

# By-catch composition of the striped soldier shrimp *Plesionika edwardsii* (Crustacea: Decapoda: Pandalidae) experimental fishery in the Cape Verde Islands

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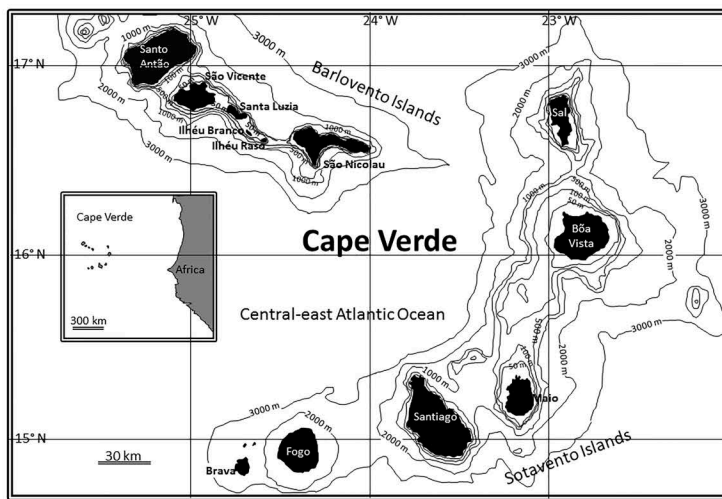
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This work focuses on the by-catch composition of *Plesionika edwardsii* experimental fishery in the Cape Verde Islands. Obtaining information on abundance, composition and lifecycle of a diversity of species involved in this potential fishery is useful, in order to ensure its sustainable development under an ecosystem approach. The first step towards this goal is the description of catches.

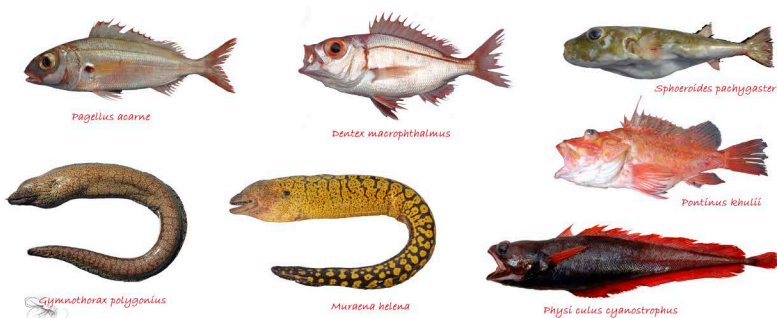
Four 15-day research surveys were conducted on board the R/V *Professor Ignacio Lozano*: around São Vicente and Santa Luzia islands (April 2010), Santiago island (November 2011), Boa Vista island (March 2012) and Sal and São Nicolau islands (July 2012). The working depths ranged from 66 to 458 m. A standardized innovative fishing gear was used, so-called multiple semi-floating shrimp traps (MSFST). Each fishing line was composed by 40-65 traps operating around 2.4 m above the seafloor, using *Decapterus macarellus* (Carangidae) as unique bait of the traps.

MSFST is a passive fishing system that allows catch and release a significant part of the unwanted catches, mainly Chondrichthyes and Anguilliformes, reducing the fishing impact on many non-target species.

The main by-catch was composed of 34 species belonging to three groups including Crustacea (4 families and 8 species), Chondrichthyes (three families and three species) and Osteichthyes (16 families and 23 species). *Plesionika edwardsii*, the target species of this fishery, represented 97.8% of the catches in terms of abundance and 40.1% in biomass.



Group	Family	Species	% no. indiv.	% weight
Crustacea	Diogenidae	<i>Dardanus arrosor</i>	0.21	0.02
	Dromiidae	<i>Stemodromia spinirostris</i>	0.16	0.04
	Homolidae	<i>Paromola cuvieri</i>	0.02	0.10
	Pandalidae	<i>Hetero carpus ensifer</i>	2.23	0.06
		<i>Plesionika ensis</i>	21.26	0.30
		<i>Plesionika martia</i>	0.42	0.01
		<i>Plesionika narval</i>	16.96	0.27
		<i>Plesionika williamsi</i>	0.10	0.00
Chondrichthyes	Centrolophidae	<i>Centrolophus</i> sp.	0.93	7.75
	Etmopteridae	<i>Etmopterus</i> sp.	0.09	0.07
	Triakidae	<i>Mustelus mustelus</i>	0.24	4.04
Osteichthyes	Caproidae	<i>Antigonia capios</i>	0.19	0.01
	Congridae	<i>Conger conger</i>	0.40	2.89
	Epinephelidae	<i>Epinephelus goreensis</i>	0.03	0.17
	Haemulidae	<i>Parapristipoma humile</i>	0.17	0.39
	Labridae	<i>Acantholatirus paoloni</i>	0.24	0.43
		<i>Bodianus scrofa</i>	0.09	0.75
		<i>Lappanella fasciata</i>	0.10	0.03
	Moridae	<i>Physiculus cyanostrophus</i>	7.73	5.09
	Muraenidae	<i>Gymnothorax maderensis</i>	0.16	1.09
		<i>Gymnothorax polygonus</i>	1.31	5.55
		<i>Muraena helena</i>	3.18	21.72
	Myxocoelidae	<i>Myxocoelus compressus</i>	0.55	0.65
	Ophichthidae	<i>Echelus myrus</i>	0.31	0.18
	Phycidae	<i>Phycis phycis</i>	0.02	0.18
	Scorpaenidae	<i>Neomeinthe flogori</i>	0.10	0.93
		<i>Pontinus kuhlii</i>	4.01	7.72
	Serranidae	<i>Anthias anthias</i>	0.07	0.03
		<i>Serranus atricauda</i>	0.66	0.80
	Sebastidae	<i>Helicolenus dactylopterus</i>	0.02	0.12
	Sparidae	<i>Dentex macrophthalmus</i>	15.22	9.50
		<i>Pagellus acarne</i>	16.61	20.12
	Synbranchidae	<i>Synbranchus affinis</i>	0.05	0.03
	Tetraodontidae	<i>Sphoeroides pachygaster</i>	4.15	8.52



By-catch represented 59.9% of total catches in terms of biomass. Osteichthyes (87.5%) were the dominant group and was represented by the following main families: Sparidae (33.9%), Moridae (32.5%), Muraenidae (32.5%), Scorpaenidae (9.9%) and Tetraodontidae (9.8%). Chondrichthyes (11.6%) were composed by Centrolophidae (65.3%) and Triakidae (34.1%). Finally, Crustacea (1.9%) were chiefly composed by Pandalidae (79.1%).

However, different families represented by specific species were found to be dominant around each island. Sparidae were the dominant family represented by *Pagellus acarne* (46.2% of total by-catch) at São Vicente, and by *Dentex macrophthalmus* (42.6%) at Boa Vista. Tetraodontidae with *Sphoeroides pachygaster* (25.9%) and Sparidae with *P. acarne* (25.1%) were the co-dominant families in the by-catch around Santa Luzia. Muraenidae were the dominant family represented by *Gymnothorax polygonus* (69.4%) at Sal, and by *Muraena helena* (63.4%) at São Nicolau. Finally, Scorpaenidae with *Pontinus kuhlii* (22.3%) and Moridae with *Physiculus cyanostrophus* (22.1%) were the co-dominant families of the by-catch around Santiago.

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