

Cruise Report

Compiled by: Dr. Jan Dierking

R.V. Alkor

Cruise No.: AL 413

Dates of Cruise: 13.04. – 27.04.2013

Areas of Research: Physical, chemical, biological and fishery oceanography

Port Calls: Gdynia, Poland 19. – 21.04.2013

Institute: GEOMAR, FB3 (Marine Ecology, Evolutionary Ecology of Marine Fishes)

Chief Scientist: Dr. Jan Dierking

Number of Scientists: 12

Projects: CAVIAR, BIOACID II, POPDYN, BONUS, Fisheries Induced Evolution, Cod genome scan, others

Cruise Report

This cruise report consists of 19 pages including cover:

1. Scientific crew.....	2
2. Research programme.....	3
3. Narrative of cruise with technical details.....	4
4. Scientific report and first results.....	6
5. Scientific equipment	10
6. Acknowledgements.....	10
7. Appendix A: Station list.....	11

1. Scientific crew

Name	Function	Institute	Leg
Jan Dierking	Chief scientist	GEOMAR Kiel	Entire cruise
Svend Mees	Scientist	GEOMAR Kiel	Entire cruise
Hans-Harald Hinrichsen	Scientist	Guest	Entire cruise
Klaus Getzlaff	Scientist	GEOMAR Kiel	Entire cruise
Burkhard von Dewitz	Scientist	GEOMAR Kiel	Entire cruise
Christoph Petereit	Scientist	GEOMAR Kiel	Till Gdynia
Katrin Beining	Scientist	GEOMAR Kiel	Entire cruise
Isabell Keller	Scientist	GEOMAR Kiel	Entire cruise
Alice Nauendorf	Master student	GEOMAR Kiel	Entire cruise
Paul Stange	Master student	GEOMAR Kiel	Entire cruise
Gesine Ramm	Master student	University of Kopenhagen	Entire cruise
Sascha Nickel	Master student	GEOMAR Kiel	Entire cruise
Total	12		

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2. Research programme

This multidisciplinary cruise extended a long-term data series on (eco-) system composition and functioning of the Baltic Sea, with a focus on the deeper basins. The series has been collected in similar form since 1986 by the Helmholtz Centre for Ocean Research Kiel GEOMAR (former IFM-GEOMAR Kiel, former IfM Kiel), and provides measurements and samples for several ongoing and scheduled projects. A key characteristic of the cruise is the integration of oceanographic and biological information to enhance understanding of environmental and (fish) population fluctuations, and evolutionary processes in this system. The spatial focus lay on the Bornholm Basin (the most important spawning area of Baltic cod), but also included the Arkona and Gotland Basin and Gdansk Deep (Figure 1).

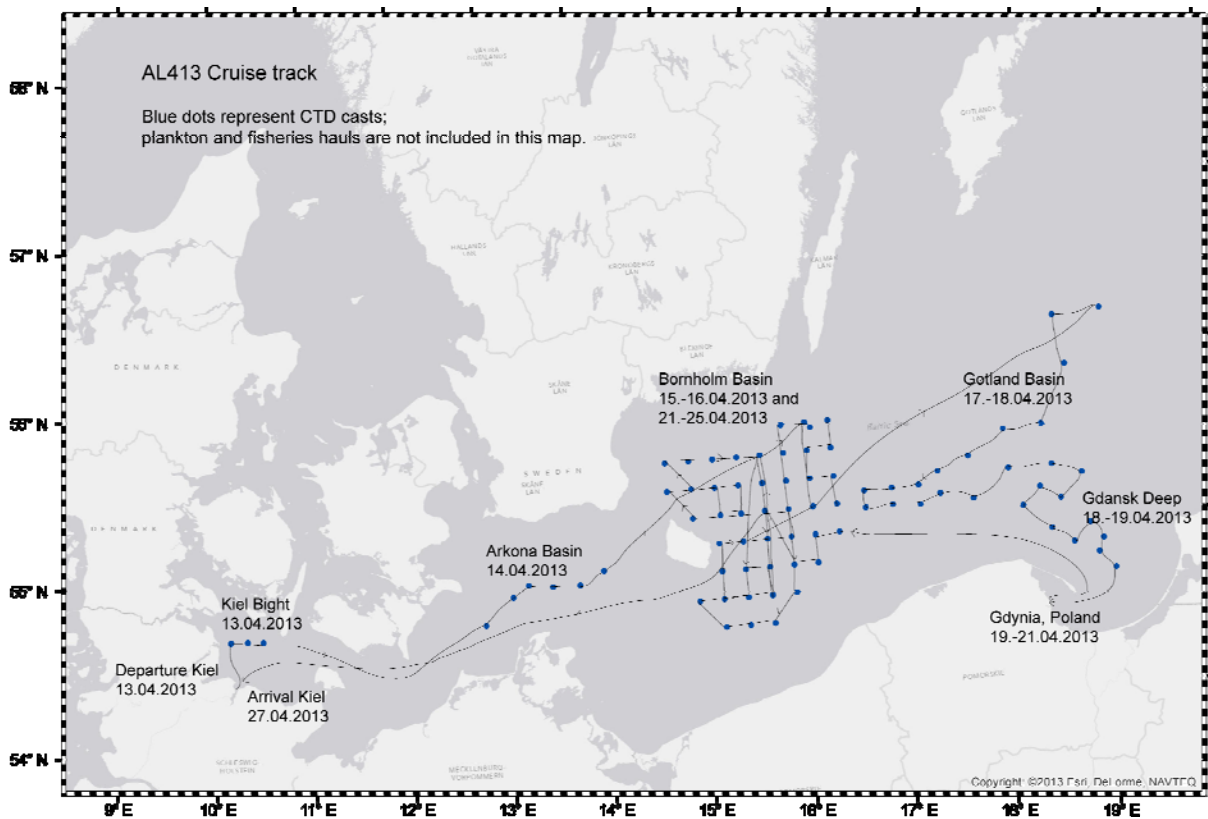


Figure 1 Cruise track of AL413. Blue circles denote CTD casts.

Specific investigations included a detailed hydrographic survey (oxygen, salinity, temperature, pH) of the Bornholm Basin (Figure 1), plankton surveys (zoo- and ichthyoplankton, with the goal to determine the composition and the abundance and vertical and horizontal distribution of species, and to take samples for later measurements of nutritional condition) (Figure 2), and pelagic fishery hauls for clupeid and gadoid fish (Figure 3, Table 1). The latter served to determine stock structure, gonadal maturation and egg production of sprat and cod, and to sample tissue for later genetic analyses and otoliths for age measurements of cod. The abundance and distribution of fish species in the investigated area was also assessed with hydroacoustic methods.

One additional component of the cruise were egg buoyancy experiments with flatfishes and cod and included the fertilization of eggs on board and measurements in density columns. This workline stood in the context of projects on mortality factors of early life stages, the role of ecological processes in the evolution of stock structure, and evolutionary selection pressures in Baltic fish species.

3. Narrative of cruise with technical details

Cruise AL 413 successfully accomplished all work and objectives that had initially been set, benefiting from good weather conditions and equipment that was functioning smoothly.

RV Alkor departed from GEOMAR pier as scheduled on April 13 2013 06:00 (all times UTC) heading to the first research area in the Kiel Bight. Over the duration of the cruise, hydroacoustic data obtained with four different echosounder frequencies (38, 70, 120 and 200 kHz) were continuously recorded. Station work started at 08:24, consisting of CTD, Bongo, Multinet MIDI (towed), Helgoländer Larvennetz, and pelagic fishery hauls in the Kiel Bight (April 13) and Arkona Basin (April 14), before transferring to Bornholm Basin. For the remainder of the cruise, following fishery hauls from which both ripe males and females of the same species were available, buoyancy experiments with fertilized eggs of flatfishes and cod were done. Similarly, following multinet MIDI or Helgoländer Larvennetz deployments from which developing cod eggs from the wild were recovered, buoyancy measurement with these eggs were done.

Station work in the main research area Bornholm Basin started on April 15 at 03:59 with fishery, CTD and Helgoländer larvae net hauls, followed by a 50 mile hydroacoustic and towed CTD transect during nighttime. Over the following 4 days, station work included CTD, Bongo (West of Stolpe trench)/IKS-80 (East of Stolpe trench), and pelagic fishery hauls in Bornholm Basin (April 16), Gotland Basin (April 17), Stolpe trench (April 18), and Gdansk Deep (April 19) during daytime and CTD and Bongo/IKS-80 hauls during nighttime. After completing the station grid in Gdansk Deep, RV Alkor entered Gdynia harbor on April 19 at 17:00. After debarking one scientist as scheduled on the morning of April 21, the vessel left port at 07:30 and steamed for Bornholm Basin. From April 21 17:40 until April 23 01:30, the Bornholm Basin station grid was covered with Bongo and CTD casts. In addition, on one station, the water sampler was deployed to obtain oxygen measurement with the Winkler method. The remaining pelagic fishery stations in Bornholm Basin were covered during the daytime, whereas the remaining stations of the Bongo and CTD grid were covered during nighttime of April 23 to 25.

Finally, from April 25 17:35 until April 26 06:13, the station BB23 in central Bornholm Basin was intensively sampled, including CTD measurements, use of the water sampler, and sampling of the distribution of ichthyoplankton and zooplankton with 6 hauls of the multinet MAXI covering the water column in 5 m layers, 7 hauls of the multinet MIDI covering the water column in 10 m layers, and 4 hauls each with the Apstein and WP2 net.

After completion of the research program, RV Alkor steamed for Kiel harbor and reached port on April 27 at 05:48. Compared to the initial cruise program, the only changes lay in some reorganization of the order of cruise legs to avoid bad weather conditions. The detailed timeline below, the cruise track (Figure 1), the station list (Appendix A) and an overview of gear deployments (Table 1) provide additional information regarding the cruise.

Detailed cruise timeline (all times board time):

Saturday 13/04/2013 0800 leaving GEOMAR-pier, heading with direction Kiel Bight.
1024 start of station work in Kiel Bight. CTD, Bongo, Helgoländer larvae net, MIDI multinet, pelagic fishery. 1729 end of fishery, transfer to Arkona Basin.

Sunday 14/04/2013 0556 start of station work in the Arkona Basin. CTD, Bongo, Helgoländer larvae net, pelagic fishery.
1552 completion of work in Arkona Basin: transfer to Bornholm Basin.

Monday 15/04/2013 0559 Start of station work in the Bornholm Basin. CTD, Helgoländer Larvennetz, pelagic fishery
1740 End of last haul.
1929 Start of hydro acoustic transect T2.

Tuesday 16/05/2013 0339 End of hydro acoustic transect T2.
0557 Start of pelagic fishery and CTD hauls on 5 stations along transect T2, plus Helgoländer larvae net on one station.
1521 End of last fishery haul and transfer to Gotland Basin.

Wednesday 17/05/2013 0601 Start of pelagic fishery, CTD and IKS-80 hauls on 5 stations, plus Helgoländer larvae net on one station.
1801 End of pelagic fishery, continuation of station work with CTD and IKS-80 working westwards towards Stolpe trench.
2314 Switch from IKS-80 to Bongo net, continuation of station work.

Thursday 18/05/2013 0559 Resuming with pelagic fishery work plus Bongo/IKS-80 and CTD during daytime, in addition Helgoländer larvae net haul on one station; station work with IKS-80 and CTD during nighttime.

Friday 19/05/2013 0604 Resuming with pelagic fishery work plus IKS-80 and CTD hauls on 5 stations, in addition Helgoländer larvae net on one station.
1507 End of station work; heading with direction Gdynia.
1900 entering Gdynia port.

Sunday 21/05/2013 0930 After scheduled debarking of one scientist, departure from Gdynia, heading to Bornholm Basin.
1940 Begin plankton work, Bongo and CTD hauls on Bornholm Basin station grid.

Monday 22/05/2013 Continuation of Bongo and CTD hauls on Bornholm Basin station grid; use of water sampler on one station.

Tuesday 23/05/2013 0558 Resuming pelagic fishery during daytime; continuation of Bongo and CTD hauls on station grid during day- and nighttime.

Tuesday 24/05/2013 Continuation of pelagic fishery during daytime; continuation of Bongo and CTD hauls on station grid during day- and nighttime.

Wednesday 25/05/2013 Completion of pelagic fishery work and of Bongo and CTD hauls on the remaining 5 stations of the Bornholm Basin Bongo station grid, end 1703.
1935 Begin of intensive sampling of central deep station BB23; CTD, water sampler, towed multinet MAXI, multinet MIDI, Apstein, WP-2.

Thursday 26/05/2013 0813 Completion of research program; steaming for Kiel.

Friday 27/05/2013 07:48 Arrival Kiel port, GEOMAR west shore berth.
1100 Unloading completed; end of cruise.

Table 1 Overview of gear deployment. Mesh size is given in brackets.

Gear	Deployments (n)
ADM-CTD	94
Towed CTD with hydro acoustic	1
Hydroacoustic transect (continuous along cruise track)	1
Watersampler + CTD	2
Bongo, Babybongo (150 μ , 335 μ , 500 μ)	61
IKS80 (500 μ)	21
WP2 (150 μ)	4
Apstein (200 μ)	4
Helgoländer Larvennetz (500 μ)	11
Maxi Multinet horizontal (335 μ)	6
Midi Multinet horizontal (50 μ)	13
Midi Multinet vertical (50 μ)	7
pelagic trawl (Jungfischtrawl)	45
Pelagic trawl (80-foot net)	2

4. Scientific report and first results

Ichthyo- and zooplankton sampling

Bongo- and Babybongo hauls covered Kiel Bight (3 hauls), Arkona Basin (6 hauls), and Bornholm Basin including the western part of the Stolpe Trench (52 hauls) (Figure 2). All Bongo samples were immediately checked for the presence of the invasive combjelly *Mnemiopsis leidyi*, but no specimens were discovered. Larvae of cod (*Gadus morhua*), sprat (*Sprattus sprattus*), and flounder (*Plathichthys flesus*) were picked from the 500 μ bongo-samples and conserved at -80 °C for subsequent RNA/DNA analysis. The 335 μ bongo samples will be used for the determination of species composition and abundance of ichthyoplankton. Preliminary results indicate that flounder eggs and larvae were most abundant, followed by sprat. Cod larvae were only sporadically present in the samples.

Stations in the eastern part of Stolpe trench and the Gdansk Deep and Southern Gotland Basin were covered with IKS-80 instead of Bongo hauls (Figure 2) to ensure compatibility of data with a long-term IKS-80 sampling series maintained by the Latvian Fish Resources Agency (LATFRA; Andrei Makarcuks).

Helgoländer larvae net (500 μ) hauls coupled with CTD deployments were used to obtain live eggs for buoyancy experiments over the cruise duration (11 hauls in total).

On April 25-26, on one central, deep station in the Bornholm Basin, MAXI (335 μ , towed, sampling of the water column in 5 m layers) and MIDI (50 μ , vertical, sampling of the water column in 10 m layers) type multinet (HYDROBIOS, Kiel) casts were performed to reveal the vertical distribution of ichthyoplankton and zooplankton. In addition, WP-2 (150 μ) and Apstein (200 μ) nets were deployed to obtain additional samples for DTU-AQUA in the context of the BONUS BIO C-3 project funded for 2014 (Dr. Jörg Dutz).

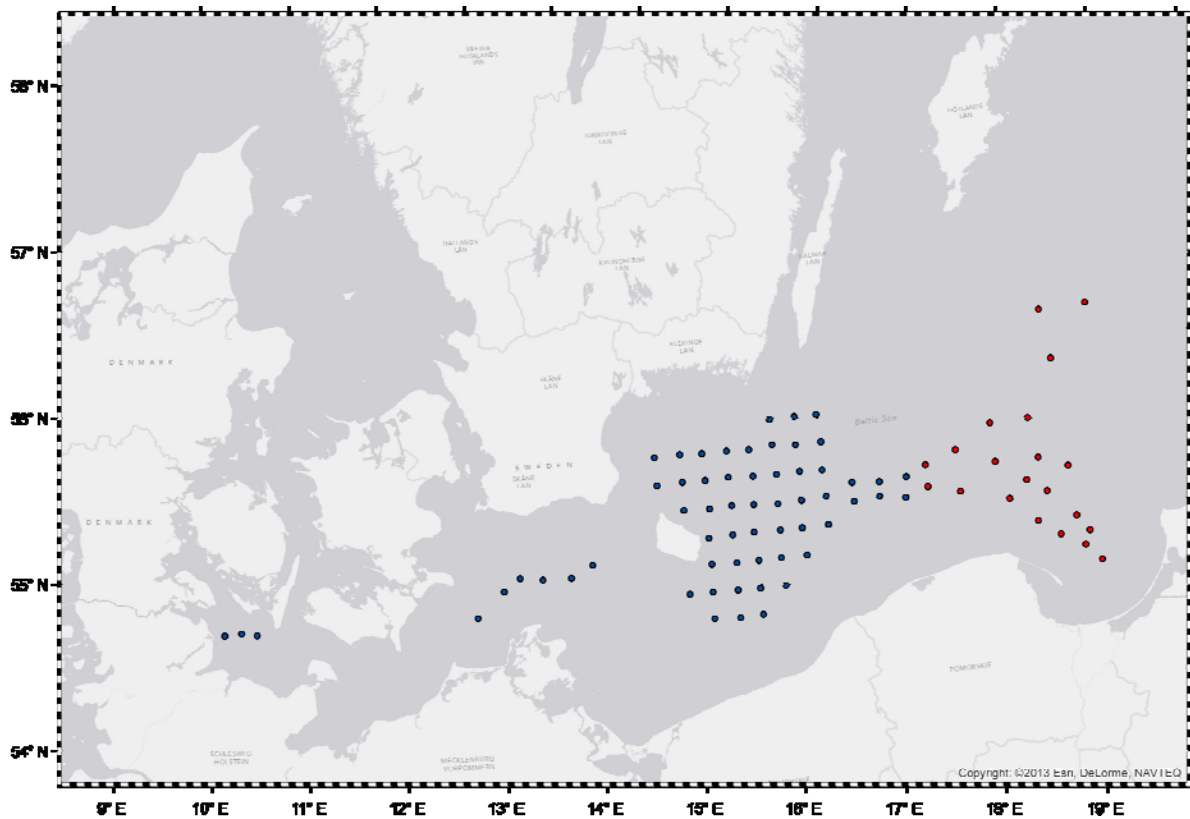


Figure 2 Plankton sampling with Bongo (blue circles) and IKS-80 (red circles) net casts during AL413. A CTD profile was also obtained at each of these locations (see cruise track in Figure 1).

Fishery

During the cruise, pelagic fishery was conducted in the Kiel Bight (2 hauls), Arkona Basin (4 hauls), Bornholm Basin (25 hauls), Stolpe Trench (3 hauls), Gotland Basin (5 hauls) and Gdansk Deep (5 hauls) (Figure 3). In parallel to the fishery hauls fish distribution patterns were detected by means of hydro acoustic measurements. Catches in the Bornholm Basin were dominated by sprat, followed by herring, cod, and flatfishes (mainly flounder (*Platichthys flesus*), but also, common dab (*Limanda limanda*), plaice (*Pleuronectes platessa*), and long rough dab (*Hippoglossoides platessoides*). Some whittings (*Merlangius merlangus*) occurred in particular in Arkona Basin. Sticklebacks (Four mackerels (*Scomber scombrus*), 2 pollacks (*Pollachius virens*), and 2 fourbeard rocklings (*Ciliata mustela*) completed the catches. An impression of fish biodiversity observed on a deep station in Bornholm Basin is given in Figure 4. Regarding cod, it was noticeable that higher catches could only be accomplished if the nets were towed close to the bottom, indicating a near benthic distribution and oxygen levels sufficiently high for cod in the bottom layers. Regarding the species composition, the occurrence of rarely caught mackerels and pollacks, which at present very likely represent migrants from the North Sea and not self-sustaining populations, are of interest. In the context of global change, trends in the occurrence of North Sea species and potential indications for establishing populations in the Baltic Sea will be of interest in the future.

For each haul and the entire catch, catch weight and length frequencies of all species (illustrated in Figure 5 for cod) were taken. Stomach samples were taken from sprat (min 10 per 1 cm length class) and herring (min 10 per 2 cm length class). For cod, single fish data (length, weight, sex and maturity stage) and samples (otoliths, fin clips for genetic analysis, stomachs and gonads) were obtained for each individual (see Figure 6 for illustration).

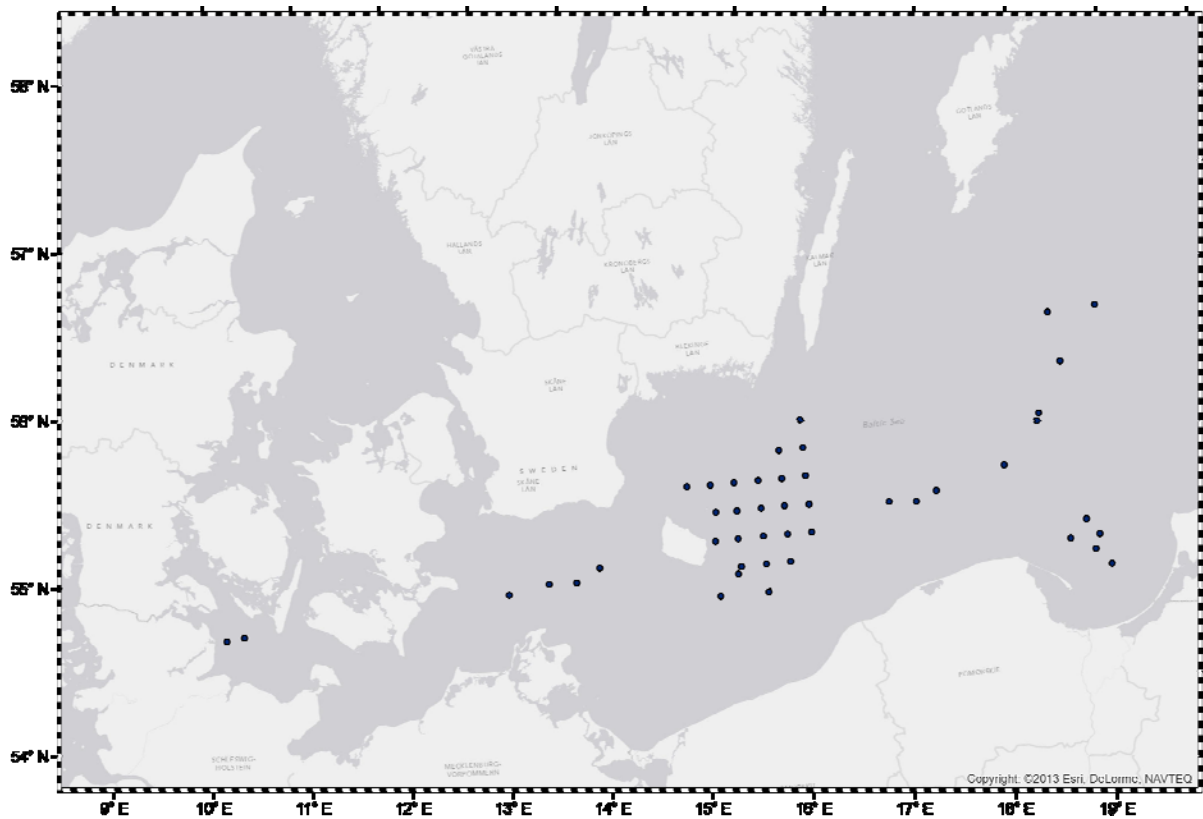


Figure 3 Fishery stations covered during AL413 with pelagic trawls (blue dots).



Figure 4 Baltic fish biodiversity. Different fish species caught during one fishery haul in central Bornholm Basin. Note that most hauls are characterized by lower biodiversity, with catches limited to sprat, herring and cod in many locations. Top: Cod; Left top to bottom: Herring, sprat, flounder; Right: mackerel, foubear rockling.

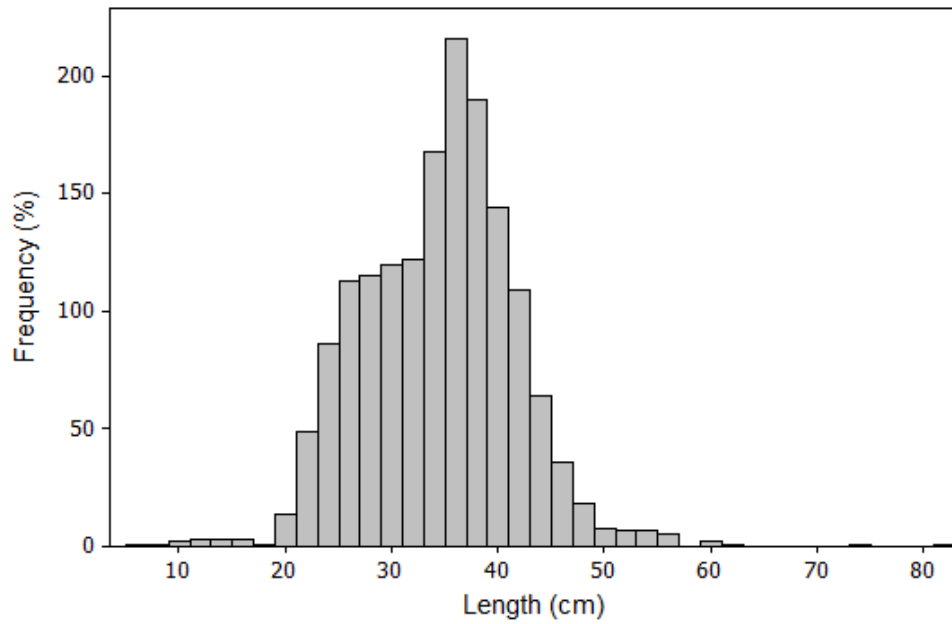


Figure 5 Relative length frequency distribution of cod catches during AL413 (n = 1610).



Figure 6 Samples (otoliths, fin clips, stomach contents, gonads) and measures (total length, weight, gutted weight, liver and gonad weight) taken from each cod individual during the cruise (illustrated here for a 38 cm female, maturity stage IV, with full stomach, from Bornholm Basin).

Hydrography

In total, CTD profiles were obtained from 96 stations with the ADM-CTD and the HYDROBIOS water sampler with attached CTD (Figure 1). Conditions varied depending on the basin and location of the Baltic sampled, and will be analyzed in depth in context of the long-term data series on hydrographic conditions. In general, Bornholm Basin stations were characterized by a permanent halocline in ca. 60 m depth, with sharply increasing salinity and decreasing oxygen levels below. However, oxygen near the bottom in many locations still exceeded 2.5 to 3 ml/l, which pointed to some inflow over the winter/early spring 2012/2013, and is sufficient for the (at least temporary) presence of cod adults. This agrees with observations from fishery hauls, which showed increased catches with increasing proximity of the trawl to the bottom.

Additionally, a towed CTD system was deployed to obtain a high resolution of the hydrographic situation on one North-South transect across Bornholm Basin.

5. Scientific equipment: instruments and gear

Hydrography:

- ADM-CTD with additional pH and O₂ sensor
- Hydrobios Water Sampler with CTD, pH and O₂ sensor

Zooplankton:

- Baby Bongo-Net (150 µm)
- Bongo-Net (335µm)
- Bongo Net (500µm)
- WP2 (150µm)
- Apstein net (200µm).

Ichthyoplankton:

- Bongo-Net (335µm and 500 µm)
- Hydrobios Multinet MAXI (335µm horizontal tows)
- Hydrobios Multinet MIDI (50µm horizontal tows and vertical hauls)
- IKS80 (500µm)
- Helgoländer Larvennetz (500µm)

Fish:

- Jungfisch Trawl and 80-feet net (both pelagic trawls)

Hydroacoustic:

- 38, 70, 120 and 200 kHz-echosounder EK60

6. Acknowledgements

Thanks to Captain Lass and the entire crew of RV Alkor for their outstanding support during the cruise!

7. Appendix A: Station list of AL413

Station	Date	Time (UTC)	Latitude (N)	Longitude (E)	Depth (m)	Wind (m/s)	Course (°)	Speed (kn)	Gear	Action
159	13.04.2013	08:24	54° 41.08'	10° 10.04'	19.4	NNW 4	338	0.4	CTD	surface
	13.04.2013	08:27	54° 41.09'	10° 10.03'	19.4	NW 4	119	0.0	CTD	on deck
	13.04.2013	08:34	54° 40.94'	10° 9.54'	33.0	NW 4	281	1.0	CTD	surface
	13.04.2013	08:38	54° 40.94'	10° 9.54'	33.2	NNW 5	99	0.1	CTD	on deck
	13.04.2013	08:44	54° 40.99'	10° 9.52'	33.1	NNW 5	341	2.0	Bongo net	surface
	13.04.2013	08:52	54° 41.38'	10° 9.40'	30.9	NW 5	356	3.1	Bongo net	on deck
	13.04.2013	09:03	54° 41.56'	10° 9.42'	30.7	NNW 4	139	1.2	towed multinet midi	surface
	13.04.2013	09:24	54° 40.62'	10° 9.78'	28.8	NNW 3	155	2.8	towed multinet midi	on deck
	13.04.2013	09:49	54° 40.52'	10° 9.83'	28.6	NW 4	356	1.9	pelagic trawl	surface
	13.04.2013	09:54	54° 40.72'	10° 9.74'	27.3	NW 3	340	2.8	pelagic trawl	start fishing
	13.04.2013	10:24	54° 42.14'	10° 9.20'	28.0	NW 4	353	2.9	pelagic trawl	end fishing
	13.04.2013	10:32	54° 42.36'	10° 9.21'	26.2	WNW 4	5	1.4	pelagic trawl	on deck
160	13.04.2013	11:18	54° 41.06'	10° 20.01'	23.2	WNW 3	78	0.6	CTD	surface
	13.04.2013	11:21	54° 41.07'	10° 20.02'	23.1	W 4	342	0.3	CTD	on deck
	13.04.2013	11:26	54° 41.08'	10° 19.98'	23.2	WNW 4	276	1.0	towed multinet midi	surface
	13.04.2013	11:43	54° 41.68'	10° 19.90'	29.5	W 4	99	1.4	towed multinet midi	on deck
	13.04.2013	11:47	54° 41.64'	10° 20.01'	28.7	WNW 3	119	1.3	Bongo net	surface
	13.04.2013	11:54	54° 41.53'	10° 20.51'	26.8	W 2	106	2.7	Bongo net	on deck
	13.04.2013	12:00	54° 41.73'	10° 20.74'	32.0	WSW 3	58	1.9	pelagic trawl	surface
	13.04.2013	12:08	54° 41.67'	10° 21.35'	31.4	W 4	101	2.7	pelagic trawl	start fishing
	13.04.2013	12:37	54° 41.38'	10° 23.82'	31.4	W 5	104	3.0	pelagic trawl	end fishing
	13.04.2013	12:43	54° 41.33'	10° 24.18'	31.8	W 5	104	1.8	pelagic trawl	on deck
161	13.04.2013	14:02	54° 40.92'	10° 29.85'	26.8	WSW 4	288	0.2	CTD	surface
	13.04.2013	14:04	54° 40.92'	10° 29.83'	26.8	SW 4	287	0.2	CTD	on deck
	13.04.2013	14:09	54° 40.92'	10° 29.75'	27.0	SW 4	259	2.6	Bongo net	surface
	13.04.2013	14:14	54° 40.87'	10° 29.32'	27.2	SW 5	256	2.8	Bongo net	on deck
	13.04.2013	14:22	54° 40.82'	10° 29.22'	26.6	SW 5	87	1.1	towed multinet midi	surface
	13.04.2013	14:32	54° 40.82'	10° 29.56'	26.0	SW 5	271	2.3	towed multinet midi	on deck
	13.04.2013	14:37	54° 40.79'	10° 29.32'	26.0	SW 5	263	1.3	towed multinet midi	surface
	13.04.2013	14:53	54° 40.84'	10° 28.05'	28.3	WSW 6	275	2.6	towed multinet midi	on deck
	13.04.2013	15:11	54° 40.80'	10° 28.31'	27.0	WSW 6	88	1.5	towed multinet midi	surface
	13.04.2013	15:28	54° 40.80'	10° 29.80'	25.3	W 6	92	3.1	towed multinet midi	on deck
162	14.04.2013	04:00	54° 43.99'	12° 47.50'	22.6	SSW 4	237	0.2	CTD	surface
	14.04.2013	04:03	54° 43.98'	12° 47.48'	22.6	SSW 4	249	0.3	CTD	on deck
	14.04.2013	04:05	54° 43.98'	12° 47.47'	22.6	S 4	247	2.3	Bongo net	surface
	14.04.2013	04:11	54° 43.80'	12° 47.08'	22.7	S 3	230	2.9	Bongo net	on deck
163	14.04.2013	05:40	54° 53.13'	13° 4.55'	43.6	S 3	35	3.1	Bongo net	surface
	14.04.2013	05:50	54° 53.55'	13° 5.03'	43.9	S 3	37	2.6	Bongo net	on deck
	14.04.2013	05:56	54° 53.51'	13° 5.03'	44.0	SSW 3	253	0.2	CTD	surface
	14.04.2013	05:59	54° 53.51'	13° 5.03'	44.0	SSW 4	97	0.5	CTD	on deck
	14.04.2013	06:02	54° 53.49'	13° 5.11'	43.6	SW 4	89	1.9	pelagic trawl	surface
	14.04.2013	06:15	54° 53.70'	13° 6.25'	43.8	SSW 3	73	3.1	pelagic trawl	start fishing
	14.04.2013	06:45	54° 54.19'	13° 8.69'	44.0	S 4	69	3.0	pelagic trawl	end fishing
	14.04.2013	06:53	54° 54.33'	13° 9.19'	44.1	SSE 4	56	3.0	pelagic trawl	on deck
164	14.04.2013	07:28	54° 57.49'	13° 15.01'	46.9	S 5	266	0.7	CTD	surface
	14.04.2013	07:32	54° 57.49'	13° 14.98'	47.0	S 5	70	0.1	CTD	on deck
	14.04.2013	07:36	54° 57.49'	13° 15.01'	46.9	SSE 5	73	0.2	Helgoländer net	surface
	14.04.2013	07:47	54° 57.50'	13° 15.07'	47.0	SSE 4	83	0.3	Helgoländer net	on deck
	14.04.2013	07:51	54° 57.51'	13° 15.09'	46.9	SSE 4	7	0.3	Bongo net	surface
	14.04.2013	08:00	54° 57.34'	13° 15.67'	46.8	SSE 4	110	2.5	Bongo net	on deck
165	14.04.2013	08:50	54° 56.46'	13° 29.16'	52.0	SE 6	134	2.8	Bongo net	surface
	14.04.2013	08:59	54° 56.35'	13° 29.88'	48.6	SE 5	91	3.0	Bongo net	on deck
	14.04.2013	09:05	54° 56.45'	13° 29.98'	46.9	SE 5	132	0.3	Helgoländer net	surface
	14.04.2013	09:13	54° 56.46'	13° 29.95'	47.1	SE 5	296	0.4	Helgoländer net	on deck
	14.04.2013	09:17	54° 56.46'	13° 29.92'	52.2	SE 5	262	0.2	CTD	surface
	14.04.2013	09:21	54° 56.46'	13° 29.90'	47.2	SE 5	292	0.1	CTD	on deck
	14.04.2013	09:26	54° 56.50'	13° 30.18'	47.1	SE 5	73	2.9	pelagic trawl	surface
	14.04.2013	09:38	54° 56.66'	13° 31.11'	47.2	SE 5	74	2.9	pelagic trawl	start fishing
	14.04.2013	10:08	54° 57.03'	13° 33.49'	52.4	SSE 7	76	2.9	pelagic trawl	end fishing
	14.04.2013	10:18	54° 57.18'	13° 33.93'	52.3	SSE 7	52	1.7	pelagic trawl	on deck
166	14.04.2013	11:10	54° 56.50'	13° 46.81'	51.5	SE 7	115	0.9	CTD	surface
	14.04.2013	11:15	54° 56.47'	13° 46.85'	51.6	SE 7	143	0.3	CTD	on deck
	14.04.2013	11:19	54° 56.46'	13° 46.91'	50.5	SE 7	128	1.1	Bongo net	surface
	14.04.2013	11:25	54° 56.30'	13° 47.20'	47.2	SE 7	136	2.0	pelagic trawl	surface
	14.04.2013	11:25	54° 56.30'	13° 47.20'	47.2	SE 7	136	2.0	Bongo net	on deck
	14.04.2013	11:38	54° 56.45'	13° 48.15'	50.6	SSE 7	68	3.0	pelagic trawl	start fishing
	14.04.2013	12:08	54° 57.04'	13° 50.61'	51.4	SSE 7	66	3.1	pelagic trawl	end fishing
	14.04.2013	12:17	54° 57.23'	13° 51.08'	48.1	SE 7	67	3.0	pelagic trawl	on deck
167	14.04.2013	12:58	55° 0.61'	14° 0.84'	47.8	SE 7	50	2.5	Bongo net	surface
	14.04.2013	13:04	55° 0.73'	14° 1.23'	49.2	ESE 7	101	1.2	Bongo net	on deck
	14.04.2013	13:10	55° 0.64'	14° 0.99'	47.9	SE 7	62	1.2	towed multinet midi	surface
	14.04.2013	13:30	55° 0.79'	14° 2.66'	47.9	SE 7	86	2.8	towed multinet midi	on deck

	14.04.2013	13:50	55° 1.04'	13° 59.90'	47.7	SE 8	84	3.1	towed multinet midi	surface
	14.04.2013	14:07	55° 1.02'	14° 1.36'	47.9	SE 8	93	3.0	towed multinet midi	on deck
	14.04.2013	14:14	55° 0.99'	14° 1.99'	48.0	SE 8	40	0.7	CTD	surface
	14.04.2013	14:19	55° 0.99'	14° 2.03'	48.1	SE 8	212	0.2	CTD	on deck
	14.04.2013	14:21	55° 0.96'	14° 2.06'	47.9	SE 8	130	1.8	pelagic trawl	surface
	14.04.2013	14:33	55° 0.57'	14° 2.93'	48.1	SE 8	130	3.0	pelagic trawl	start fishing
	14.04.2013	15:03	54° 59.60'	14° 4.90'	47.7	ESE 8	130	3.0	pelagic trawl	end fishing
	14.04.2013	15:13	54° 59.48'	14° 5.23'	47.7	SE 8	109	0.9	pelagic trawl	on deck
168	15.04.2013	03:59	55° 37.49'	15° 45.00'	69.0	S 10	116	0.5	CTD	surface
	15.04.2013	04:04	55° 37.48'	15° 45.01'	70.5	S 10	206	0.3	CTD	on deck
	15.04.2013	04:08	55° 37.48'	15° 44.98'	70.4	S 10	278	0.2	Helgoländer net	surface
	15.04.2013	04:18	55° 37.47'	15° 45.02'	69.4	S 10	180	0.2	Helgoländer net	on deck
169	15.04.2013	05:43	55° 27.50'	15° 45.01'	86.0	SSE 12	171	1.0	CTD	surface
	15.04.2013	05:50	55° 27.49'	15° 45.01'	85.4	SSE 12	270	0.5	CTD	on deck
	15.04.2013	05:52	55° 27.49'	15° 44.97'	85.9	SSE 12	193	1.7	pelagic trawl	surface
	15.04.2013	06:04	55° 26.92'	15° 45.29'	86.3	SSE 11	162	3.0	pelagic trawl	start fishing
	15.04.2013	06:34	55° 25.51'	15° 46.03'	89.5	S 11	168	2.9	pelagic trawl	end fishing
	15.04.2013	06:47	55° 24.95'	15° 46.21'	92.6	S 11	159	3.0	pelagic trawl	on deck
170	15.04.2013	07:44	55° 17.52'	15° 45.02'	96.2	S 12	250	0.5	CTD	surface
	15.04.2013	07:51	55° 17.53'	15° 45.06'	101.1	SSE 12	119	0.5	CTD	on deck
	15.04.2013	07:56	55° 17.54'	15° 45.13'	95.8	SSE 11	99	0.4	Helgoländer net	surface
	15.04.2013	08:10	55° 17.55'	15° 45.27'	95.6	SSE 12	91	0.3	Helgoländer net	on deck
	15.04.2013	08:15	55° 17.54'	15° 45.32'	99.4	SSE 12	156	2.2	pelagic trawl	surface
	15.04.2013	08:34	55° 16.72'	15° 46.07'	97.6	SSE 12	159	3.0	pelagic trawl	start fishing
	15.04.2013	09:04	55° 15.37'	15° 46.94'	96.7	SSE 11	161	2.9	pelagic trawl	end fishing
	15.04.2013	09:16	55° 14.93'	15° 47.22'	96.7	SSE 11	144	2.8	pelagic trawl	on deck
171	15.04.2013	10:08	55° 7.58'	15° 45.03'	89.2	SSE 10	205	0.7	CTD	surface
	15.04.2013	10:15	55° 7.56'	15° 45.08'	91.7	SSE 10	128	0.4	pelagic trawl	surface
	15.04.2013	10:15	55° 7.56'	15° 45.08'	91.7	SSE 10	128	0.4	CTD	on deck
	15.04.2013	10:32	55° 6.98'	15° 45.86'	88.7	SSE 10	141	2.6	pelagic trawl	start fishing
	15.04.2013	11:02	55° 5.86'	15° 47.35'	91.6	SSE 10	145	2.8	pelagic trawl	end fishing
	15.04.2013	11:16	55° 5.60'	15° 47.89'	89.3	SSE 10	83	1.5	pelagic trawl	on deck
172	15.04.2013	12:10	54° 57.53'	15° 45.05'	81.1	SSE 10	200	0.4	CTD	surface
	15.04.2013	12:16	54° 57.53'	15° 45.10'	82.9	SSE 10	67	0.5	CTD	on deck
	15.04.2013	12:19	54° 57.53'	15° 45.16'	81.1	SSE 10	89	0.5	Helgoländer net	surface
	15.04.2013	12:31	54° 57.53'	15° 45.20'	81.1	SSE 9	228	0.3	Helgoländer net	on deck
	15.04.2013	12:35	54° 57.48'	15° 45.22'	82.0	SSE 10	148	2.0	pelagic trawl	surface
	15.04.2013	12:54	54° 56.64'	15° 46.17'	80.2	SSE 10	144	3.0	pelagic trawl	start fishing
	15.04.2013	13:25	54° 55.49'	15° 47.65'	77.5	SSE 10	144	2.7	pelagic trawl	end fishing
	15.04.2013	13:36	54° 55.27'	15° 48.12'	79.9	S 11	93	2.0	pelagic trawl	on deck
173	15.04.2013	14:28	54° 47.52'	15° 44.98'	72.9	SSE 11	158	1.2	CTD	surface
	15.04.2013	14:34	54° 47.49'	15° 45.00'	72.0	SSE 11	120	0.5	CTD	on deck
	15.04.2013	14:36	54° 47.49'	15° 45.03'	74.4	SSE 11	83	0.6	pelagic trawl	surface
	15.04.2013	14:53	54° 46.77'	15° 44.53'	71.3	SSE 11	231	3.1	pelagic trawl	start fishing
	15.04.2013	15:23	54° 45.79'	15° 42.44'	71.2	SSE 12	232	3.1	pelagic trawl	end fishing
	15.04.2013	15:40	54° 45.08'	15° 42.33'	71.4	SSE 10	155	2.9	pelagic trawl	on deck
174	15.04.2013	17:29	54° 49.55'	15° 45.00'	77.2	SSE 10	1	4.7	towed CTD	surface
	15.04.2013	17:32	54° 49.76'	15° 45.00'	74.9	SSE 10	0	4.0	towed CTD	begin transect
	16.04.2013	01:35	55° 30.22'	15° 44.99'	81.4	S 6	357	4.9	towed CTD	end transect
	16.04.2013	01:39	55° 30.52'	15° 44.96'	80.8	S 6	359	3.9	towed CTD	on deck
175	16.04.2013	03:57	55° 47.53'	16° 14.92'	60.3	SSE 7	163	2.3	pelagic trawl	surface
	16.04.2013	04:09	55° 46.92'	16° 15.52'	61.3	SSE 7	130	3.1	pelagic trawl	start fishing
	16.04.2013	04:39	55° 46.13'	16° 17.76'	64.3	SSE 8	120	2.8	pelagic trawl	end fishing
	16.04.2013	04:53	55° 45.71'	16° 18.39'	62.7	SSE 8	152	2.3	pelagic trawl	on deck
	16.04.2013	04:58	55° 45.62'	16° 18.48'	65.6	SSE 8	144	0.3	CTD	surface
	16.04.2013	05:02	55° 45.61'	16° 18.46'	65.6	SSE 8	290	0.4	CTD	on deck
176	16.04.2013	05:59	55° 37.55'	16° 14.88'	80.6	SSE 9	179	2.4	CTD	surface
	16.04.2013	06:05	55° 37.56'	16° 14.94'	74.5	SSE 8	29	0.5	CTD	on deck
	16.04.2013	06:08	55° 37.59'	16° 14.95'	76.7	SSE 8	26	0.5	Helgoländer net	surface
	16.04.2013	06:19	55° 37.62'	16° 15.03'	76.0	SSE 8	115	0.4	Helgoländer net	on deck
	16.04.2013	06:23	55° 37.57'	16° 15.08'	74.5	SSE 8	146	1.0	pelagic trawl	surface
	16.04.2013	06:36	55° 36.97'	16° 15.69'	75.2	SSE 7	150	3.1	pelagic trawl	start fishing
	16.04.2013	07:06	55° 35.67'	16° 16.91'	71.9	SSE 8	161	2.9	pelagic trawl	end fishing
	16.04.2013	07:17	55° 35.25'	16° 17.30'	71.2	S 8	131	3.3	pelagic trawl	on deck
177	16.04.2013	08:09	55° 27.52'	16° 14.87'	75.0	SSE 7	206	2.5	CTD	surface
	16.04.2013	08:15	55° 27.51'	16° 14.88'	75.0	SSE 7	67	0.6	CTD	on deck
	16.04.2013	08:17	55° 27.50'	16° 14.93'	75.0	SSE 7	148	2.8	pelagic trawl	surface
	16.04.2013	08:28	55° 26.91'	16° 15.38'	74.4	SSE 7	156	2.9	pelagic trawl	start fishing
	16.04.2013	08:58	55° 25.54'	16° 16.32'	72.7	SSE 6	158	3.1	pelagic trawl	end fishing
	16.04.2013	09:09	55° 25.11'	16° 16.66'	71.8	SSE 7	139	3.0	pelagic trawl	on deck
178	16.04.2013	09:59	55° 17.52'	16° 15.00'	74.6	S 7	191	0.5	CTD	surface
	16.04.2013	10:05	55° 17.49'	16° 15.04'	74.5	SSE 7	126	0.5	CTD	on deck
	16.04.2013	10:09	55° 17.50'	16° 15.05'	74.6	SSE 7	350	0.1	Helgoländer net	surface
	16.04.2013	10:20	55° 17.47'	16° 15.06'	74.4	S 7	107	0.4	Helgoländer net	on deck
	16.04.2013	10:26	55° 17.34'	16° 15.18'	74.2	SSE 7	159	3.0	pelagic trawl	surface
	16.04.2013	10:38	55° 16.71'	16° 15.62'	72.9	S 7	158	2.9	pelagic trawl	start fishing
	16.04.2013	11:08	55° 15.37'	16° 16.61'	70.7	S 7	158	3.1	pelagic trawl	end fishing

	16.04.2013	11:18	55° 15.02'	16° 16.90'	70.4	S 7	139	2.3	pelagic trawl	on deck
179	16.04.2013	12:04	55° 7.52'	16° 15.08'	82.1	S 6	151	0.9	CTD	surface
	16.04.2013	12:10	55° 7.47'	16° 15.16'	79.7	S 6	135	0.3	CTD	on deck
	16.04.2013	12:14	55° 7.46'	16° 15.17'	79.8	S 6	160	0.0	Helgoländer net	surface
	16.04.2013	12:25	55° 7.42'	16° 15.14'	79.7	S 6	181	0.1	Helgoländer net	on deck
	16.04.2013	12:29	55° 7.33'	16° 15.19'	79.6	S 6	174	2.2	pelagic trawl	surface
	16.04.2013	12:41	55° 6.65'	16° 15.29'	80.8	S 6	177	2.6	pelagic trawl	start fishing
	16.04.2013	13:11	55° 5.24'	16° 15.36'	77.4	SSE 6	179	2.8	pelagic trawl	end fishing
	16.04.2013	13:21	55° 4.87'	16° 15.28'	78.0	SSE 7	187	2.7	pelagic trawl	on deck
180	17.04.2013	04:01	56° 15.00'	19° 30.04'	110.2	SW 9	232	0.1	CTD	surface
	17.04.2013	04:10	56° 14.99'	19° 30.03'	110.4	SW 8	240	0.2	CTD	on deck
	17.04.2013	04:13	56° 14.99'	19° 30.01'	109.7	SW 9	300	0.2	IKS 80	surface
	17.04.2013	04:22	56° 14.99'	19° 30.01'	110.3	SSW 8	188	0.3	IKS 80	on deck
	17.04.2013	04:25	56° 14.98'	19° 30.01'	110.5	SSW 8	231	0.1	pelagic trawl	surface
	17.04.2013	04:40	56° 14.24'	19° 29.06'	108.5	SSW 8	221	3.2	pelagic trawl	start fishing
	17.04.2013	05:10	56° 13.07'	19° 27.30'	107.1	SW 8	217	3.3	pelagic trawl	end fishing
	17.04.2013	05:20	56° 12.74'	19° 26.81'	106.5	SW 8	220	2.6	pelagic trawl	on deck
181	17.04.2013	06:51	56° 14.92'	18° 59.94'	122.1	WSW 7	141	0.6	IKS 80	surface
	17.04.2013	07:01	56° 14.89'	18° 59.92'	121.9	WSW 7	226	0.1	IKS 80	on deck
	17.04.2013	07:03	56° 14.89'	18° 59.92'	121.9	WSW 7	266	0.1	Helgoländer net	surface
	17.04.2013	07:21	56° 14.88'	18° 59.83'	121.8	WSW 7	239	0.3	Helgoländer net	on deck
	17.04.2013	07:24	56° 14.87'	18° 59.83'	122.0	WSW 8	134	0.3	CTD	surface
	17.04.2013	07:32	56° 14.86'	18° 59.79'	121.7	SW 8	292	0.6	CTD	on deck
	17.04.2013	07:35	56° 14.85'	18° 59.70'	121.6	WSW 8	236	2.5	pelagic trawl	surface
	17.04.2013	07:45	56° 14.50'	18° 58.91'	120.8	WSW 9	229	2.9	pelagic trawl	start fishing
	17.04.2013	08:15	56° 13.57'	18° 56.87'	120.3	WSW 8	232	2.8	pelagic trawl	end fishing
	17.04.2013	08:27	56° 13.21'	18° 56.21'	120.6	SW 8	203	3.1	pelagic trawl	on deck
182	17.04.2013	10:07	55° 57.08'	19° 2.96'	113.1	SW 8	177	0.7	CTD	surface
	17.04.2013	10:16	55° 57.02'	19° 2.97'	114.6	SW 9	236	0.1	CTD	on deck
	17.04.2013	10:19	55° 57.01'	19° 2.97'	114.8	SW 9	190	0.6	IKS 80	surface
	17.04.2013	10:30	55° 56.95'	19° 2.98'	112.2	SW 9	15	0.1	IKS 80	on deck
	17.04.2013	10:33	55° 56.96'	19° 2.93'	112.3	SW 9	244	1.7	pelagic trawl	surface
	17.04.2013	10:46	55° 56.60'	19° 2.02'	110.3	SW 9	238	2.7	pelagic trawl	start fishing
	17.04.2013	11:16	55° 55.82'	18° 59.81'	112.0	SW 9	241	2.9	pelagic trawl	end fishing
	17.04.2013	11:27	55° 55.74'	18° 59.33'	113.5	SW 10	304	1.3	pelagic trawl	on deck
183	17.04.2013	13:19	55° 39.66'	18° 45.01'	83.4	SW 9	228	2.5	pelagic trawl	surface
	17.04.2013	13:31	55° 39.20'	18° 44.15'	86.4	SW 9	227	2.9	pelagic trawl	start fishing
	17.04.2013	14:01	55° 38.18'	18° 42.37'	84.5	SW 9	223	2.6	pelagic trawl	end fishing
	17.04.2013	14:12	55° 37.87'	18° 41.82'	84.4	WSW 10	226	2.7	pelagic trawl	on deck
	17.04.2013	14:26	55° 37.00'	18° 43.04'	85.4	SW 10	227	0.2	IKS 80	surface
	17.04.2013	14:33	55° 59.99'	18° 43.02'	85.4	SW 10	227	0.2	IKS 80	on deck
	17.04.2013	14:37	55° 36.94'	18° 42.94'	85.0	SW 10	227	0.2	CTD	surface
	17.04.2013	14:43	55° 36.95'	18° 42.98'	85.0	SW 10	227	2.0	CTD	on deck
184	17.04.2013	14:47	55° 36.98'	18° 43.04'	85.6	SW 8	190	1.1	pelagic trawl	surface
	17.04.2013	15:01	55° 36.60'	18° 41.89'	85.7	SW 8	239	2.7	pelagic trawl	start fishing
	17.04.2013	15:32	55° 35.86'	18° 39.75'	86.7	SW 8	239	2.7	pelagic trawl	end fishing
	17.04.2013	16:01	55° 35.90'	18° 32.73'	91.4	SW 8	279	1.9	pelagic trawl	on deck
185	17.04.2013	16:55	55° 37.01'	18° 19.00'	93.2	SW 7	233	1.3	CTD	surface
	17.04.2013	17:02	55° 36.99'	18° 19.01'	93.2	SW 7	105	0.3	CTD	on deck
	17.04.2013	17:05	55° 36.98'	18° 19.02'	93.2	SW 7	177	0.2	IKS 80	surface
	17.04.2013	17:14	55° 36.95'	18° 19.03'	93.5	SW 7	182	0.2	IKS 80	on deck
186	17.04.2013	18:48	55° 28.98'	17° 55.04'	67.9	SW 8	242	0.8	IKS 80	surface
	17.04.2013	18:54	55° 28.97'	17° 55.08'	67.9	SW 7	149	0.4	IKS 80	on deck
	17.04.2013	18:58	55° 28.96'	17° 55.10'	68.0	SW 7	106	0.1	CTD	surface
	17.04.2013	19:03	55° 28.97'	17° 55.13'	67.8	SW 8	55	0.5	CTD	on deck
187	17.04.2013	20:14	55° 25.01'	17° 35.04'	66.6	SSW 8	168	1.0	CTD	surface
	17.04.2013	20:19	55° 24.98'	17° 35.09'	66.8	SSW 8	90	0.4	CTD	on deck
	17.04.2013	20:21	55° 24.99'	17° 35.11'	67.0	SSW 8	66	0.4	IKS 80	surface
	17.04.2013	20:27	55° 24.98'	17° 35.15'	67.0	SSW 8	148	0.2	IKS 80	on deck
188	17.04.2013	21:14	55° 21.54'	17° 22.21'	70.1	SSW 9	246	4.6	Bongo net	surface
	17.04.2013	21:27	55° 21.01'	17° 22.08'	71.8	S 8	262	1.9	Bongo net	on deck
	17.04.2013	21:31	55° 21.00'	17° 22.01'	71.9	SSW 8	87	0.2	CTD	surface
	17.04.2013	21:37	55° 21.00'	17° 22.06'	71.8	SSW 8	180	0.1	CTD	on deck
189	17.04.2013	22:32	55° 21.05'	17° 5.12'	67.8	S 10	243	1.6	CTD	surface
	17.04.2013	22:37	55° 21.00'	17° 5.07'	67.8	S 10	171	0.7	CTD	on deck
	17.04.2013	22:41	55° 20.95'	17° 5.07'	68.1	S 10	184	1.6	Bongo net	surface
	17.04.2013	22:52	55° 20.47'	17° 5.06'	69.0	SSE 9	193	1.9	Bongo net	on deck
190	17.04.2013	23:50	55° 21.87'	16° 47.76'	65.0	SSE 10	212	1.3	Bongo net	surface
	18.04.2013	00:01	55° 21.41'	16° 47.91'	66.1	SSE 9	167	2.3	Bongo net	on deck
	18.04.2013	00:07	55° 21.06'	16° 47.96'	66.4	SSE 9	197	1.8	CTD	surface
	18.04.2013	00:12	55° 21.02'	16° 47.94'	66.5	SSE 9	145	0.4	CTD	on deck
191	18.04.2013	00:51	55° 15.08'	16° 47.91'	76.6	SSE 9	131	0.3	CTD	surface
	18.04.2013	00:56	55° 15.06'	16° 47.97'	76.7	SSE 9	160	0.3	CTD	on deck
	18.04.2013	01:00	55° 15.02'	16° 47.98'	77.0	SSE 9	158	1.6	Bongo net	surface
	18.04.2013	01:12	55° 14.52'	16° 48.36'	78.8	SSE 9	118	1.8	Bongo net	on deck
192	18.04.2013	02:07	55° 15.73'	17° 4.47'	81.7	S 10	153	1.7	Bongo net	surface
	18.04.2013	02:20	55° 15.16'	17° 4.95'	83.3	S 10	154	3.1	Bongo net	on deck

GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel: Cruise report AL413

	18.04.2013	02:24	55° 15.01'	17° 4.99'	84.5	S 9	188	0.6	CTD	surface
	18.04.2013	02:30	55° 15.00'	17° 5.04'	84.6	SSE 9	20	0.4	CTD	on deck
193	18.04.2013	03:59	55° 15.00'	17° 5.02'	84.6	SSE 11	267	0.3	Helgoländer net	surface
	18.04.2013	04:12	55° 15.00'	17° 5.07'	84.7	SSE 11	315	0.2	Helgoländer net	on deck
	18.04.2013	04:16	55° 15.03'	17° 5.06'	84.5	S 11	74	1.4	pelagic trawl	surface
	18.04.2013	04:30	55° 15.01'	17° 6.43'	84.7	SSE 10	89	3.1	pelagic trawl	start fishing
	18.04.2013	04:59	55° 15.04'	17° 8.88'	86.0	SSE 10	88	2.9	pelagic trawl	end fishing
	18.04.2013	05:14	55° 14.69'	17° 9.59'	88.4	SSE 10	169	2.2	pelagic trawl	on deck
194	18.04.2013	05:56	55° 14.19'	17° 20.48'	91.4	S 11	95	3.3	Bongo net	surface
	18.04.2013	06:13	55° 14.02'	17° 21.82'	89.7	SSE 10	103	2.7	Bongo net	on deck
	18.04.2013	06:15	55° 14.01'	17° 21.95'	89.9	SSE 10	95	1.2	CTD	surface
	18.04.2013	06:21	55° 14.01'	17° 21.98'	89.9	SSE 11	236	0.1	CTD	on deck
	18.04.2013	06:24	55° 14.01'	17° 22.04'	90.1	S 11	98	2.9	pelagic trawl	surface
	18.04.2013	06:37	55° 14.01'	17° 23.34'	89.5	S 11	74	3.1	pelagic trawl	start fishing
	18.04.2013	07:07	55° 14.45'	17° 25.85'	89.7	S 12	81	3.0	pelagic trawl	end fishing
	18.04.2013	07:19	55° 14.61'	17° 26.72'	90.6	S 11	77	3.2	pelagic trawl	on deck
195	18.04.2013	09:58	55° 17.21'	17° 34.98'	84.8	S 12	111	1.0	CTD	surface
	18.04.2013	10:04	55° 17.18'	17° 34.98'	85.1	S 12	182	0.5	CTD	on deck
	18.04.2013	10:08	55° 17.17'	17° 35.00'	85.0	S 12	119	0.5	IKS 80	surface
	18.04.2013	10:15	55° 17.15'	17° 34.98'	84.8	S 12	252	0.4	IKS 80	on deck
	18.04.2013	10:23	55° 17.08'	17° 34.93'	84.7	S 12	172	2.8	pelagic trawl	surface
	18.04.2013	10:32	55° 16.59'	17° 35.01'	85.7	S 12	176	2.8	pelagic trawl	start fishing
	18.04.2013	11:02	55° 15.24'	17° 35.26'	84.6	S 12	173	2.7	pelagic trawl	end fishing
	18.04.2013	11:13	55° 14.91'	17° 35.40'	82.2	S 11	135	1.8	pelagic trawl	on deck
196	18.04.2013	12:19	55° 13.99'	17° 55.01'	61.4	SSW 12	112	1.4	IKS 80	surface
	18.04.2013	12:24	55° 13.98'	17° 55.06'	61.1	SSW 12	171	0.2	IKS 80	on deck
	18.04.2013	12:28	55° 13.98'	17° 55.09'	60.5	SSW 11	136	0.5	CTD	surface
	18.04.2013	12:33	55° 13.97'	17° 55.08'	60.8	SSW 12	289	0.2	CTD	on deck
197	18.04.2013	14:08	55° 22.99'	18° 18.98'	86.4	WSW 8	193	0.8	CTD	surface
	18.04.2013	14:15	55° 23.00'	18° 18.94'	85.4	W 8	15	0.3	CTD	on deck
	18.04.2013	14:17	55° 23.01'	18° 18.95'	84.5	W 8	44	0.2	IKS 80	surface
	18.04.2013	14:24	55° 22.99'	18° 18.96'	86.3	W 8	141	0.5	IKS 80	on deck
	18.04.2013	14:27	55° 22.97'	18° 19.00'	87.1	W 8	142	1.5	pelagic trawl	surface
	18.04.2013	14:43	55° 22.15'	18° 19.76'	81.6	W 8	152	3.1	pelagic trawl	start fishing
	18.04.2013	15:13	55° 20.76'	18° 21.07'	81.2	W 9	150	3.0	pelagic trawl	end fishing
	18.04.2013	15:30	55° 20.26'	18° 20.48'	80.9	W 9	248	2.7	pelagic trawl	on deck
198	18.04.2013	17:03	55° 22.36'	18° 46.21'	87.7	WSW 6	150	1.2	IKS 80	surface
	18.04.2013	17:12	55° 22.33'	18° 46.28'	87.8	WSW 6	122	0.4	IKS 80	on deck
	18.04.2013	17:15	55° 22.32'	18° 46.32'	87.9	WSW 6	107	0.6	CTD	surface
	18.04.2013	17:21	55° 22.30'	18° 46.42'	88.0	WSW 7	111	0.6	CTD	on deck
199	18.04.2013	18:24	55° 17.99'	19° 4.08'	82.1	WSW 8	158	1.3	CTD	surface
	18.04.2013	18:30	55° 18.00'	19° 4.08'	82.1	W 7	359	0.3	CTD	on deck
	18.04.2013	18:33	55° 18.00'	19° 4.09'	82.0	W 8	137	0.3	IKS 80	surface
	18.04.2013	18:41	55° 17.98'	19° 4.08'	81.7	WSW 7	255	1.4	IKS 80	on deck
200	18.04.2013	19:54	55° 10.01'	18° 49.05'	91.9	WSW 9	147	0.5	IKS 80	surface
	18.04.2013	20:02	55° 10.00'	18° 49.09'	91.9	WSW 9	113	0.3	IKS 80	on deck
	18.04.2013	20:05	55° 9.99'	18° 49.11'	91.9	WSW 9	174	0.5	CTD	surface
	18.04.2013	20:12	55° 9.95'	18° 49.10'	91.9	WSW 9	320	0.1	CTD	on deck
201	18.04.2013	21:12	55° 14.98'	18° 37.03'	75.9	WSW 12	155	0.3	CTD	surface
	18.04.2013	21:18	55° 14.97'	18° 37.09'	75.5	WSW 12	148	0.4	CTD	on deck
	18.04.2013	21:20	55° 14.96'	18° 37.09'	76.3	WSW 12	158	0.3	IKS 80	surface
	18.04.2013	21:28	55° 14.94'	18° 37.10'	76.9	WSW 11	225	0.2	IKS 80	on deck
202	18.04.2013	22:30	55° 9.06'	18° 25.09'	80.6	SW 10	204	0.7	IKS 80	surface
	18.04.2013	22:36	55° 9.01'	18° 25.12'	79.8	SW 10	168	0.8	IKS 80	on deck
	18.04.2013	22:41	55° 8.97'	18° 25.10'	79.8	SW 10	160	0.2	CTD	surface
	18.04.2013	22:46	55° 8.95'	18° 25.12'	80.1	SW 11	155	0.4	CTD	on deck
203	19.04.2013	00:02	54° 59.92'	18° 41.11'	92.3	WSW 10	145	0.7	CTD	surface
	19.04.2013	00:07	54° 59.90'	18° 41.07'	92.7	WSW 10	281	0.4	CTD	on deck
	19.04.2013	00:12	54° 59.87'	18° 41.04'	92.7	WSW 10	161	0.4	IKS 80	surface
	19.04.2013	00:17	54° 59.85'	18° 41.02'	92.6	SW 10	253	0.3	IKS 80	on deck
204	19.04.2013	01:16	54° 54.00'	18° 53.88'	99.3	SW 8	155	0.3	IKS 80	surface
	19.04.2013	01:23	54° 53.97'	18° 53.87'	98.6	SW 8	213	0.3	IKS 80	on deck
	19.04.2013	01:27	54° 53.96'	18° 53.87'	98.3	SW 8	157	0.1	CTD	surface
	19.04.2013	01:33	54° 53.93'	18° 53.90'	98.3	SW 8	165	0.6	CTD	on deck
	19.04.2013	04:04	54° 53.82'	18° 53.89'	99.2	SSW 8	205	3.3	pelagic trawl	surface
	19.04.2013	04:13	54° 53.36'	18° 53.51'	98.3	SSW 8	206	2.9	pelagic trawl	start fishing
	19.04.2013	04:43	54° 52.03'	18° 52.39'	97.3	SSW 8	205	3.2	pelagic trawl	end fishing
	19.04.2013	04:55	54° 51.58'	18° 52.07'	97.7	SSW 8	202	2.5	pelagic trawl	on deck
205	19.04.2013	06:04	55° 0.03'	19° 5.04'	101.3	SSW 9	117	2.0	CTD	surface
	19.04.2013	06:11	54° 59.97'	19° 5.08'	101.7	SSW 9	139	0.3	CTD	on deck
	19.04.2013	06:14	54° 59.96'	19° 5.10'	101.1	SSW 9	191	0.6	IKS 80	surface
	19.04.2013	06:23	54° 59.95'	19° 5.11'	101.2	SSW 9	117	0.2	IKS 80	on deck
	19.04.2013	06:26	54° 59.96'	19° 5.11'	101.0	SW 10	248	0.7	pelagic trawl	surface
	19.04.2013	06:38	54° 59.33'	19° 5.33'	101.5	SSW 10	159	2.9	pelagic trawl	start fishing
	19.04.2013	07:08	54° 57.89'	19° 6.13'	105.2	SSW 9	165	3.1	pelagic trawl	end fishing
	19.04.2013	07:23	54° 57.29'	19° 6.02'	102.4	SSW 9	202	2.6	pelagic trawl	on deck
206	19.04.2013	07:55	54° 53.98'	19° 11.96'	106.6	SSW 9	142	2.1	IKS 80	surface

GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel: Cruise report AL413

	19.04.2013	08:04	54° 53.95'	19° 12.02'	106.5	SSW 8	133	0.2	IKS 80	on deck
	19.04.2013	08:06	54° 53.96'	19° 12.03'	106.8	SSW 8	66	0.2	Helgoländer net	surface
	19.04.2013	08:23	54° 53.95'	19° 11.99'	110.6	SSW 8	8	0.3	Helgoländer net	on deck
	19.04.2013	08:26	54° 53.94'	19° 11.96'	107.6	SSW 8	5	0.1	CTD	surface
	19.04.2013	08:34	54° 53.95'	19° 11.99'	110.3	SSW 8	340	0.3	CTD	on deck
	19.04.2013	08:36	54° 53.95'	19° 11.97'	106.8	SSW 9	232	1.8	pelagic trawl	surface
	19.04.2013	08:49	54° 53.36'	19° 11.36'	106.7	SSW 8	210	3.1	pelagic trawl	start fishing
	19.04.2013	09:19	54° 52.14'	19° 10.14'	105.9	S 8	210	3.0	pelagic trawl	end fishing
	19.04.2013	09:29	54° 51.86'	19° 9.81'	105.4	S 9	212	2.0	pelagic trawl	on deck
207	19.04.2013	09:53	54° 49.08'	19° 8.07'	104.0	SSW 9	199	1.5	CTD	surface
	19.04.2013	10:00	54° 49.04'	19° 8.06'	103.6	SSW 10	231	0.6	CTD	on deck
	19.04.2013	10:03	54° 49.03'	19° 8.04'	103.4	SSW 9	152	0.3	IKS 80	surface
	19.04.2013	10:12	54° 48.94'	19° 8.13'	105.9	SW 8	167	0.7	IKS 80	on deck
	19.04.2013	10:15	54° 48.89'	19° 8.15'	103.5	WNW 8	189	1.7	pelagic trawl	surface
	19.04.2013	10:27	54° 48.30'	19° 7.63'	103.2	WNW 7	203	2.9	pelagic trawl	start fishing
	19.04.2013	10:57	54° 46.99'	19° 6.68'	101.2	WNW 6	202	2.8	pelagic trawl	end fishing
	19.04.2013	11:07	54° 46.60'	19° 6.59'	100.3	WNW 7	181	2.9	pelagic trawl	on deck
208	19.04.2013	11:49	54° 42.95'	19° 17.02'	98.3	NW 5	168	0.8	IKS 80	surface
	19.04.2013	11:58	54° 42.84'	19° 16.97'	98.3	WNW 4	218	0.5	IKS 80	on deck
	19.04.2013	12:02	54° 42.82'	19° 16.93'	98.0	NW 3	237	0.4	CTD	surface
	19.04.2013	12:09	54° 42.80'	19° 16.84'	97.9	NW 2	262	0.6	CTD	on deck
	19.04.2013	12:11	54° 42.79'	19° 16.78'	98.0	NW 2	264	1.9	pelagic trawl	surface
	19.04.2013	12:22	54° 42.63'	19° 15.75'	100.8	NNW 1	253	2.7	pelagic trawl	start fishing
	19.04.2013	12:54	54° 42.14'	19° 13.36'	99.0	NW 6	249	2.6	pelagic trawl	end fishing
	19.04.2013	13:07	54° 41.88'	19° 12.71'	97.0	NW 5	218	2.4	pelagic trawl	on deck
209	21.04.2013	17:40	55° 7.53'	16° 30.02'	51.1	E 11	116	0.5	CTD	surface
	21.04.2013	17:44	55° 7.58'	16° 30.05'	50.7	E 11	53	0.8	CTD	on deck
	21.04.2013	17:48	55° 7.60'	16° 30.16'	51.3	E 12	80	2.6	Bongo net	surface
	21.04.2013	17:58	55° 7.63'	16° 30.99'	51.4	E 12	128	1.4	Bongo net	on deck
210	21.04.2013	18:53	55° 7.46'	16° 13.71'	81.7	ESE 11	202	2.2	Bongo net	surface
	21.04.2013	19:06	55° 7.49'	16° 14.73'	83.0	E 11	95	2.9	Bongo net	on deck
	21.04.2013	19:09	55° 7.48'	16° 14.90'	80.2	E 10	83	0.6	CTD	surface
	21.04.2013	19:14	55° 7.50'	16° 14.90'	80.5	E 11	152	0.1	CTD	on deck
211	21.04.2013	20:14	54° 57.49'	16° 14.92'	50.1	ESE 9	72	1.2	CTD	surface
	21.04.2013	20:18	54° 57.51'	16° 14.95'	50.1	ESE 9	62	0.5	CTD	on deck
	21.04.2013	20:21	54° 57.52'	16° 14.99'	49.9	ESE 10	96	2.3	Bongo net	surface
	21.04.2013	20:29	54° 57.48'	16° 15.59'	48.2	ESE 9	103	2.2	Bongo net	on deck
212	21.04.2013	21:23	54° 57.46'	15° 58.93'	78.0	SE 9	119	2.1	Bongo net	surface
	21.04.2013	21:36	54° 57.47'	15° 59.93'	74.4	ESE 9	106	1.2	Bongo net	on deck
	21.04.2013	21:39	54° 57.44'	15° 59.97'	75.9	ESE 9	189	0.7	CTD	surface
	21.04.2013	21:44	54° 57.43'	15° 59.94'	73.7	ESE 9	64	0.4	CTD	on deck
213	21.04.2013	22:44	54° 47.54'	16° 0.06'	52.2	ESE 8	157	1.3	CTD	surface
	21.04.2013	22:48	54° 47.51'	16° 0.04'	51.9	ESE 8	202	0.4	CTD	on deck
	21.04.2013	22:52	54° 47.49'	16° 0.09'	51.9	ESE 8	79	1.4	Bongo net	surface
	21.04.2013	23:01	54° 47.47'	16° 0.77'	50.1	ESE 8	98	2.9	Bongo net	on deck
	21.04.2013	23:24	54° 47.39'	15° 59.97'	52.3	ESE 8	56	3.0	Bongo net	surface
	21.04.2013	23:32	54° 47.36'	16° 0.57'	50.8	SE 8	102	2.7	Bongo net	on deck
214	22.04.2013	00:51	54° 37.79'	15° 44.48'	60.8	ESE 9	163	1.6	Bongo net	surface
	22.04.2013	01:00	54° 37.53'	15° 45.01'	60.2	ESE 8	133	2.3	Bongo net	on deck
	22.04.2013	01:05	54° 37.45'	15° 45.03'	60.3	ESE 8	190	0.9	CTD	surface
	22.04.2013	01:10	54° 37.39'	15° 44.99'	60.0	ESE 8	204	0.6	CTD	on deck
215	22.04.2013	02:05	54° 37.49'	15° 30.00'	63.8	ESE 8	145	1.0	CTD	surface
	22.04.2013	02:09	54° 37.47'	15° 30.05'	63.8	ESE 8	95	0.4	CTD	on deck
	22.04.2013	02:13	54° 37.47'	15° 30.15'	63.8	ESE 9	98	3.1	Bongo net	surface
	22.04.2013	02:23	54° 37.40'	15° 30.98'	63.7	ESE 8	99	2.5	Bongo net	on deck
216	22.04.2013	03:26	54° 37.91'	15° 14.15'	59.7	ESE 8	119	2.7	Bongo net	surface
	22.04.2013	03:36	54° 37.65'	15° 14.89'	59.3	ESE 8	138	3.8	Bongo net	on deck
	22.04.2013	03:40	54° 37.50'	15° 14.95'	59.1	SE 8	144	0.9	CTD	surface
	22.04.2013	03:44	54° 37.49'	15° 14.99'	59.3	ESE 8	64	0.1	CTD	on deck
217	22.04.2013	05:03	54° 47.52'	15° 0.04'	60.6	ESE 8	116	1.2	CTD	surface
	22.04.2013	05:08	54° 47.48'	15° 0.04'	60.7	ESE 7	263	0.4	CTD	on deck
	22.04.2013	05:11	54° 47.48'	15° 0.09'	60.7	SE 8	81	2.8	Bongo net	surface
	22.04.2013	05:22	54° 47.57'	15° 1.03'	61.3	SE 8	80	2.2	Bongo net	on deck
218	22.04.2013	06:10	54° 47.50'	15° 14.41'	67.7	SE 8	135	4.9	Bongo net	surface
	22.04.2013	06:22	54° 47.27'	15° 15.32'	71.3	SE 7	43	2.3	Bongo net	on deck
	22.04.2013	06:26	54° 47.47'	15° 15.04'	79.6	ESE 8	10	1.1	CTD	surface
	22.04.2013	06:31	54° 47.49'	15° 15.10'	68.1	SE 7	124	1.3	CTD	on deck
219	22.04.2013	07:22	54° 47.51'	15° 29.99'	74.0	ESE 6	87	0.9	CTD	surface
	22.04.2013	07:28	54° 47.50'	15° 29.99'	74.1	SE 6	169	0.3	CTD	on deck
	22.04.2013	07:31	54° 47.49'	15° 30.02'	76.9	SE 6	95	2.0	Bongo net	surface
	22.04.2013	07:43	54° 47.46'	15° 31.10'	77.6	SE 6	92	4.1	Bongo net	on deck
220	22.04.2013	08:26	54° 47.44'	15° 43.96'	75.8	SSE 5	60	4.1	Bongo net	surface
	22.04.2013	08:38	54° 47.47'	15° 44.94'	72.4	SE 5	81	1.6	Bongo net	on deck
	22.04.2013	08:41	54° 47.48'	15° 44.98'	74.3	SE 5	326	0.1	CTD	surface
	22.04.2013	08:46	54° 47.48'	15° 44.97'	72.4	SSE 5	162	0.0	CTD	on deck
221	22.04.2013	09:45	54° 57.51'	15° 45.00'	83.2	SE 4	45	0.8	CTD	surface
	22.04.2013	09:51	54° 57.50'	15° 45.02'	81.6	SE 4	163	0.4	CTD	on deck

	22.04.2013	09:59	54° 57.48'	15° 45.07'	82.7	SSE 4	46	0.3	CTD/rosette water sampler	surface
	22.04.2013	10:16	54° 57.49'	15° 45.08'	81.6	SE 4	268	0.6	CTD/rosette water sampler	on deck
	22.04.2013	10:23	54° 57.39'	15° 44.77'	83.8	SE 4	247	3.2	Bongo net	surface
	22.04.2013	10:35	54° 57.28'	15° 43.75'	83.4	SE 3	274	2.4	Bongo net	on deck
222	22.04.2013	11:20	54° 57.31'	15° 31.01'	77.3	S 2	278	2.7	Bongo net	surface
	22.04.2013	11:34	54° 57.51'	15° 29.91'	79.8	SW 3	299	1.9	Bongo net	on deck
	22.04.2013	11:37	54° 57.51'	15° 29.84'	80.4	SW 3	247	0.4	CTD	surface
	22.04.2013	11:42	54° 57.49'	15° 29.81'	77.1	WSW 3	195	0.3	CTD	on deck
223	22.04.2013	12:35	54° 57.51'	15° 15.16'	44.1	SW 4	256	0.6	CTD	surface
	22.04.2013	12:38	54° 57.50'	15° 15.14'	44.0	SW 4	214	0.2	CTD	on deck
	22.04.2013	12:42	54° 57.51'	15° 15.10'	44.4	SW 4	346	1.2	Bongo net	surface
	22.04.2013	12:49	54° 57.81'	15° 15.14'	44.8	SW 4	8	2.5	Bongo net	on deck
224	22.04.2013	13:44	55° 7.01'	15° 14.90'	61.8	SSW 5	5	2.6	Bongo net	surface
	22.04.2013	13:55	55° 7.53'	15° 15.06'	62.3	S 4	8	2.6	Bongo net	on deck
	22.04.2013	13:59	55° 7.51'	15° 14.98'	62.3	S 4	222	0.5	CTD	surface
	22.04.2013	14:04	55° 7.49'	15° 14.93'	62.2	S 4	253	0.5	CTD	on deck
225	22.04.2013	15:00	55° 7.51'	15° 30.01'	68.0	SW 7	187	0.5	CTD	surface
	22.04.2013	15:05	55° 7.50'	15° 29.98'	68.0	SW 7	261	0.2	CTD	on deck
	22.04.2013	15:08	55° 7.48'	15° 30.04'	68.0	SW 7	97	1.7	Bongo net	surface
	22.04.2013	15:20	55° 7.34'	15° 31.02'	69.4	SW 8	103	2.7	Bongo net	on deck
226	22.04.2013	16:02	55° 7.56'	15° 43.34'	91.5	SW 6	76	3.1	Bongo net	surface
	22.04.2013	16:19	55° 7.59'	15° 44.91'	89.8	SW 5	93	3.1	Bongo net	on deck
	22.04.2013	16:22	55° 7.54'	15° 44.97'	89.8	WSW 5	214	1.3	CTD	surface
	22.04.2013	16:30	55° 7.50'	15° 45.00'	91.2	WSW 7	83	0.7	CTD	on deck
227	22.04.2013	17:23	55° 7.49'	16° 0.03'	90.6	WSW 6	165	0.5	CTD	surface
	22.04.2013	17:29	55° 7.47'	16° 0.05'	90.3	SW 6	54	0.4	CTD	on deck
	22.04.2013	17:32	55° 7.50'	16° 0.05'	90.1	WSW 7	332	2.2	Bongo net	surface
	22.04.2013	17:48	55° 8.24'	15° 59.53'	90.8	WSW 8	350	3.0	Bongo net	on deck
228	22.04.2013	18:38	55° 16.86'	16° 0.01'	89.6	WSW 5	286	3.1	Bongo net	surface
	22.04.2013	18:52	55° 17.46'	15° 59.81'	89.6	SW 6	38	3.0	Bongo net	on deck
	22.04.2013	18:56	55° 17.47'	15° 59.97'	89.6	SW 6	135	0.5	CTD	surface
	22.04.2013	19:02	55° 17.44'	15° 59.99'	91.3	SW 7	199	0.1	CTD	on deck
229	22.04.2013	19:54	55° 17.54'	15° 45.06'	101.0	SW 7	215	1.2	CTD	surface
	22.04.2013	20:01	55° 17.53'	15° 45.00'	96.0	SW 7	119	0.1	CTD	on deck
	22.04.2013	20:03	55° 17.53'	15° 45.01'	96.2	SW 7	82	0.3	Bongo net	surface
	22.04.2013	20:19	55° 17.04'	15° 43.99'	96.2	SW 7	266	3.5	Bongo net	on deck
230	22.04.2013	21:02	55° 17.86'	15° 31.05'	94.6	WSW 8	267	5.9	Bongo net	surface
	22.04.2013	21:16	55° 17.44'	15° 30.14'	93.9	SW 8	277	2.6	Bongo net	on deck
	22.04.2013	21:19	55° 17.49'	15° 30.04'	93.7	SW 8	334	0.7	CTD	surface
	22.04.2013	21:26	55° 17.44'	15° 29.95'	93.7	WSW 8	234	0.7	CTD	on deck
231	22.04.2013	22:12	55° 17.50'	15° 17.11'	89.7	SW 8	317	0.3	CTD	surface
	22.04.2013	22:18	55° 17.50'	15° 17.09'	89.7	WSW 8	133	0.1	CTD	on deck
	22.04.2013	22:21	55° 17.47'	15° 17.07'	89.1	WSW 8	212	1.5	Bongo net	surface
	22.04.2013	22:35	55° 17.06'	15° 16.23'	78.3	SW 7	240	2.3	Bongo net	on deck
232	22.04.2013	23:30	55° 17.65'	15° 0.70'	73.0	SW 7	216	2.3	Bongo net	surface
	22.04.2013	23:42	55° 17.21'	15° 0.04'	71.8	SW 7	221	2.7	Bongo net	on deck
	22.04.2013	23:47	55° 17.15'	14° 59.92'	71.6	SW 6	241	0.6	CTD	surface
	22.04.2013	23:53	55° 17.14'	14° 59.86'	71.7	SW 6	256	0.2	CTD	on deck
233	23.04.2013	01:12	55° 27.43'	14° 44.97'	70.1	SW 8	258	0.3	CTD	surface
	23.04.2013	01:17	55° 27.44'	14° 44.95'	70.0	SSW 8	328	0.0	CTD	on deck
	23.04.2013	01:21	55° 27.42'	14° 45.03'	70.1	SSW 8	97	2.1	Bongo net	surface
	23.04.2013	01:31	55° 27.31'	14° 45.87'	70.3	SSW 9	105	2.5	Bongo net	on deck
234	23.04.2013	03:58	55° 17.60'	15° 17.04'	90.5	SSW 11	195	3.0	pelagic trawl	surface
	23.04.2013	04:14	55° 16.85'	15° 17.24'	82.9	SSW 10	113	3.0	pelagic trawl	start fishing
	23.04.2013	04:44	55° 16.37'	15° 19.65'	96.5	SSW 11	109	2.8	pelagic trawl	end fishing
	23.04.2013	05:01	55° 15.88'	15° 19.96'	92.3	SSW 11	190	2.2	pelagic trawl	on deck
235	23.04.2013	05:45	55° 17.48'	15° 29.98'	93.6	SSW 12	220	1.7	pelagic trawl	surface
	23.04.2013	05:57	55° 16.95'	15° 29.35'	92.8	SSW 11	216	2.9	pelagic trawl	start fishing
	23.04.2013	06:27	55° 15.71'	15° 27.83'	91.5	SSW 11	210	3.0	pelagic trawl	end fishing
	23.04.2013	06:38	55° 15.35'	15° 27.51'	91.9	SSW 11	187	2.0	pelagic trawl	on deck
236	23.04.2013	07:54	55° 28.12'	15° 30.46'	85.2	SW 10	144	2.0	Bongo net	surface
	23.04.2013	08:08	55° 27.54'	15° 30.10'	85.2	WSW 12	222	1.9	Bongo net	on deck
	23.04.2013	08:11	55° 27.51'	15° 30.03'	91.6	WSW 12	262	0.5	CTD	surface
	23.04.2013	08:19	55° 27.52'	15° 30.01'	85.3	WSW 13	268	0.1	CTD	on deck
	23.04.2013	08:21	55° 27.50'	15° 29.97'	85.4	WSW 13	233	3.1	pelagic trawl	surface
	23.04.2013	08:34	55° 27.07'	15° 28.97'	86.2	WSW 13	238	2.9	pelagic trawl	start fishing
	23.04.2013	09:04	55° 26.33'	15° 26.81'	88.5	SW 14	235	2.7	pelagic trawl	end fishing
	23.04.2013	09:16	55° 26.03'	15° 26.29'	89.5	WSW 14	167	2.5	pelagic trawl	on deck
237	23.04.2013	10:29	55° 27.85'	15° 15.86'	90.6	WSW 14	230	2.3	Bongo net	surface
	23.04.2013	10:43	55° 27.49'	15° 15.04'	90.7	WSW 13	191	0.3	Bongo net	on deck
	23.04.2013	10:46	55° 27.47'	15° 15.06'	90.6	WSW 14	173	0.3	CTD	surface
	23.04.2013	10:52	55° 27.43'	15° 15.03'	92.6	WSW 14	268	0.3	CTD	on deck
	23.04.2013	10:55	55° 27.40'	15° 14.99'	92.4	WSW 14	235	2.2	pelagic trawl	surface
	23.04.2013	11:05	55° 27.14'	15° 14.26'	93.7	WSW 14	239	2.9	pelagic trawl	start fishing
	23.04.2013	11:36	55° 26.49'	15° 12.09'	85.0	WSW 13	243	2.8	pelagic trawl	end fishing

238	23.04.2013	11:47	55° 26.27'	15° 11.74'	84.8	WSW 13	147	2.0	pelagic trawl	on deck
	23.04.2013	12:51	55° 27.85'	15° 1.28'	77.0	WSW 12	234	1.4	Bongo net	surface
	23.04.2013	13:03	55° 27.60'	15° 0.44'	79.2	WSW 13	240	2.3	Bongo net	on deck
	23.04.2013	13:06	55° 27.56'	15° 0.35'	78.5	WSW 13	203	0.2	CTD	surface
	23.04.2013	13:12	55° 27.54'	15° 0.35'	78.8	WSW 13	124	0.5	CTD	on deck
	23.04.2013	13:14	55° 27.52'	15° 0.32'	78.8	WSW 14	233	2.7	pelagic trawl	surface
	23.04.2013	13:23	55° 27.26'	14° 59.68'	76.0	WSW 14	236	3.1	pelagic trawl	start fishing
	23.04.2013	13:53	55° 26.41'	14° 57.71'	67.9	SW 14	233	3.8	pelagic trawl	end fishing
	23.04.2013	14:05	55° 26.09'	14° 57.31'	70.6	WSW 14	180	2.0	pelagic trawl	on deck
239	23.04.2013	16:52	55° 37.51'	14° 45.03'	69.1	WSW 13	244	1.8	CTD	surface
	23.04.2013	16:57	55° 37.50'	14° 45.02'	67.3	WSW 12	50	0.4	CTD	on deck
	23.04.2013	17:01	55° 37.48'	14° 44.96'	69.1	WSW 12	239	2.9	Bongo net	surface
	23.04.2013	17:12	55° 37.15'	14° 44.26'	72.1	SW 13	241	3.0	Bongo net	on deck
	23.04.2013	18:23	55° 37.86'	15° 0.96'	80.5	WSW 13	205	2.2	Bongo net	surface
240	23.04.2013	18:34	55° 37.53'	15° 0.23'	80.4	WSW 12	237	3.1	Bongo net	on deck
	23.04.2013	18:38	55° 37.50'	15° 0.09'	82.0	SW 11	5	0.2	CTD	surface
	23.04.2013	18:43	55° 37.51'	15° 0.11'	83.0	WSW 12	97	0.1	CTD	on deck
241	23.04.2013	19:34	55° 37.53'	15° 14.99'	75.8	WSW 13	131	1.1	CTD	surface
	23.04.2013	19:40	55° 37.53'	15° 15.06'	75.6	WSW 13	111	0.4	CTD	on deck
	23.04.2013	19:43	55° 37.51'	15° 15.07'	76.4	WSW 13	225	1.8	Bongo net	surface
	23.04.2013	19:55	55° 37.19'	15° 14.39'	78.3	WSW 12	242	2.1	Bongo net	on deck
242	23.04.2013	20:53	55° 37.60'	15° 30.99'	66.9	WSW 12	192	1.8	Bongo net	surface
	23.04.2013	21:03	55° 37.43'	15° 30.34'	66.7	WSW 12	289	2.9	Bongo net	on deck
	23.04.2013	21:06	55° 37.48'	15° 30.14'	67.9	WSW 13	292	1.6	CTD	surface
	23.04.2013	21:11	55° 37.45'	15° 30.17'	68.7	WSW 12	127	0.6	CTD	on deck
243	23.04.2013	22:07	55° 37.48'	15° 45.04'	69.2	WSW 11	142	0.8	CTD	surface
	23.04.2013	22:12	55° 37.46'	15° 45.00'	69.0	WSW 11	204	0.7	CTD	on deck
	23.04.2013	22:15	55° 37.42'	15° 44.94'	69.5	WSW 11	236	1.9	Bongo net	surface
	23.04.2013	22:28	55° 37.17'	15° 44.02'	69.3	WSW 12	244	2.4	Bongo net	on deck
244	23.04.2013	23:36	55° 27.66'	15° 45.88'	87.0	W 13	231	1.4	Bongo net	surface
	23.04.2013	23:49	55° 27.47'	15° 44.91'	85.7	WSW 12	254	1.5	Bongo net	on deck
	23.04.2013	23:52	55° 27.45'	15° 44.86'	85.4	WSW 12	200	0.5	CTD	surface
	23.04.2013	23:57	55° 27.44'	15° 44.86'	85.3	WSW 12	316	0.3	CTD	on deck
245	24.04.2013	04:01	54° 57.48'	15° 29.66'	76.7	W 10	274	3.2	pelagic trawl	surface
	24.04.2013	04:19	54° 56.89'	15° 28.53'	77.6	W 9	209	3.0	pelagic trawl	start fishing
	24.04.2013	04:48	54° 55.67'	15° 27.38'	77.7	W 9	209	2.7	pelagic trawl	end fishing
	24.04.2013	05:04	54° 55.08'	15° 27.38'	76.3	W 10	157	2.6	pelagic trawl	on deck
246	24.04.2013	05:07	54° 54.96'	15° 27.48'	76.2	WSW 10	162	4.1	pelagic trawl	surface
	24.04.2013	06:18	54° 47.43'	15° 28.99'	76.2	WSW 8	251	3.1	pelagic trawl	start fishing
	24.04.2013	06:48	54° 47.09'	15° 26.74'	73.1	WSW 8	258	2.6	pelagic trawl	end fishing
	24.04.2013	06:58	54° 46.96'	15° 26.20'	76.7	W 8	229	2.2	pelagic trawl	on deck
247	24.04.2013	07:46	54° 47.49'	15° 15.39'	67.7	WSW 5	255	1.3	pelagic trawl	surface
	24.04.2013	07:59	54° 47.27'	15° 14.33'	67.6	WSW 7	251	2.8	pelagic trawl	start fishing
	24.04.2013	08:29	54° 46.84'	15° 12.26'	66.7	WSW 8	246	2.6	pelagic trawl	end fishing
	24.04.2013	08:39	54° 46.67'	15° 11.69'	66.5	WSW 8	226	2.4	pelagic trawl	on deck
248	24.04.2013	11:04	55° 7.26'	15° 15.19'	61.8	SW 12	119	1.2	pelagic trawl	surface
	24.04.2013	11:20	55° 6.61'	15° 15.45'	63.8	WSW 10	137	2.7	pelagic trawl	start fishing
	24.04.2013	11:50	55° 5.75'	15° 17.07'	70.5	SW 10	132	2.4	pelagic trawl	end fishing
	24.04.2013	12:11	55° 5.21'	15° 17.37'	71.2	SW 9	69	5.0	pelagic trawl	on deck
249	24.04.2013	13:14	55° 7.55'	15° 29.32'	68.0	SW 12	252	1.5	pelagic trawl	surface
	24.04.2013	13:24	55° 7.28'	15° 28.61'	69.0	SW 11	231	2.5	pelagic trawl	start fishing
	24.04.2013	13:54	55° 6.54'	15° 26.93'	73.1	SSW 11	236	2.3	pelagic trawl	end fishing
	24.04.2013	14:04	55° 6.35'	15° 26.50'	73.1	SW 9	225	2.1	pelagic trawl	on deck
250	24.04.2013	16:55	55° 17.48'	16° 15.04'	74.5	SSW 11	199	1.4	CTD	surface
	24.04.2013	17:00	55° 17.49'	16° 15.03'	74.7	SW 12	9	0.6	CTD	on deck
	24.04.2013	17:05	55° 17.44'	16° 14.94'	74.7	SW 12	205	2.5	Bongo net	surface
	24.04.2013	17:18	55° 16.85'	16° 14.36'	75.1	SW 12	220	3.0	Bongo net	on deck
251	24.04.2013	18:15	55° 17.94'	16° 30.84'	64.1	SSW 13	146	1.7	Bongo net	surface
	24.04.2013	18:25	55° 17.56'	16° 30.35'	63.9	SW 13	243	2.9	Bongo net	on deck
	24.04.2013	18:28	55° 17.53'	16° 30.13'	62.6	SW 13	236	2.0	CTD	surface
	24.04.2013	18:33	55° 17.50'	16° 30.13'	62.0	SW 12	171	0.3	CTD	on deck
252	24.04.2013	19:35	55° 27.46'	16° 30.00'	58.8	SSW 12	106	1.5	CTD	surface
	24.04.2013	19:40	55° 27.42'	16° 30.05'	59.0	SW 12	119	0.3	CTD	on deck
	24.04.2013	19:42	55° 27.41'	16° 30.06'	59.2	SW 12	185	0.6	Bongo net	surface
	24.04.2013	19:51	55° 27.12'	16° 29.67'	57.7	SW 12	253	2.3	Bongo net	on deck
253	24.04.2013	20:49	55° 27.72'	16° 15.89'	74.4	WSW 12	210	2.5	Bongo net	surface
	24.04.2013	20:59	55° 27.50'	16° 15.27'	74.8	SW 13	279	2.7	Bongo net	on deck
	24.04.2013	21:02	55° 27.53'	16° 15.08'	75.0	WSW 12	254	1.3	CTD	surface
	24.04.2013	21:08	55° 27.50'	16° 15.04'	75.3	SW 11	40	0.2	CTD	on deck
254	24.04.2013	22:11	55° 37.48'	16° 14.96'	75.4	WSW 12	40	0.8	CTD	surface
	24.04.2013	22:16	55° 37.45'	16° 15.02'	75.3	WSW 12	192	0.7	CTD	on deck
	24.04.2013	22:21	55° 37.41'	16° 14.96'	76.3	WSW 12	234	1.9	Bongo net	surface
	24.04.2013	22:34	55° 37.02'	16° 14.13'	77.1	WSW 12	234	2.6	Bongo net	on deck
255	24.04.2013	23:33	55° 37.62'	16° 30.99'	62.9	W 12	264	0.7	Bongo net	surface
	24.04.2013	23:44	55° 37.62'	16° 30.15'	63.3	W 12	291	2.0	Bongo net	on deck
	24.04.2013	23:48	55° 37.61'	16° 30.06'	63.0	W 12	246	0.6	CTD	surface
	24.04.2013	23:52	55° 37.59'	16° 30.04'	62.7	W 11	181	0.4	CTD	on deck

GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel: Cruise report AL413

256	25.04.2013	00:56	55° 47.50'	16° 29.95'	57.2	WNW 12	0	0.4	CTD	surface
	25.04.2013	01:00	55° 47.49'	16° 29.95'	56.9	WNW 11	118	0.3	CTD	on deck
	25.04.2013	01:03	55° 47.49'	16° 29.86'	57.9	WNW 11	269	1.4	Bongo net	surface
	25.04.2013	01:12	55° 47.46'	16° 29.12'	57.4	WNW 11	267	3.3	Bongo net	on deck
257	25.04.2013	02:05	55° 47.57'	16° 16.02'	60.6	W 9	256	3.2	Bongo net	surface
	25.04.2013	02:15	55° 47.48'	16° 15.17'	60.6	W 9	277	2.2	Bongo net	on deck
	25.04.2013	02:18	55° 47.50'	16° 15.05'	62.8	W 10	283	0.8	CTD	surface
	25.04.2013	02:22	55° 47.49'	16° 15.04'	59.8	W 10	90	0.7	CTD	on deck
258	25.04.2013	03:19	55° 47.49'	16° 0.02'	64.4	WNW 9	263	0.9	CTD	surface
	25.04.2013	03:23	55° 47.48'	16° 0.00'	62.3	WNW 9	220	0.2	CTD	on deck
	25.04.2013	03:26	55° 47.48'	15° 59.94'	62.7	WNW 8	270	1.6	Bongo net	surface
	25.04.2013	03:38	55° 47.53'	15° 58.90'	61.9	W 8	289	2.6	Bongo net	on deck
259	25.04.2013	04:35	55° 38.22'	16° 0.19'	74.3	WNW 9	180	3.2	Bongo net	surface
	25.04.2013	04:46	55° 37.64'	16° 0.17'	78.4	WNW 8	186	3.5	Bongo net	on deck
	25.04.2013	04:51	55° 37.50'	15° 59.98'	75.1	WNW 8	271	0.5	CTD	surface
	25.04.2013	04:56	55° 37.49'	15° 59.98'	75.0	WNW 8	174	0.5	CTD	on deck
	25.04.2013	04:57	55° 37.48'	15° 59.99'	75.2	WNW 8	147	0.8	pelagic trawl	surface
	25.04.2013	05:14	55° 37.55'	15° 58.88'	75.2	WNW 9	281	2.8	pelagic trawl	start fishing
	25.04.2013	05:44	55° 37.83'	15° 56.49'	75.4	WNW 8	279	2.8	pelagic trawl	end fishing
	25.04.2013	05:56	55° 37.86'	15° 55.75'	74.9	WNW 9	264	2.5	pelagic trawl	on deck
260	25.04.2013	07:23	55° 27.58'	16° 1.17'	83.2	WNW 7	177	6.6	Bongo net	surface
	25.04.2013	07:36	55° 27.46'	16° 0.11'	83.6	WNW 6	277	2.7	Bongo net	on deck
	25.04.2013	07:39	55° 27.49'	15° 59.98'	83.9	WNW 6	251	0.5	CTD	surface
	25.04.2013	07:45	55° 27.45'	15° 59.94'	83.7	WNW 6	201	0.6	CTD	on deck
	25.04.2013	07:46	55° 27.44'	15° 59.94'	83.7	WNW 6	179	0.5	pelagic trawl	surface
	25.04.2013	07:57	55° 27.52'	15° 58.91'	84.2	W 7	277	2.7	pelagic trawl	start fishing
	25.04.2013	08:27	55° 27.73'	15° 56.52'	85.1	W 6	273	2.6	pelagic trawl	end fishing
	25.04.2013	08:37	55° 27.73'	15° 55.83'	85.6	W 6	250	2.8	pelagic trawl	on deck
261	25.04.2013	10:05	55° 17.62'	15° 59.98'	89.8	W 5	255	2.7	pelagic trawl	surface
	25.04.2013	10:17	55° 17.66'	15° 58.88'	90.2	W 5	278	2.7	pelagic trawl	start fishing
	25.04.2013	10:47	55° 17.89'	15° 56.71'	92.8	W 4	281	2.6	pelagic trawl	end fishing
	25.04.2013	10:58	55° 17.91'	15° 55.99'	91.8	W 4	248	2.4	pelagic trawl	on deck
262	25.04.2013	12:15	55° 7.46'	16° 0.17'	90.0	SW 6	221	3.6	pelagic trawl	surface
	25.04.2013	12:26	55° 6.99'	15° 59.45'	91.2	SW 6	216	2.5	pelagic trawl	start fishing
	25.04.2013	12:56	55° 5.94'	15° 58.11'	91.8	SW 5	216	2.6	pelagic trawl	end fishing
	25.04.2013	13:08	55° 5.49'	15° 57.76'	86.4	SW 4	179	3.1	pelagic trawl	on deck
263	25.04.2013	14:10	54° 57.50'	16° 0.12'	74.3	WSW 7	236	2.8	pelagic trawl	surface
	25.04.2013	14:23	54° 57.10'	15° 58.98'	77.0	SW 6	240	2.9	pelagic trawl	start fishing
	25.04.2013	14:53	54° 56.46'	15° 56.90'	74.4	SW 6	245	2.6	pelagic trawl	end fishing
	25.04.2013	15:03	54° 56.29'	15° 56.32'	74.4	SW 6	237	2.9	pelagic trawl	on deck
264	25.04.2013	17:35	55° 17.52'	15° 45.01'	96.1	SW 7	263	0.8	CTD	surface
	25.04.2013	17:43	55° 17.51'	15° 45.01'	102.5	SW 7	110	0.1	CTD	on deck
									CTD/rosette water	
	25.04.2013	18:01	55° 17.49'	15° 45.05'	96.3	SSW 7	231	0.2	sampler	surface
									CTD/rosette water	
	25.04.2013	18:14	55° 17.50'	15° 45.00'	100.9	SW 7	170	0.4	sampler	on deck
	25.04.2013	18:22	55° 17.46'	15° 44.98'	98.9	SW 7	134	0.2	towed multinet maxi	surface
	25.04.2013	19:04	55° 15.81'	15° 43.12'	95.9	SW 8	213	2.9	towed multinet maxi	on deck
	25.04.2013	19:30	55° 17.49'	15° 45.00'	96.2	SW 8	207	0.9	towed multinet maxi	surface
	25.04.2013	20:05	55° 16.23'	15° 43.05'	98.0	SSW 8	226	2.2	towed multinet maxi	on deck
	25.04.2013	20:25	55° 17.53'	15° 44.92'	99.8	SSW 7	125	0.9	towed multinet maxi	surface
	25.04.2013	21:05	55° 16.02'	15° 42.87'	102.1	SSW 6	220	2.1	towed multinet maxi	on deck
	25.04.2013	21:29	55° 17.43'	15° 44.91'	101.2	SSW 6	193	1.6	towed multinet maxi	surface
	25.04.2013	22:05	55° 16.04'	15° 43.18'	99.1	S 6	219	1.3	towed multinet maxi	on deck
	25.04.2013	22:31	55° 17.54'	15° 45.06'	100.2	S 7	211	1.3	towed multinet maxi	surface
	25.04.2013	23:12	55° 16.01'	15° 42.99'	99.0	SSE 7	222	1.8	towed multinet maxi	on deck
	25.04.2013	23:37	55° 17.47'	15° 44.91'	99.8	SSE 9	231	1.7	towed multinet maxi	surface
	26.04.2013	00:13	55° 16.27'	15° 42.87'	99.0	SSE 9	246	1.0	towed multinet maxi	on deck
	26.04.2013	00:51	55° 17.51'	15° 45.01'	102.9	SSE 10	160	0.2	multinet midi	surface
	26.04.2013	01:04	55° 17.50'	15° 45.00'	99.1	SSE 9	266	0.2	multinet midi	on deck
	26.04.2013	01:29	55° 17.49'	15° 45.01'	100.8	SSE 11	151	0.2	multinet midi	surface
	26.04.2013	01:39	55° 17.50'	15° 45.03'	96.2	S 11	304	0.2	multinet midi	on deck
	26.04.2013	01:54	55° 17.50'	15° 45.01'	96.2	S 11	143	0.2	multinet midi	surface
	26.04.2013	02:04	55° 17.51'	15° 45.01'	96.3	S 11	126	0.3	multinet midi	on deck
	26.04.2013	02:17	55° 17.51'	15° 45.02'	96.2	S 12	67	0.4	multinet midi	surface
	26.04.2013	02:24	55° 17.50'	15° 45.05'	101.1	S 11	48	0.2	multinet midi	on deck
	26.04.2013	02:34	55° 17.50'	15° 45.01'	96.2	S 11	136	0.2	multinet midi	surface
	26.04.2013	02:44	55° 17.51'	15° 45.05'	98.7	S 12	31	0.4	multinet midi	on deck
	26.04.2013	02:53	55° 17.50'	15° 45.00'	96.2	SSW 11	153	0.3	multinet midi	surface
	26.04.2013	03:00	55° 17.50'	15° 45.04'	101.1	SSW 9	88	0.2	multinet midi	on deck
	26.04.2013	03:10	55° 17.50'	15° 44.99'	99.8	SSW 12	124	0.4	multinet midi	surface
	26.04.2013	03:20	55° 17.48'	15° 45.03'	100.0	SSW 13	308	0.3	multinet midi	on deck
	26.04.2013	03:42	55° 17.52'	15° 45.00'	99.4	SSW 11	296	0.4	Apstein net	surface
	26.04.2013	04:03	55° 17.51'	15° 45.05'	102.4	SSW 11	334	0.4	Apstein net	on deck
	26.04.2013	04:06	55° 17.52'	15° 45.01'	99.0	SSW 11	266	0.5	Apstein net	surface
	26.04.2013	04:26	55° 17.48'	15° 45.02'	102.5	SSW 10	15	0.4	Apstein net	on deck
	26.04.2013	04:29	55° 17.52'	15° 45.02'	98.5	SSW 11	346	0.4	Apstein net	surface

GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel: Cruise report AL413

26.04.2013	04:48	55° 17.47'	15° 45.08'	101.3	SW 9	54	0.3	Apstein net	on deck
26.04.2013	04:53	55° 17.51'	15° 45.01'	102.0	SSW 12	257	0.5	Apstein net	surface
26.04.2013	05:14	55° 17.49'	15° 45.02'	100.9	SSW 9	56	0.1	Apstein net	on deck
26.04.2013	05:19	55° 17.52'	15° 45.02'	99.9	SW 9	281	0.3	WP 2	surface
26.04.2013	05:31	55° 17.50'	15° 45.03'	101.9	SW 9	178	0.1	WP 2	on deck
26.04.2013	05:33	55° 17.50'	15° 45.03'	99.1	SW 9	134	0.0	WP 2	surface
26.04.2013	05:46	55° 17.51'	15° 45.02'	101.0	SW 8	308	0.2	WP 2	on deck
26.04.2013	05:47	55° 17.51'	15° 45.01'	102.0	SW 8	301	0.2	WP 2	surface
26.04.2013	06:00	55° 17.50'	15° 45.04'	99.2	SW 9	328	0.2	WP 2	on deck
26.04.2013	06:01	55° 17.51'	15° 45.03'	97.2	SW 9	301	0.2	WP 2	surface
26.04.2013	06:13	55° 17.52'	15° 45.08'	100.2	SW 9	44	0.1	WP 2	on deck