Poseidon 384

Cruise Report

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Cruise Report R.V. *Poseidon*, cruise POS 384

Funchal 08.05.09 - Faro 25.05.09

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Scope of the cruise

Seamounts are commonly considered as biological "hotspots", because they often harbour enhanced biomass, biodiversity and a high number of endemic species. However, recently it has become evident that this statement should not be generalized. For example, studies in the framework of the EU project OASIS indicate that topographically similar seamounts in the Horseshoe Seamount Chain may differ strongly with respect to their standing stocks of benthic and pelagic fauna. The reasons why some seamounts show hotspot properties, while others do not, are still not clear.

R.V. *Poseidon* cruise 384 aimed to help identifying those factors and processes, which control the characteristics of the seamount ecosystems. Physical, biogeochemical and biological samples were taken at Ampère Seamount and, for comparison, at Seine Seamount and Gettysburg Seamount, in order to study the following main objectives:

- Flow field characteristics and distribution of water masses
- Quantity, quality and fluxes of particulate organic material
- Distribution and composition of phytoplankton and nutrients
- Composition and distribution of zooplankton and micronekton
- Composition, distribution and abundance of benthic meio-, macro- and megafauna
- Characteristics of the pelagic and demersal fish fauna

The cruise was a pilot cruise for a larger expedition planned in 2010 and was used also for testing different sampling designs, considering in particular the small-scale distribution of zooplankton in relation to the topography.

Cruise narratives

After loading and assembling the scientific equipment on 7 May, *Poseidon* left the port of Funchal on 8 May. The first station near Seine Seamount (southern far field station I) was reached in the morning of 9 May, and the scientific work started with a CTD/rosette cast for measuring temperature, salinity, oxgen and chl a, and for sampling water for the analysis of organic particles and phytoplankton. A 1m^2-double-MOCNESS haul, covering the water layers down to 1000 m, completed the sampling programme at this location. The 1m^2-

double-MOCNESS (Fig.1) is a multiple plankton net with a total of 20 nets, which can be opened and closed sequentially to sample zooplankton at different depths; mesh size was 333 μm.

Fig. 1: Recovery of the 1m^2-double-MOCNESS

Poseidon then sailed to the central part of Seine Seamount, where we deployed a set of fish traps at a water depth of 170 m. Some tests of line and hook fishing yielded no results, and the traps, which were recovered after a soak time of 3 hours, were also empty except for a large hermit crab.

After a CTD/rosette cast on the summit plateau of Seine Seamount, a series of van Veen grab hauls for sampling meiofauna and macrofauna was performed at various locations and depths. It turned out that sampling with the van Veen grab was possible only to a depth of ca 500 m; below this depth bottom contact could not be monitored reliably.

On 10 May we started with some CTD/rosette casts and then performed two MOCNESS hauls, with a grab in between. Further CTD casts, grab hauls and line and hook fishing were carried out during the night, before the fish traps were deployed again in the morning of 11 May. During the day, a series of vertical multinet hauls was performed above the summit plateau (170 m deep), at the edge of the plateau (300 m) and above the slope (1000 m). The multinet has a 0.25 m^2 opening and carries 5 nets, which can be opened and closed sequentially. The traps were recovered after 7 hours. Despite the longer soak time, again no fish were caught. Further grab hauls and trials with line and hook fishing completed work at Seine Seamount.

On the way to Ampère Seamount a multinet haul was made to a depth of 800 m. We used a small mesh of 55 μm in order to obtain plankton samples for the Marine Geology Department of INETI in Lisbon. We arrived at Ampère Seamount at noon of 12 May and started with a series of CTD/rosette casts along the western slope of the seamount, followed by a MOCNESS transect across the central part and a series of grab stations during the night. After two daylight MOCNESS hauls and the deployment of the trap set on 13 May, further series of grab samples and CTD/rosette casts were made. Line and hook fishing in the evening was very successful with several specimens of silver scabbardfish (*Lepidopus caudatus)*.

The fish traps were recovered in the morning of 14 May and deployed again at noon after rebaiting. The catch yielded one moray eel and several invertebrates, mainly crustaceans and polychaetes. A series of multinet hauls followed covering five stations across the seamount between the 1000 m contours to the south and to the north. The sampling programme continued with grab hauls, line and hook fishing, a MOCNESS tow, and CTD/Rosette casts.

An attempt to recover the fish traps was made in the morning of 15 May. However, despite an intensive search in the area of the mooring site, the surface buoy of the trap set could not be retrieved. A further search during darkness, hoping to spot the flash light of the mooring, was to no avail, and the traps had to be abandoned.

Station work continued with a MOCNESS tow, multinet hauls and grab samples. For the night a further series of multinet hauls across the seamount was planned, but meanwhile the ship was rolling heavily due to a strong swell, and after the first multinet deployment failed, all work was cancelled for the night.

The swell being still high, we started station work again in the morning of 16 May with a CTD/rosette. After the CTD, a first DOS transect was planned (DOS: Deep-sea Observation System, an altimeter-controlled camera sled, Fig. 2). The DOS carried a downwards looking still camera with a capacity of 800 frames. It was triggered by a bottom contact switch every time a weight, which was hanging under the gear at a 3 m long line, touched the bottom. The DOS was towed at a speed of ca 0.5 kn. Upon closing in on the seafloor, the altimeter turned out to be malfunctioning below 3 mab, and the deployment was aborted. A second attempt yielded the same result, so we continued with some line and hook fishing and further CTD casts.

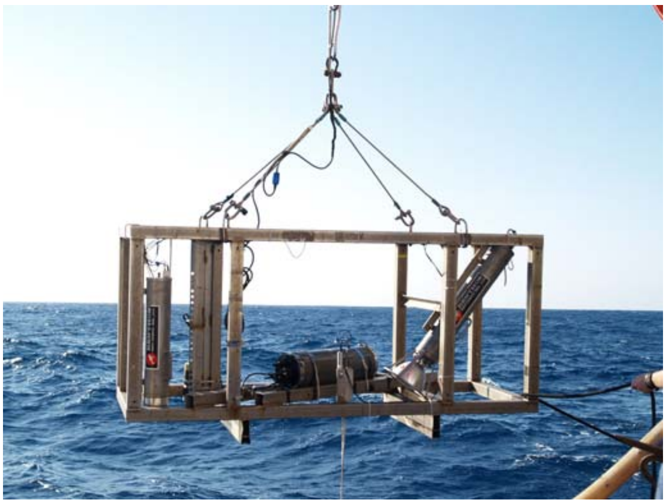

Fig. 2: DOS: Deep-Sea Observation system

A first MOCNESS haul in the morning of 17 May had to be aborted because the communication between underwater and deck unit was lost. A second tow was successful despite some short interruptions of the data flow. After the MOCNESS, a 2 m beamtrawl was towed at the northern edge of the upper erosion terrace (water depth 120-150 m). Although the gear toppled over on the bottom, we recovered a rich catch with different species of corals, numerous sponges, crustaceans and a few fish (Fig. 3). Meanwhile the altimeter of the DOS was exchanged, and the next deployment of the instrument was successful, covering a short transect in the valley between the summit and the western elevation of Ampère Seamount. Two grab series to the west of the valley followed, before a further night tow of the MOCNESS was carried out.

Fig. 3: Fish, corals, sponges and other invertebrates from the beamtrawl

After a CTD/rosette cast, the multinet was deployed in the morning of May 18. The first haul to 300 depth was successful, but during the second haul to 1000 m the electrical connection got lost at 700 m. It turned out that due to the heavy rolling of the ship, one of the lines holding the weight of the net buckets had entangled with the connecting cable and torn off the connector. A new connector was attached to the conducting cable, and we continued with CTD/rosette casts at the eastern and northern slopes of the seamount. Because the swell was still very high and impaired a safe operation of pelagic and benthic sampling gear, all station work was cancelled for the night.

Sea conditions improved slightly on 19 May, and we continued with two MOCNESS hauls, a DOS transect in the valley, and a CTD/rosette cast at the western slope. A further MOCNESS was towed during the night. On 20 May we had another beamtrawl haul. After some modifications to the attachment of the bridle, the position of the trawl remained stable during lowering and on the bottom. Unfortunately, the trawl hit an obstacle on the ground, the top beam was heavily bent and the net was torn, so that most of the catch could escape. We could, however, recover a few corals and one boar fish (*Capros aper*).

Before leaving Ampère Seamount, we had two CTD casts in a canyon-like structure to the south of the Ampère peak. On the way to the Ampère reference station a fine-mesh multinet profile was sampled for INETI, Lisbon. On arrival at the reference station, we started with a night series of 300 μm multinet hauls, followed by CTD/rosette casts and a daylight multinet series. Station work was finished in the morning of 21 May, and we headed for the third study area at Gettysburg Seamount. Halfway between Ampère and Gettysburg we took a multinet profile for INETI and sampled deep ocean water with the CTD/rosette.

Station work at Gettysburg Seamount started in the morning of 22 May with another fine mesh multinet profile for INETI, before we moored a fishing set comprising a baited trap and several hooks on a horizontal line. Because the weather forecast indicated worsening conditions for the night and the following day, the fishing set was recovered already in the afternoon, after a DOS transect and a CTD/rosette profile. Neither the trap nor the hooks caught fish. We continued with multinet profiles and two DOS transects, the second of which had to be aborted after water pentrated into a connecting cable. The remainder of the night was used for several grab stations and a CTD/rosette cast.

In the morning of 23 May wind speed had increased to 7 Bft with rough seas, and we decided to finish station work and head for Faro. We arrived at the entrance of the channel to Faro in the morning of 24 May, which gave us the opportunity for a "photo safari" around *Poseidon* by rubber boat. The pilot arrived at 1430 h, and at 1545 *Poseidon* was finally berthed in the port of Faro.

Despite some problems due to the sea conditions or technical failures, the cruise was very successful and will certainly lead to new insight in the ecology of seamounts. The samples seem to confirm our first impression from cruise POS322 that Ampère Seamount is much more productive than Seine Seamount. This is also supported by the apparent attraction of Ampère to fishery, despite its remoteness. All the time 2-3 Portuguese fishing boats could be observed in the central part of the seamount, using longlines for catching silver scabbardfish. Sometimes there was a risk of their activities interfering with our sampling programme, but thanks to our colleague from the University of the Algarve, potential problems could usually be solved in advance by talking directly to the fishermen.

Appendix 1: List of participants

Name	First name	Affiliation	Task
Christiansen	Bernd	UHH/IHF	PI
Brachvogel	Rini	UHH/IHF	zooplankton
Denda	Anneke	UHH/IHF	zooplankton
Eberle	Sabine	UHH/IHF	zooplankton
Kaufmann	Manfred	UMA	phytoplankton
Koller	Stefan	DZMB	meiofauna
Kuhnert	Rosa Jutta	DZMB	meiofauna
Martin	Bettina	UHH/IHF	zooplankton
Oliveira	Frederico	UALG	fish/megafauna
Peine	Florian	URO	biogeochemistry
Springer	Barbara	URO	biogeochemistry

UHH/IHF	Universität Hamburg, Institut für Hydrobiologie und Fischereiwissenschaft
UMA	University of Madeira Marine Biology Station of Funchal
DZMB	Forschungsinstitut Senckenberg, Abt. Deutsches Zentrum für Marine Biodiversität
UALG	Universidade do Algarve, Centre of Marine Sciences
URO	Universität Rostock, Institut für Aquatische Ökologie – Meeresbiologie

Appendix 2: List of stations

Station	Year	Month	Day	Time	Device	LAT deg	LON deg	Depth m
188-1	2009	5	9	05:14	CTD/ Ro	33.33472	-13.99885	4401
188-2	2009	5	9	07:28	Secchi-disk	33.34163	-13.98968	4400
188-3	2009	5	9	07:47	CTD/ Ro	33.34183	-13.98945	4401
189-1	2009	5	9	08:34	MOC-D	33.34152	-13.98928	4400
190-1	2009	5	9	15:43	deployment traps	33.7664	-14.36605	174
190-2	2009	5	9	16:05	line and hook	33.76813	-14.3666	173
190-3	2009	5	9	18:37	recovery traps	33.76597	-14.36438	172
190-4	2009	5	9	19:04	CTD/ Ro	33.76647	-14.3651	171
190-5	2009	5	9	19:35	BG	33.7655	-14.36572	173
190-6	2009	5	9	20:01	BG	33.76613	-14.36595	171
191-1	2009	5	9	20:49	BG	33.76618	-14.43217	179
192-1	2009	5	9	21:19	BG	33.76748	-14.45175	226
192-2	2009	5	9	22:05	BG	33.76795	-14.46627	1326
192-3	2009	5	9	22:54	BG	33.76828	-14.46678	1329
193-1	2009	5	10	00:26	CTD/ Ro	33.77595	-14.52378	2829
194-1	2009	5	10	04:08	CTD/ Ro	33.76845	-14.37213	175
195-1	2009	5	10	05:25	CTD/ Ro	33.72098	-14.30738	1323
196-1	2009	5	10	06:17	MOC-D	33.71878	-14.30363	1514
197-1	2009	5	10	11:30	BG	33.81207	-14.4125	1455
198-1	2009	5	10	11:30	MOC-D	33.81207	-14.4125	1455
199-1	2009	5	10	18:43	BG	33.81058	-14.40845	604
199-2	2009	5	10	19:07	BG	33.81172	-14.40822	623
199-3	2009	5	10	19:31	BG	33.8121	-14.40992	645
199-4	2009	5	10	20:21	CTD/ Ro	33.81065	-14.40647	550
200-1	2009	5	10	22:04	CTD/ Ro	33.89978	-14.33243	554
201-1	2009	5	11	00:24	CTD/ Ro	33.77205	-14.23352	808
202-1	2009	5	11	03:17	CTD/ Ro	33.68357	-14.37527	2712
203-1	2009	5	11	05:25	CTD/ Ro	33.79215	-14.39928	2712
203-2	2009	5	11	05:53	BG	33.7946	-14.39513	2712
203-3	2009	5	11	06:28	line and hook	33.79758	-14.39288	2712
203-4	2009	5	11	07:46	line and hook	33.8044	-14.38578	2712
203-5	2009	5	11	08:55	deployment traps	33.7914	-14.4051	2712
203-6	2009	5	11	09:17	MSN	33.7914	-14.39937	2712
204-1	2009	5	11	10:13	MSN	33.76627	-14.36753	2712
205-1	2009	5	11	11:11	MSN	33.72488	-14.31152	
205-2	2009	5	11	12:26	MSN	33.72258	-14.31288	
206-1	2009	5	11	13:53	line and hook	33.79093	-14.39983	
206-2	2009	5	11	15:30	recovery traps	33.7893	-14.40562	
207-1	2009	5	11	15:30	BG	33.7893	-14.40562	
207-2	2009	5	11	17:10	BG	33.81437	-14.35355	
207-3	2009	5	11	17:43	BG	33.81323	-14.35623	
208-1	2009	5	11	18:27	BG	33.8429	-14.34557	
208-2	2009	5	11	18:54	line and hook	33.8415	-14.34572	
208-3	2009	5	11	20:19	line and hook	33.84167	-14.34518	
209-1	2009	5	11	21:22	BG	33.86062	-14.34007	
209-2	2009	5	11	21:59	BG	33.87058	-14.32642	
210-1	2009	5	12	07:04	MSN	34.60035	-13.28535	
211-1	2009	5	12	11:43	CTD/ Ro	35.02333	-13.39163	

211-2	2009	5	12	12:39	CTD/ Ro	35.0231	-13.39177	
211-3	2009	5	12	12:57	CTD/ Ro	35.02448	-13.39222	
211-4	2009	5	12	14:43	CTD/ Ro	35.02897	-13.38722	
212-1	2009	5	12	15:54	CTD/ Ro	35.03013	-13.27898	
213-1	2009	5	12	18:08	CTD/ Ro	35.04002	-13.14875	
214-1	2009	5	12	20:10	CTD/ Ro	35.04445	-13.0191	
215-1	2009	5	12	22:09	MOC-D	35.00038	-12.86908	
216-1	2009	5	13	01:48	BG	35.10032	-12.90752	
216-2	2009	5	13	02:54	BG	35.09707	-12.91665	
217-1	2009	5	13	05:39	BG	35.07757	-12.89303	
217-2	2009	5	13	05:51	BG	35.0772	-12.89158	
217-3	2009	5	13	06:03	BG	35.07648	-12.89003	
218-1	2009	5	13	07:34	MOC-D	35.00998	-12.87037	
219-1	2009	5	13	12:40	deployment traps	35.05998	-12.88325	106
220-1	2009	5	13	13:53	MOC-D	35.01443	-12.87207	
221-1	2009	5	13	17:49	BG	35.08123	-12.88435	396
221-2	2009	5	13	18:03	BG	35.0806	-12.88363	387
221-3	2009	5	13	18:17	BG	35.08005	-12.88287	341
221-4	2009	5	13	18:47	BG	35.07628	-12.9047	101
221-5	2009	5	13	18:51	BG	35.07577	-12.90463	102
221-6	2009	5	13	18:57	BG	35.07553	-12.90492	100
221-7	2009	5	13	19:21	line and hook	35.07468	-12.90557	106
222-1	2009	5	13	22:08	CTD/ Ro	35.1742	-12.9217	2431
222-2	2009	5	13	23:03	CTD/ Ro	35.1748	-12.92305	2435
222-3	2009	5	14	00:51	CTD/ Ro	35.17475	-12.92183	2435
223-1	2009	5	14	01:33	CTD/ Ro	35.14158	-12.9166	2002
224-1	2009	5	14	05:38	BG	35.06095	-12.85793	494
224-2	2009	5	14	05:56	BG	35.06007	-12.8549	509
224-3	2009	5	14	06:26	BG	35.06083	-12.85697	501
224-4	2009	5	14	06:41	BG	35.05923	-12.85568	516
225-1	2009	5	14	07:21	line and hook	35.0597	-12.87968	102
225-2	2009	5	14	08:44	recovery traps	35.05497	-12.889	115
226-1	2009	5	14	09:12	MSN	35.02587	-12.88382	1011
226-2	2009	5	14	10:30	MSN	35.02673	-12.88372	936
226-3	2009	5	14	10:59	MSN	35.02688	-12.8839	927
226-4	2009	5	14	11:57	MSN	35.02657	-12.88547	1541
227-1	2009	5	14	12:36	MSN	35.0431	-12.88728	166
227-2	2009	5	14	13:03	MSN	35.04368	-12.88728	145
227-3	2009	5	14	13:22	MSN	35.04407	-12.8866	134
228-1	2009	5	14	13:54	deployment traps	35.04292	-12.89265	132
229-1	2009	5	14	14:23	MSN	35.06217	-12.8917	126
229-2	2009	5	14	14:40	MSN	35.06195	-12.89017	125
229-3	2009	5	14	14:59	MSN	35.06167	-12.88925	115
230-1	2009	5	14	15:29	MSN	35.07827	-12.8947	220
230-2	2009	5	14	15:53	MSN	35.07897	-12.89313	250
231-1	2009	5	14	16:32	MSN	35.10247	-12.902	842
232-1	2009	5	14	18:35	BG	35.06678	-12.926	344
232-2	2009	5	14	18:45	BG	35.0655	-12.92403	313
233-1	2009	5	14	19:14	BG	35.04882	-12.92285	347
233-2	2009	5	14	19:45	line and hook	35.0549	-12.90947	170
234-1	2009	5	14	20:56	MOC-D	35.01683	-12.90453	1004
235-1	2009	5	15	01:14	CTD/ Ro	35.09492	-12.76368	n.a.
235-2	2009	5	15	02:17	CTD/ Ro	35.09437	-12.76402	n.a.
235-3	2009	5	15	04:03	CTD/ Ro	35.09483	-12.76403	2533

236-1	2009	5	15	05:11	CTD/ Ro	35.0581	-12.84342	1013
237-1	2009	5	15	07:56	recovery traps	35.04158	-12.89388	137
238-1	2009	5	15	08:53	MOC-D	34.99822	-12.90922	1960
238-2	2009	5	15	12:53	MSN	35.11555	-12.91403	1340
238-3	2009	5	15	14:06	MSN	35.11088	-12.92585	789
238-4	2009	5	15	14:45	MSN	35.10662	-12.92908	767
238-5	2009	5	15	15:29	MSN	35.11755	-12.91193	1374
239-1	2009	5	15	17:26	BG	35.04227	-12.86868	122
239-2	2009	5	15	17:51	BG	35.03663	-12.85617	513
239-3	2009	5	15	18:36	BG	35.0454	-12.8656	230
239-4	2009	5	15	19:14	line and hook	35.05122	-12.87573	60
240-1	2009	5	15	20:25	MSN	35.02657	-12.88423	903
241-1	2009	5	16	07:09	CTD/ Ro	35.05885	-12.93787	491
242-1	2009	5	16	08:23	DOS	35.04262	-12.88093	152
242-2	2009	5	16	09:04	DOS	35.05852	-12.94142	491
243-1	2009	5	16	09:29	line and hook	35.06872	-12.9181	222
243-2	2009	5	16	10:34	line and hook	35.07507	-12.90658	120
244-1	2009	5	16	17:00	CTD/ Ro	35.05892	-12.89232	125
245-1	2009	5	16	18:12	line and hook	35.05482	-12.88015	134
246-1	2009	5	16	22:54	CTD/ Ro	35.09257	-12.76703	1538
246-2	2009	5	16	23:54	CTD/ Ro	35.09167	-12.76547	2480
246-3	2009	5	17	01:29	CTD/ Ro	35.09283	-12.7671	2498
247-1	2009	5	17	06:58	MOC-D	34.95892	-12.84133	3477
247-2	2009	5	17	10:35	MOC-D	34.95415	-12.84245	
248-1	2009	5	17	14:28	beamtrawl	35.0689	-12.89865	123
249-1	2009	5	17	17:38	DOS	35.0527	-12.9411	465
250-1	2009	5	17	19:21	BG	35.05755	-12.96972	350
250-2	2009	5	17	19:34	BG	35.05808	-12.96823	357
250-3	2009	5	17	19:48	BG	35.05812	-12.96728	373
251-1	2009	5	17	20:18	BG	35.05843	-12.9575	327
251-2	2009	5	17	20:34	BG	35.05895	-12.95607	347
251-3	2009	5	17	20:49	BG	35.05913	-12.955	361
252-1	2009	5	17	22:10	MOC-D	34.95663	-12.84317	
253-1	2009	5	18	02:02	CTD/ Ro	34.9701	-12.88517	2471
253-2	2009	5	18	03:03	CTD/ Ro	34.96977	-12.88502	2477
253-3	2009	5	18	04:46	CTD/ Ro	34.9752	-12.88368	2567
254-1	2009	5	18	07:01	MSN	35.06198	-12.84423	848
254-2	2009	5	18	07:36	MSN	35.0613	-12.83977	1012
255-1	2009	5	18	13:12	CTD/ Ro	35.01802	-12.81187	1946
256-1	2009	5	18	14:56	CTD/ Ro	35.0307	-12.8375	1104
257-1	2009	5	18	17:12	CTD/ Ro	35.1102	-12.92133	1020
258-1	2009	5	19	07:09	MOC-D	35.01817	-12.84018	
259-1	2009	5	19	09:00	DOS	35.05335	-12.94117	473
260-1	2009	5	19	12:56	MOC-D	34.9946	-12.95558	1964
261-1	2009	5	19	18:54	CTD/ Ro	35.04462	-13.06778	1675
261-2	2009	5	19	19:44	CTD/ Ro	35.04475	-13.06725	1675
261-3	2009	5	19	21:11	CTD/ Ro	35.04478	-13.06692	1672
262-1	2009	5	19	23:06	line and hook	35.03705	-12.89733	198
263-1	2009	5	20	00:14	MOC-D	34.9524	-12.84233	
264-1	2009	5	20	04:19	BG	35.08997	-12.91697	273
265-1	2009	5	20	05:49	line and hook	35.06098	-12.89392	128
266-1	2009	5	20	09:42	beamtrawl	35.06137	-12.89822	128
266-2	2009	5	20	10:12	beamtrawl	35.0602	-12.89857	133

267-1	2009	5	20	11:27	line and hook	35.07428	-12.88998	125
268-1	2009	5	20	14:06	CTD/ Ro	35.0302	-12.875	866
268-2	2009	5	20	15:22	CTD/ Ro	35.03073	-12.87335	816
269-1	2009	5	20	16:01	MSN	35.02228	-12.87503	854
269-1	2009	5	20	17:15	MSN	35.02272	-12.8761	856
270-1	2009	5	20	22:38	MSN	34.3014	-12.83387	4411
270-2	2009	5	20	23:56	MSN	34.30618	-12.83163	4411
270-3	2009	5	21	00:25	MSN	34.3104	-12.83105	4410
270-4	2009	5	21	01:32	MSN	34.32165	-12.82558	4507
271-1	2009	5	21	02:00	CTD/ Ro	34.32585	-12.82315	4414
271-2	2009	5	21	02:52	CTD/ Ro	34.33368	-12.81935	4415
271-3	2009	5	21	03:45	CTD/ Ro	34.34153	-12.81372	4410
272-1	2009	5	21	06:59	MSN	34.30103	-12.8323	4409
272-2	2009	5	21	08:22	MSN	34.2992	-12.83475	4410
272-3	2009	5	21	08:51	MSN	34.30158	-12.83405	4410
272-4	2009	5	21	09:56	MSN	34.30847	-12.82997	4410
273-1	2009	5	21	19:35	MSN	35.49965	-12.08463	4763
273-2	2009	5	21	20:50	MSN	35.50455	-12.08515	4751
273-3	2009	5	21	21:45	CTD/ Ro	35.50125	-12.08963	4754
274-1	2009	5	22	07:16	MSN	36.53865	-11.65348	973
275-1	2009	5	22	08:52	deployment traps	36.53593	-11.54552	75
276-1	2009	5	22	09:28	DOS	36.52232	-11.57028	56
277-1	2009	5	22	14:22	CTD/ Ro	36.57983	-11.54203	241
278-1	2009	5	22	15:29	recovery traps	36.53528	-11.54593	73
279-1	2009	5	22	16:01	MSN	36.52917	-11.55623	62
279-2	2009	5	22	16:17	MSN	36.52915	-11.55543	62
279-3	2009	5	22	16:30	MSN	36.52893	-11.55582	61
279-4	2009	5	22	17:05	MSN	36.52802	-11.55533	57
280-1	2009	5	22	17:48	DOS	36.51832	-11.57165	37
280-2	2009	5	22	19:02	DOS	36.51535	-11.5969	143
280-3	2009	5	22	19:36	line and hook	36.51522	-11.59542	137
281-1	2009	5	22	22:59	BG	36.52162	-11.48713	306
281-2	2009	5	22	23:17	BG	36.52318	-11.4877	304
281-3	2009	5	22	23:30	BG	36.52345	-11.48747	315
281-4	2009	5	22	23:42	BG	36.52295	-11.48785	315
281-5	2009	5	22	23:56	BG	36.52248	-11.48803	315
282-1	2009	5	23	00:33	BG	36.5807	-11.51008	324
282-2	2009	5	23	00:51	BG	36.58028	-11.51017	335
282-3	2009	5	23	01:03	BG	36.58048	-11.50953	335
283-1	2009	5	23	02:50	BG	36.49472	-11.61092	289
283-2	2009	5	23	03:04	BG	36.49545	-11.61132	
283-3	2009	5	23	03:17	BG	36.49553	-11.61132	
284-1	2009	5	23	04:12	CTD/ Ro	36.45177	-11.61397	
284-2	2009	5	23	04:41	CTD/ Ro	36.45198	-11.61267	

Abbreviations

CTD/ Ro	CTD/rosette (12 bottles)
BG	vanVeen grab
DOS	Deep-sea Observation System (camera sled)
MSN	multinet
MOC-D	$1m^2$-double-MOCNESS

Appendix 3: Maps of sampling locations

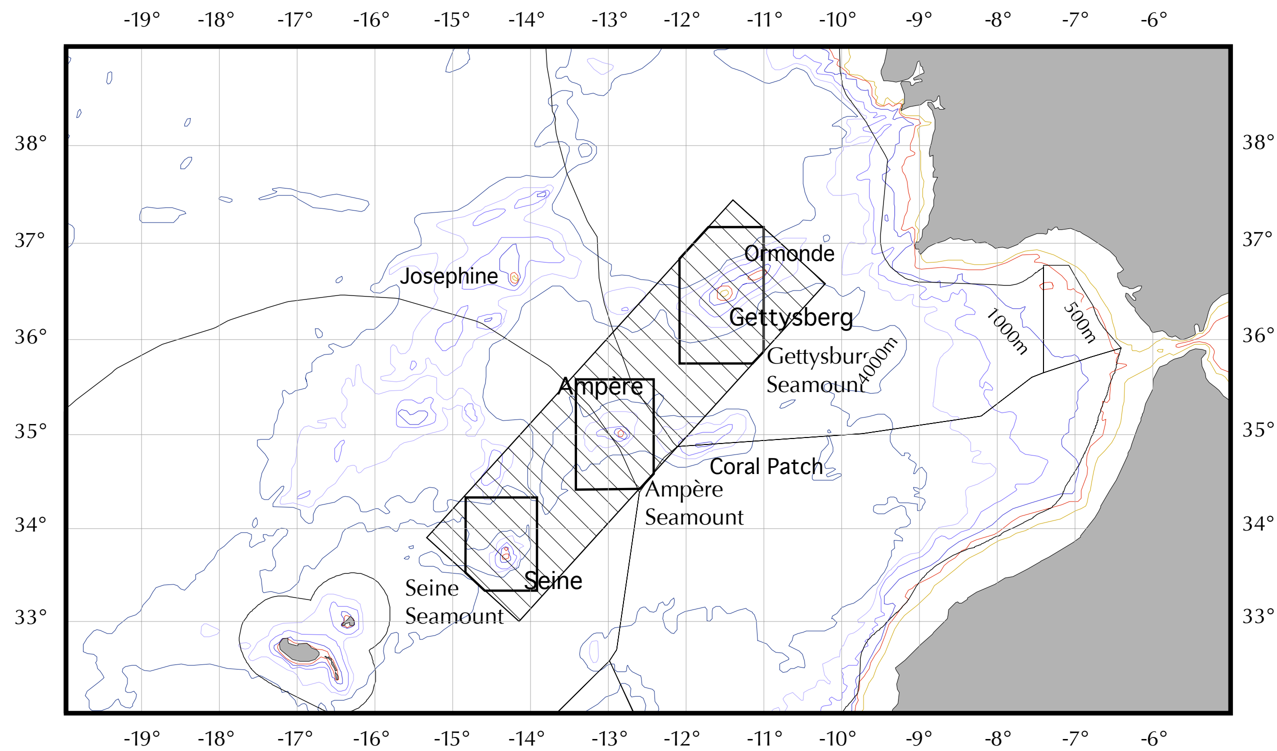

Fig. A1: Horseshoe Seamount chain, POS 384 sampling boxes

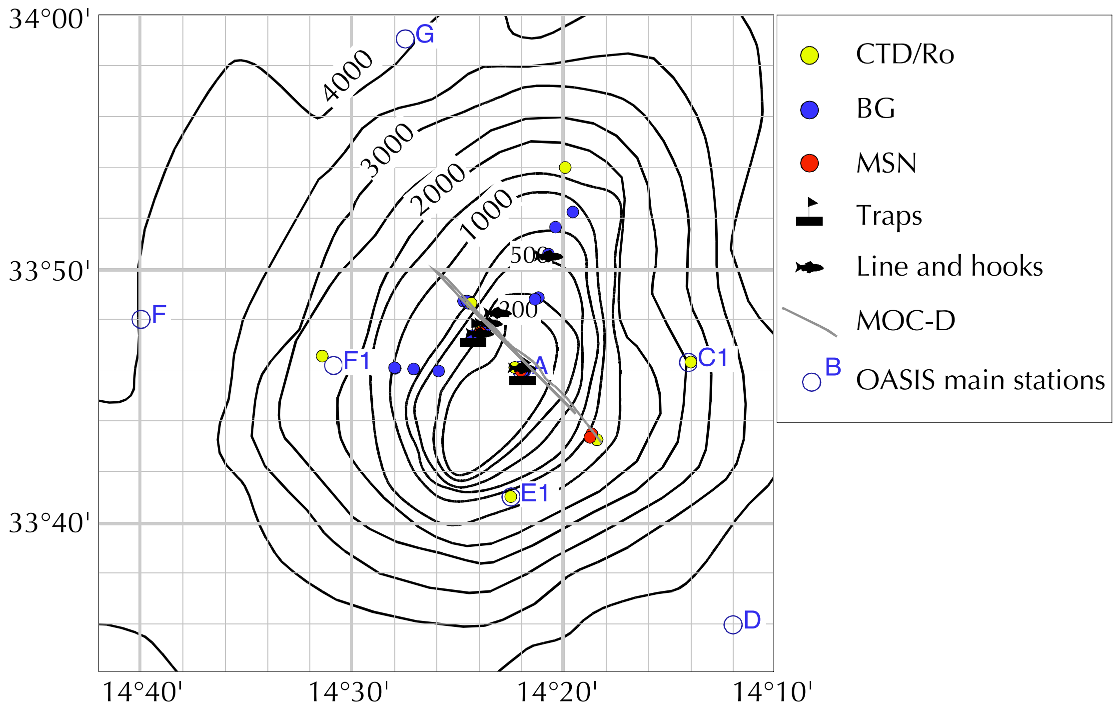

Fig. A2: Seine Seamount, central part: POS384 sampling locations

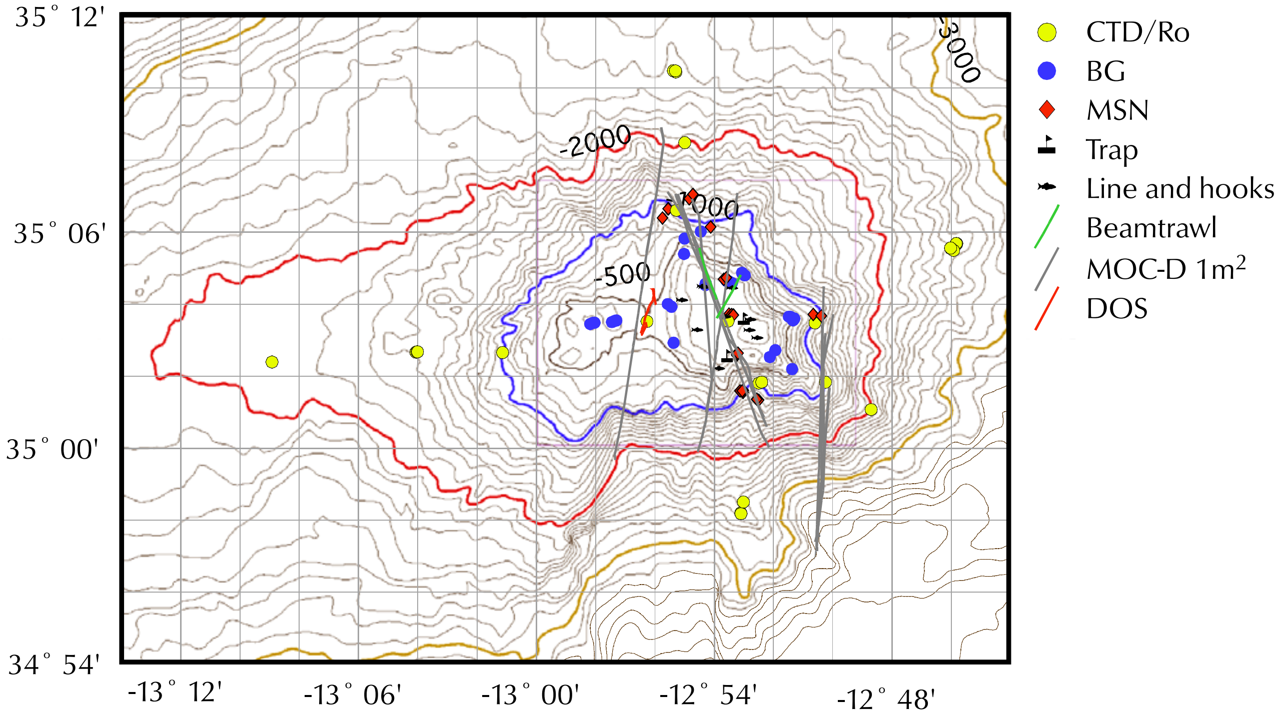

Fig. A3: Ampère Seamount, central part: POS384 sampling locations

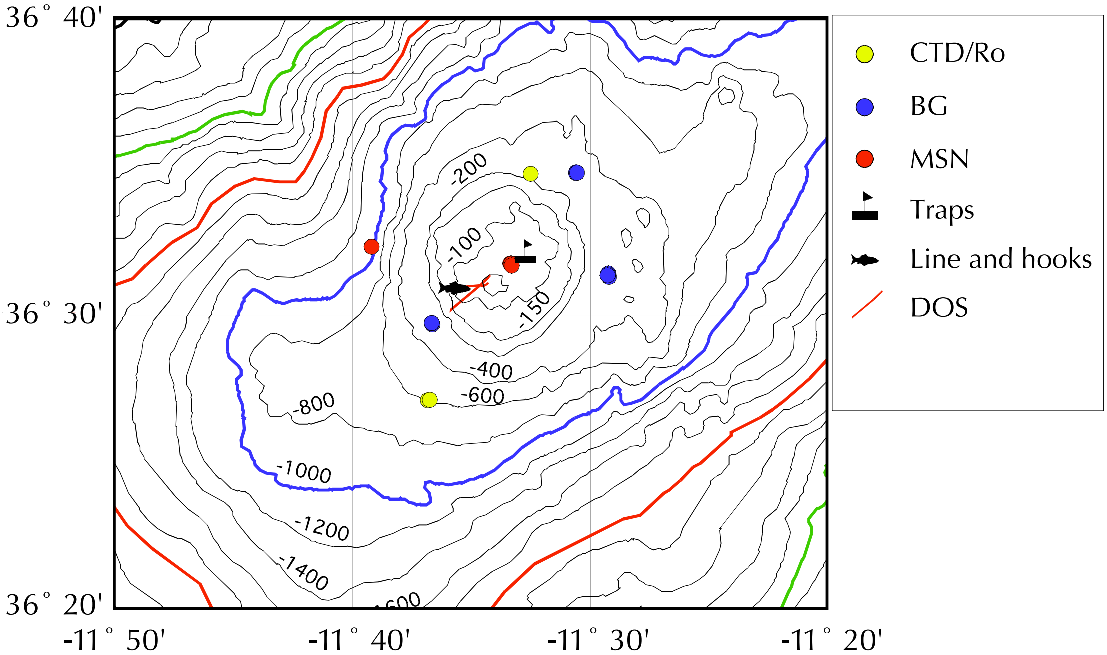

Fig. A4: Gettysburg Seamount, central part: POS384 sampling locations