Sal island, between 0-50 m. *Size* (FL): 28 - 29 cm.

Family: Labridae

***Bodianus scrofa*** (Valenciennes in Cuvier & Valenciennes, 1839)

Barred hogfish (En). Corvina (Cr). Peixe cão (Pt). Frequent, caught at Brava, Maio, Sal, Santo Antão, and São Vicente islands, and Ilhéu Branco and Grande islets, between 50 - 350 m, but usually from 150-200 m. *Size* (TL): 37 - 58 cm. *Remarks*: Two individuals caught below the deepest limit cited in CLOFETA (200 m). Eight fishes larger than the TL max. cited in FAO identification sheets (43 cm). Maximum length 58 cm (TL) (male, 3356 g, caught at the Branco islet)

***Bodianus speciosus*** (Bowdich, 1825)

Blackbar hogfish (En). Bedja (Cr). Peixe cão (Pt). Frequent, caught at Maio and Sal islands, and at Branco islet, between 0-100 m, but usually 0-50 m. *Size* (TL): 39 - 50 cm.

Family: Trachinidae

***Trachinus pellegrini*** Cadenat, 1937

Cape Verde weever (En). Aranha (Cr). Peixe aranha (Pt).

Common, caught at Fogo and São Vicente islands, and Nova Holanda seamount, between 100-150 m. *Size* (TL): 14 - 22 cm. .

Family: Chiasmodontidae

***Chiasmodon niger*** Johnson, 1864

Black shallower (En). Sapinho de fundura (Pt). Frequent, caught at Fogo island and Nova Holanda seamount, between 750-850 m. *Size* (TL): 12 - 12 cm.

Family: Gempylidae

***Gempylus serpens*** Cuvier, 1829

Snake mackerel (En). Common, caught at São Vicente island, between 650-700 m.

***Promethichthys prometheus*** (Cuvier in Cuvier & Valenciennes, 1832)

Roudi escolar (En). Peixe coelho (Pt). Frequent, caught at Brava, Fogo, Maio, Sal, Santiago, Santo Antão, São Nicolau, and São Vicente islands, Branco and Grande islets, and Nova Holanda seamount, between 100 - 1150 m, but usually from 500-550 m. *Size* (FL): 29 - 48 cm. *Remarks*: Three individuals caught below the deepest limit cited in FAO species catalogue (800 m) (NAKAMURA & PARIN, 1993).

***Ruvettus pretiosus*** Cocco, 1833  
Oilfish (En). Pinga-azeite (Cr). Escolar (Pt).  
Frequent, caught at Fogo, Maio, and Sal islands,  
Grande islet, and Nova Holanda seamount,  
between 450-800 m. *Size* (FL): 52 - 125 cm.

Family Xiphiidae

***Xiphias gladius*** Linnaeus, 1758  
Swordfish (En). Espadarte (Cr). Espadarte (Pt).  
Frequent, caught only at Santiago island, between  
650-700 m. Length (FL): 90 cm

#### ORDER PLEURONECTIFORMES

Family Paralichthyidae

***Syacium micrurum*** Ranzani, 1842  
Channel flounder (En). Carta lisa (Pt).  
Common, caught at Maio, Sal, and Santiago  
islands, between 0-100 m. *Size* (TL): 25 - 30 cm.

#### ORDER TETRAODONTIFORMES

Family Balistidae

***Balistes capriscus*** Gmelin, 1789  
Grey triggerfish (En). Fambil (Cr). Peixe porco  
(Pt).  
Frequent, caught at Maio, Santo Antão, and São  
Vicente islands, and at the Branco islet, between  
0-100 m. *Size* (TL): 34 - 49 cm. *Remarks*:  
Epipelagic, caught near surface.

***Canthidermis sufflamen*** (Mitchill, 1815)  
Spotted oceanic triggerfish (En). Fambil (Cr)  
Rare, one fish caught at Santo Antão island,  
between 50-100 m. Length (TL): 39 cm.  
*Remarks*: First record from Cape Verde islands.  
Not referred for the area in CLOFETA, but  
recorded by AFONSO et al. (1999) from São Tomé  
island (Gulf of Guinea).

Family Tetraodontidae

***Lagocephalus lagocephalus lagocephalus***  
Linnaeus (1758)  
Oceanic puffer (En). Peixe crup (Cr). Peixe sapo  
(Pt).  
Common, caught at Maio, between 0-50 m. *Size*  
TL): 38 - 44 cm.

***Sphoeroides marmoratus*** (Lowe, 1838)  
Guinean puffer (En). Peixe bola (Cr). Balão (Pt).  
Rare, one individual caught at Santo Antão  
island, between 50-100 m. Length (TL): 16 cm.

***Sphoeroides pachygaster*** (Müller & Troschel,  
1848)

Blunthead puffer (En). Balão (Pt).  
Common, caught at Nova Holanda seamount,  
between 50-150 m. *Size* (TL): 29 - 43 cm.

Family Diodontidae

***Chilomycterus reticulatus*** (Linnaeus, 1758)  
Spotfin burrfish (En). Porco-espinho (Pt).  
Common, caught at Santo Antão island, between  
50-100 m. *Size* (TL): 27 - 35 cm.

#### CONCLUSIONS AND DISCUSSION

Twenty bottom longline sets made from near the  
surface to 1200 m yielded 97 fish species  
belonging to 49 families. The sharks and rays  
(Chondrichthyes) were represented by 15 species,  
belonging to 8 families. The Centrophoridae, with  
four species, was the most specious. The bony  
fishes (Actinopterygii) included 82 species from  
41 families. The most specious families were the  
Carangidae, with 7 species, and the Scorpaenidae  
and Sparidae, each with 6 species.

Twelve species are, to our knowledge, new to  
the Cape Verde archipelago ichthyofauna:  
*Etmopterus princeps*, *Etmopterus pusillus*,  
*Gymnothorax maderensis*, *Myroconger*  
*compressus*, *Laemonema robustum*, *Beryx*  
*splendens*, *Scorpaena elongata*, *Serranus*  
*atricauda*, *Taractes rubescens*, *Taractichthys*  
*longipinnis*, *Pagrus africanus* and *Canthidermis*  
*sufflamen*. The frequent species, *Serranus*  
*atricauda*, has been misidentified as *Serranus*  
*cabrilla* by MONTEIRO (1998). The species  
*Laemonema robustum*, is not cited in CLOFETA  
for the area, and *Canthidermis sufflamen* has only  
recently been recorded from São Tomé island  
(Gulf of Guinea - CLOFETA area) by AFONSO et  
al. (1999).

Some species were shown to exceed the limits  
of the vertical distribution cited in CLOFETA, the  
FAO species identification sheets and FishBase.

Some individuals also exceeded the sizes previously recorded for the species, probably reflecting a lower fishing pressure, in particular, in the deeper waters of the Cape Verde islands (MENEZES 2003). The concept of species rareness used in this study could be a result of their scarceness in the region but could also be due to the selectivity of the fishing method used, number of sets, and the areas and the depths surveyed among other causes. For this reason, the relative abundance of the species presented from the Cape Verde region, is only valid for this particular long-line survey, which for certain species, may or may not reflect their real abundance in the nature.

#### ACKNOWLEDGEMENTS

The authors are grateful to many people who contributed in various ways during several phases of the project. Special thanks are given to the crew members of the R/V ARQUIPÉLAGO and to Captain Fernando Serpa for their professional efforts and his knowledge of the Cape Verde islands, and to José Branco, Vito Melo, Péricles Martins, João “Badio” by their participation in the fieldwork. Several technicians from DOP and INDP are acknowledged for their important contribution to the project.

The survey would not have been possible without the support from Dr. Ricardo Serrão Santos the Director of DOP and Dr. Edério Almada, the former President of INDP, Mindelo, Cape Verde

The participants of the project wish to thank the Azorean Government for the financial support, namely to the former Regional Director of Fisheries Dr. Helder M. Silva and the Regional Director of Science and Technology, Prof. Dr. Henrique Shandler.

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Accepted, 3 November 2004.