

Demersal and deep-sea fish survey on four Atlantic seamounts located south of the Azores: Preliminary results

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Summary

Deep-sea living resources have gained importance over the last decades in commercial fisheries as a result of over-exploitation of the coastal stocks. In order to achieve a properly manage of these fisheries, it is essential to know their distribution and to understand the ecological and biological features of this poorly studied deep-sea species. The 2007 DEECON fishing cruise survey, organized under the DEECON project ("Unravelling population connectivity for sustainable fisheries in the Deep Sea"), aimed to collect and study deep-sea fishes from four Atlantic seamounts located south of the Azores (Great Meteor, Irving, Plato and Atlantis).

The cruise survey used two longline types. One designed to catch demersal fish species and the other more adapted to catch the black-scabbardfish and deep-water sharks. A total of 7 longline sets were deployed covering a bathymetric range between 250 and 2000 meters.

A total of 33 teleosts and 18 elasmobranchs species were collected. The teleosts fishes clearly dominated the catches in number and *Helicolenus dactylopterus dactylopterus* was the predominant species. However with the depth increment the elasmobranchs catches became more relevant. *Deania cf. hystricosa* and *Centroscymnus coelolepis* were the predominant species caught at higher depths. Several invertebrates were caught as by-catch, such as cold water corals, sponges, crustaceans, echinoderms and molluscs. Most of them were identified and preserved for future studies.

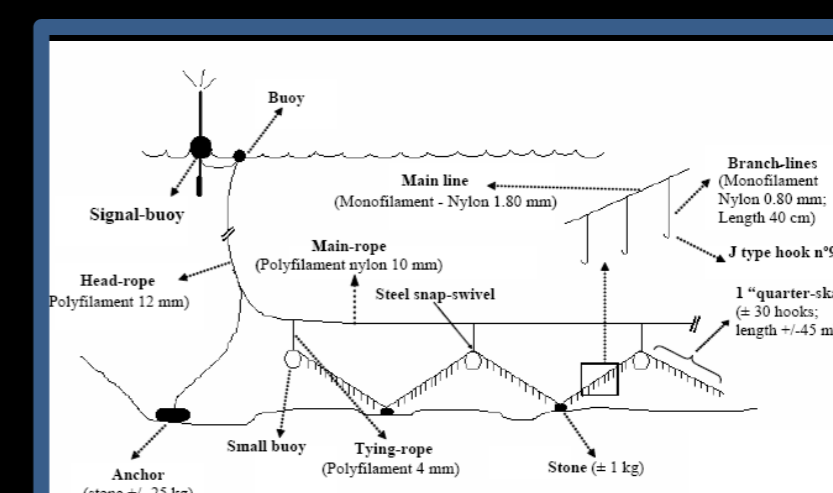
Methods



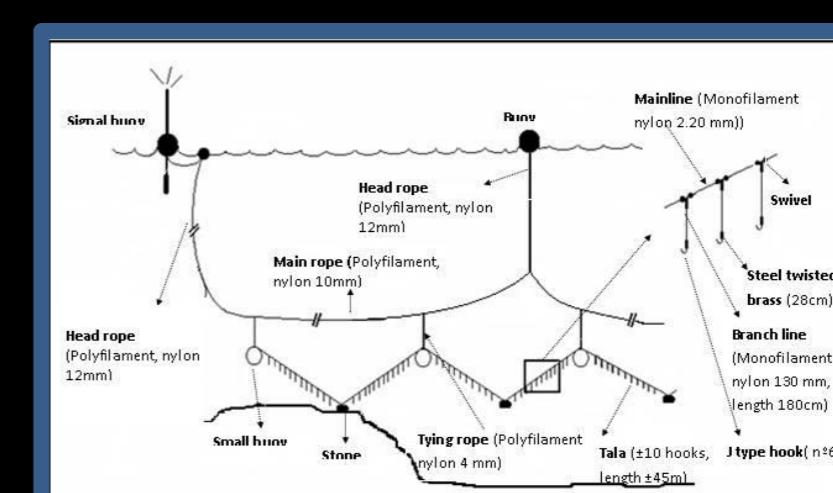
Geographic location of the sampled seamounts: Great Meteor, Irving, Plato and Atlantis seamount

Longline sets characteristics

Station code/Gear code	Date	Local	Initial set position		Final set position		Minimum depth (m)	Maximum depth (m)	Total no. of hooks (n)
			Lat. (N)	Long. (W)	Lat. (N)	Long. (W)			
GMETEOR-01-V07 / LL1	06-07-2007	Great Meteor Bank	30°06'	28°51'	30°11'	28°51'	376	1246	4288
GMETEOR-02-V07 / LL2	07-07-2007	Great Meteor Bank	30°11'	28°54'	30°11'	28°50'	726	1983	1506
IRVING-01-V07 / LL1	08-07-2007	Irving Seamount	32°00'	27°58'	31°58'	27°53'	289	839	4392
IRVING-02-V07 / LL2	09-07-2007	Irving Seamount	32°14'	28°08'	32°12'	28°07'	1223	1983	1118
PLATO-01-V07 / LL1	10-07-2007	Plato Seamount	33°18'	29°54'	33°15'	29°15'	716	1532	1424
ATLANTIS-01-V07 / LL1	11-07-2007	Atlantis seamount	34°07'	30°15'	34°07'	30°20'	289	1190	4507
ATLANTIS-02-V07 / LL2	12-07-2007	Atlantis seamount	34°18'	30°18'	34°15'	30°19'	651	1784	511



Longline 1 (LL1)



Longline 2 (LL2)

Seven longline stations

Two longline types used:

Longline 1: at bottom, static, deployed down the seamount slopes, targeting demersal and deep-water species

Longline 2: drifting in the mid-water near the seamount slopes, targeting the black-scabbardfish and deep-water sharks species.

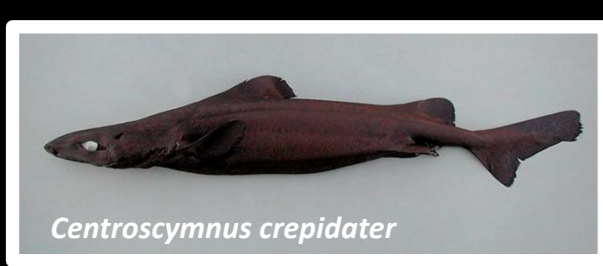
Species list and catch results

33 teleosts and 18 elasmobranchs species were preliminary recorded, however some species need to be confirmed

several species were recorded for the first time to the sampled seamounts (e.g. *Coryphaenoides guentheri*)

regardless the similarities with the Azores and Madeira ichthyofauna, preliminary results suggest the existence of a latitudinal faunistic transition between the southern and northern sampled seamounts specially at shallower depths

genetic analysis of the collected specimens of the genus *Aphanopus* are under course to verify the possibility of co-occurrence of the two species *A. carbo* and *A. intermedius*



Family	Fish species	ATLANTIS		GREAT METEOR		IRVING		PLATO		Total weight (Kg)	Total no.
		kg	no.	kg	no.	kg	no.	kg	no.		
Teleosts											
Alepocephalidae	<i>Alepocephalus agassizii</i>										1
Aulopodidae	<i>Aulopus filamentosus</i>					4	7			4	7
Berycidae	<i>Beryx splendens</i>			3	4	2	9			4	13
	<i>Beryx decadactylus</i>	2	1	15	8					17	9
Carangidae	<i>Trachurus picturatus</i>	1	2	0,153	1	1	3			2	6
Chiasmodontidae	<i>Chiasmodon niger</i>			0,095	3			0	9	0,394	12
Congridae	<i>Conger conger</i>	16	5			11	10			26	15
Coryphaenidae	<i>Coryphaena hippurus</i>			6	4	1	1			7	5
Diodontidae	<i>Diodon hystrix</i>	2	1	2	1					4	2
Gempylidae	<i>Ruvettus pretiosus</i>					2	1			2	1
Macrouridae	<i>Caelorhynchus caelorhynchus caelorhynchus</i>	0,167	1							0,167	1
	<i>Nezumia aequalis</i>					1	4			1	4
	<i>Coryphaenoides guentheri</i>			18	7	5	2			23	9
Moridae	<i>Mora moro</i>	71	41	9	7	8	5	48	30	136	83
	<i>Lepidion guentheri</i>			2	2					2	2
	<i>Physiculus dalwigki</i>	0,111	1							0,111	1
	<i>Antimora rostrata</i>			3	3					3	3
	<i>Laemonema sp.</i>					0,166	2			0,166	2
Muraenidae	<i>Gymnothorax maderensis</i>					3	7			3	7
Phycidae	<i>Phycis phycis</i>	2	1	19	28	113	129			135	158
Polymixiidae	<i>Polymixia nobilis</i>	0,254	1			0,212	1			0,466	2
Polyprionidae	<i>Polyprion americanus</i>	35	6							35	6
Scombridae	<i>Scomber japonicus</i>			3	16	21	57			24	73
Scorpaenidae	<i>Pontinus kuhlii</i>					1	1			1	1
Sebastidae	<i>Helicolenus dactylopterus dactylopterus</i>	79	161	36	58	86	120			202	339
Setarchidae	<i>Setarches guentheri</i>			1	4	0,092	1			1	5
Synaphobranchidae	<i>Synaphobranchus cf. kaupi</i>	1	11			1	8	6	35	9	54
	<i>Synaphobranchus cf. affinis</i>			2	9					2	9
	<i>Synaphobranchus cf. brevadorsalis</i>			0,324	1					0,324	1
Trichiuridae	<i>Aphanopus cf. carbo</i>	3	2			35	21	29	13	67	37
	<i>Lepidopus caudatus</i>										4
	<i>Benthodesmus elongatus simonyi</i>			1	1					1	1
Xiphiidae	<i>Xiphias gladius</i>					10	1			10	1
Elasmobranchs											
Centroporidae	<i>Centroporus niakang</i>	28	1							28	1
	<i>Centroporus squamosus</i>	73	5			11	1			84	6
	<i>Deania cf. hystricosa</i>	143	33	308	84	10	2	102	35	564	154
	<i>Deania profundorum</i>			20	8	39	13			59	21
Chimaeridae	<i>Hydrolagus affinis</i>			17	2					17	2
Dalatiidae	<i>Centroscymnus coelolepis</i>			194	29	204	34	65	9	463	72
	<i>Centroscymnus cryptacanthus</i>			11	3	8	4			20	7
	<i>Centroscymnus crepidater</i>	51	3	35	4					86	7
	<i>Dalatia licha</i>			4	3			1	2	5	5
	<i>Etmopterus princeps</i>			0	1	1	3	1	4	3	8
	<i>Etmopterus pusillus</i>	9	1			15	2			24	3
	<i>Scymnodon obscurus</i>					0,092	1			0	1
	<i>Squaliolus laticaudus</i>					5	1			5	1
Hexanchidae	<i>Heptanchias perlo</i>										1
Pseudotriakidae	<i>Pseudotriakis microdon</i>			5	1					5	1
Rajidae	<i>Dipturus batis</i>	6	2			2	1			8	3
	<i>Raja clavata</i>					9	3			9	3
	<i>Raja maderensis</i>			10	4	2	1			12	5
		521	280	726	298	613	460	253	137	2113	1175

