

## **Cruise Report: 12.04. – 26.04.2012**

**R.V. Alkor**

**Cruise No.:AL 390**

**General subject of research:** Physical, chemical, biological and fishery oceanography

**Port calls:** Rønne, Denmark, 19.04.2012 – 21.04.2012

**Helmholtz Centre for Ocean Research Kiel GEOMAR:** Marine Ecology, Evolutionary Ecology of Marine Fishes (FB3)

**Chief Scientist:** Dr. Holger Haslob

**Number of Scientists:** 11 scientists on first cruise leg Kiel-Rønne, 9 scientists on second cruise leg Rønne-Kiel; 2 guests from HYDROBIOS on board from 21.04. to 22.04.2012.

**Projects:** CAVIAR, EPOCA, CALMARO, DFG-Mnemiopsis, POPDYN

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### **Research programme**

This multidisciplinary cruise was conducted within the framework of several ongoing research projects and to maintain a monitoring time series which is conducted in the Bornholm Basin since 1987 by the Helmholtz Centre for Ocean Research Kiel GEOMAR (former IFM-GEOMAR Kiel, former IfM Kiel). Research activities were also conducted in the Kiel Bight, Arkona Basin, Gdansk Deep and Southern Gotland Basin (Fig. 1). Investigations considered hydrographic measurements, ichthyo- and zooplankton distributions, and the distribution and abundance of pelagic clupeid and gadoid fish species. The physical measurements conducted in the Bornholm Basin were designed to investigate the quasi-synoptic three-dimensional distribution of temperature, salinity and oxygen (CAVIAR). Further, a pH-sensor was attached to the CTD to address acidification of the water column (EPOCA/CALMARO). An 8 x 10 nm station grid was covered with CTD casts. On the same stations Bongo-casts were conducted in order to assess the abundance, biomass, production and nutritional condition of zoo- and ichthyoplankton. Further emphasis was given on the meso- to small-scale horizontal distribution of their main vertebrate and invertebrate predators (DFG-Mnemiopsis/DTU-AQUA). Stations within the central Basin (> 60 m) were covered with Bongo-Net casts during night time. The same stations were covered with pelagic fishery hauls during daytime to collect clupeid stomachs and cod single fish data (DTU-AQUA). Stock structure, gonadal maturation and egg production of sprat and cod was investigated (POPDYN). Further, mature female and male cod were caught for artificial fertilization to conduct experiments.

## **Gears used**

*Hydrography:* ADM-CTD with pH and O<sub>2</sub> sensor, Hydrobios Water Sampler with CTD

*Zooplankton:* Baby Bongo-Net (150 µm), Bongo-Net (335µm), Bongo Net (500µm), WP2 (200µm).

*Ichthyoplankton:* Bongo-Net (335µm and 500 µm), Hydrobios Maxi Multinet (335µm horizontal tows), Hydrobios Mammut Multinet (335µm), IKS80 (500µm), Helgoländer Larvennetz (500µm).

*Fish:* Jungfisch Trawl

*Hydroacoustic:* 38, 70, 120 and 200 kHz-echosounder

## **Scientific crew:**

- Holger Haslob	(Chief Scientist)	GEOMAR Kiel	whole cruise
- Svend Mees		GEOMAR Kiel	whole cruise
- Christoph Petereit		GEOMAR Kiel	Kiel - Rønne
- Regina Klapper		GEOMAR Kiel	Kiel - Rønne
- Burkhard von Dewitz		GEOMAR, Kiel	whole cruise
- Gesine Ramm		GEOMAR, Kiel	whole cruise
- Sophie Bodenstein		GEOMAR, Kiel	whole cruise
- Luke Phelps		GEOMAR, Kiel	whole cruise
- Marc Ritter		CAU, Kiel	whole cruise
- Julian Döring		GEOMAR, Kiel	whole cruise
- Isabell Keller		Trainee	whole cruise

## Summary of cruise

The cruise started as scheduled, RV Alkor left Kiel 12<sup>th</sup> April 0800 a.m.. The first stations were covered in the Kiel Bight the same day deploying CTD, Bongo nets, WP2, the MIDI multinet, and one fishery haul. During the next three days station work and fishery was conducted in the Arkona Basin, Gdansk Deep, and Southern Gotland Basin during day time. During the night there were no stations and the time was used to sail to the next investigation area. When entering the Bornholm Basin on the 16<sup>th</sup> April bongo sampling started on the regular 45 station grid. This work was continued until the next morning when pelagic fishery was conducted. The next three days fishery was conducted during the day time while during the night time station work was continued. In the late afternoon of the 19<sup>th</sup> April the cruise was interrupted for a staff exchange in Rønne, Bornholm. Two scientists left Alkor and two technicians from HYDROBIOS (Kiel) joined the cruise for two days. Alkor arrived in Rønne 19<sup>th</sup> April in the late afternoon and left on 21<sup>st</sup> April in the morning. For the next two days station work was continued and two multinet stations were performed. On this station the new HYDROBIOS Mammut multinet was tested successfully. On 22<sup>nd</sup> April the two HYDROBIOS technicians were disembarked in Nexø. Afterwards the station work in the Bornholm Basin was continued. On 24<sup>th</sup> April five fishery hauls in parallel to five bongo casts were conducted on a small scale area. This area was also covered with two hydro acoustic transects to record the abundance of cod and sprat. In the late evening of the 24<sup>th</sup> April the station work in the Bornholm Basin was completed. The next day two additional fishery hauls were conducted in the Arkona Basin before Alkor headed back to Kiel. The cruise ended in Kiel the 26<sup>th</sup> April.

In conclusion the cruise was very successful. Due to good weather conditions and an efficient functioning of all gears and facilities in use, the whole work plan of the cruise was accomplished. A cruise track (Fig. 1), an overview of gear deployments (Tab. 1) and a detailed station list (Tab. 2) is given below. Thanks to Captain Lass and his crew of RV Alkor for the outstanding support during the whole cruise!

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

Gear	Number of deployments
ADM-CTD	72
Watersampler	5
Bongo- Babybongo (150 $\mu$ , 335 $\mu$ , 500 $\mu$ )	59
Helgoländer Larvennetz (500 $\mu$ )	19
WP2 (200 $\mu$ )	7
Maxi Multinet horizontal (335 $\mu$ )	9
Mammut Multinet (335 $\mu$ )	7
Midi Multinet (335 $\mu$ )	6
IKS80 (500 $\mu$ )	8
pelagic trawl (Jungfischtrawl)	43

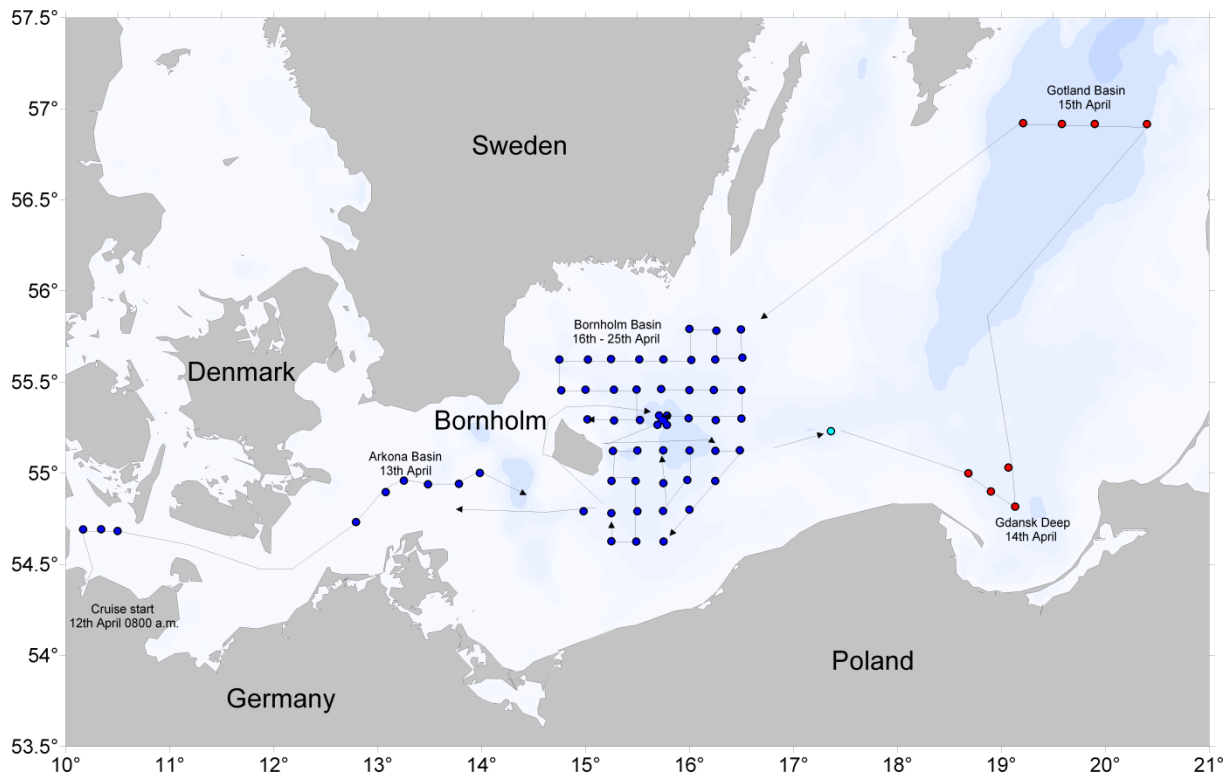


Fig. 1: Cruise track AL390. Dark blue circles = bongo and CTD; red circles = IKS-80 and CTD; light blue = CTD.

### Ichthyo- and zooplankton sampling

Bongo- and Babybongo casts were performed in the Kiel Bight (3 hauls), Arkona Basin (5 hauls), on a standard station grid in the Bornholm Basin (45 hauls) (Fig. 5). All Bongo samples were immediately checked for the presence of *Mnemiopsis leidyi*. Very few specimens of this invasive ctenophore were found in the Kiel Bight but it was absent in all the other areas. Larvae of cod (*Gadus morhua*), sprat (*Sprattus sprattus*), and flounder (*Plathichthys flesus*) were picked from the 500 $\mu$  bongo-samples for subsequent RNA/DNA analysis. The 335 $\mu$  bongo-samples will be used for abundance determination of ichthyoplankton. Stations in the Gdansk Deep and the Southern Gotland Basin were covered with IKS-80 casts (Fig. 1). IKS-80 samples were taken in cooperation with Latvian Fish Resources Agency (LATFRA). A MIDI type multinet (HYDROBIOS, Kiel) was deployed in the Kiel Bight and Arkona Basin to reveal vertical distribution of ichthyoplankton. On a central station in the Bornholm Basin MAXI type multinet (HYDROBIOS, Kiel) casts were performed to reveal the vertical distribution of ichthyoplankton (335 $\mu$  multinet horizontal tows; Fig. 2). Additionally, a new type of multinet (Multinet Mammut HYDROBIOS, Kiel) was tested in parallel on the same station. In order to catch fish eggs alive for experimental purposes several casts with the Helgoländer Larvennetz were performed on selected stations in all investigation areas (Fig. 2). A WP-2 (200 $\mu$ ) net was deployed on selected stations to get additional zooplankton samples (Fig. 2).

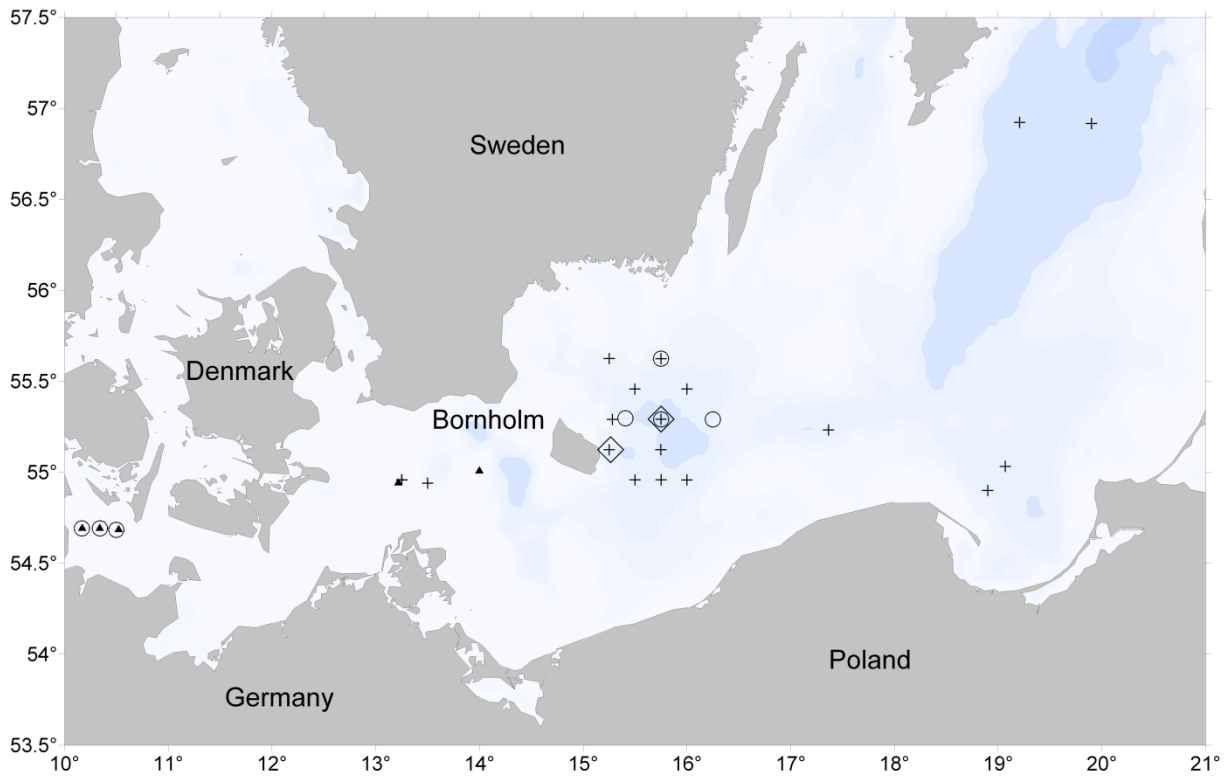


Fig. 2: Miscellaneous plankton nets in use during AL390. + Helgoländer Larvennetz; o WP-2; ▲ MIDI multinet; ◇ MAXI and MAMMUT multinet.

### Hydrography

CTD casts were performed on 77 stations. Temperature profiles revealed 4 °C at the surface water layer (Fig. 3). In intermediate water layers (40 m – 60 m) temperatures down to 2 °C were recorded. Below the halocline temperatures reached up to 7 °C in the central Bornholm Basin. The permanent halocline was located in ca. 60 m depth (Fig. 4). Maximum salinity values near the bottom reached 16.1 in the Bornholm Basin. Oxygen decreased from surface to bottom depth. However, oxygen was detected at the bottom of the Bornholm Basin with values up to 3 ml/l (Fig. 5). These results indicate an inflow event of oxygenated North Sea water into the Bornholm Basin in winter 2011/2012.

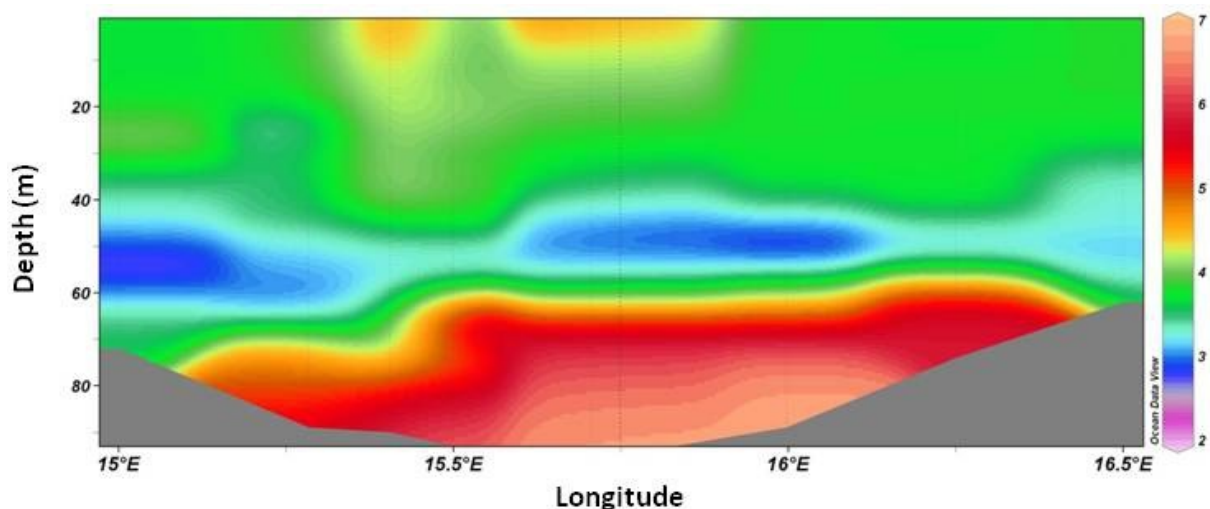


Fig. 3: Water temperature (°C) on a transect from west to east in the Bornholm Basin.

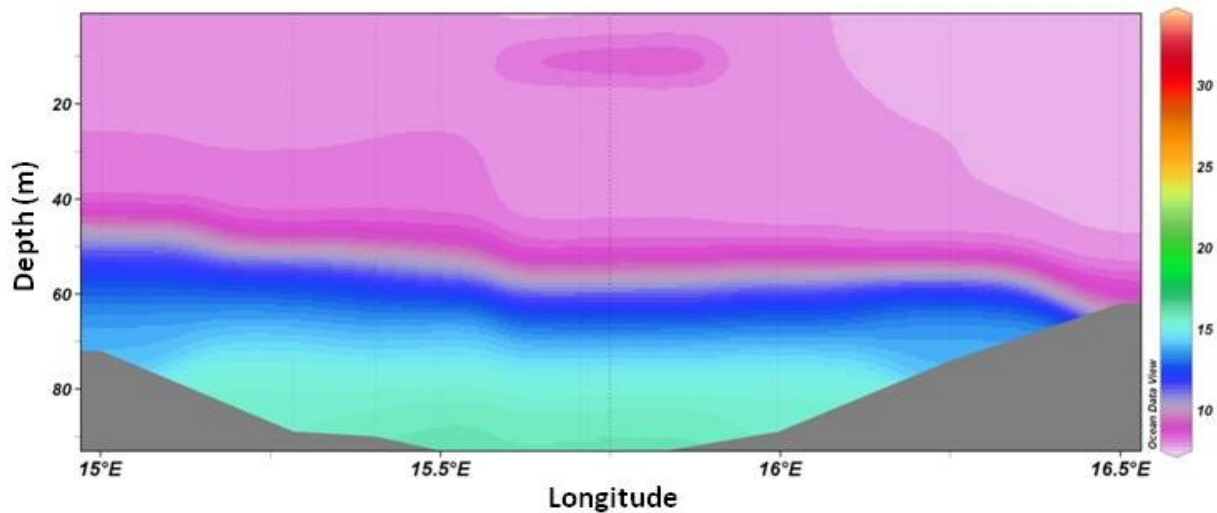


Fig. 4: Salinity on a transect from west to east in the Bornholm Basin.

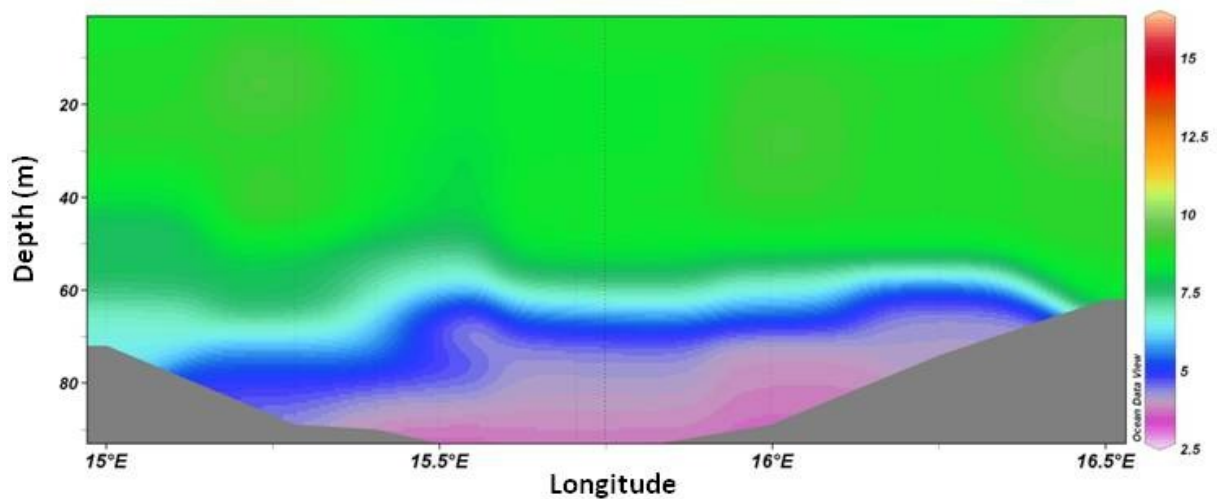


Fig. 5: Oxygen content ( $\text{ml l}^{-1}$ ) on a transect from west to east in the Bornholm Basin.

### Fishery

During the cruise pelagic fishery was conducted in the Kiel Bight (1 haul), Arkona Basin (7 hauls), the Bornholm Basin (26 hauls), the Gdansk Deep (4 hauls) and the Southern Gotland Basin (5 hauls) (Fig. 6). Catches in the Arkona Basin were dominated by a mixture of sprat (*Sprattus sprattus*) and herring (*Clupea harengus*). Also whiting (*Merlangius merlangus*) occurred regularly in the hauls conducted in this area while numbers of cod (*Gadus morhua*) were in general low. In the Bornholm Basin sprat was the most abundant fish species followed by herring and cod. Sporadically also whiting and flounder (*Platichthys flesus*) occurred in the catches. With the exception of some cod, flounders and sticklebacks (*Gasterosteus aculeatus*), catches in the Gdansk Deep and Southern Gotland Basin comprised mainly of sprat and herring.

From all hauls species composition, catch weight and length frequencies of all species were taken. Stomach samples were taken from sprat (min 10 per 1cm length class) and herring (min 10 per 2 cm length class). For cod single fish data, otoliths, one fin clip for genetic analysis were taken from each individual. Additionally, sprat were sampled for maturation and fecundity analyses.

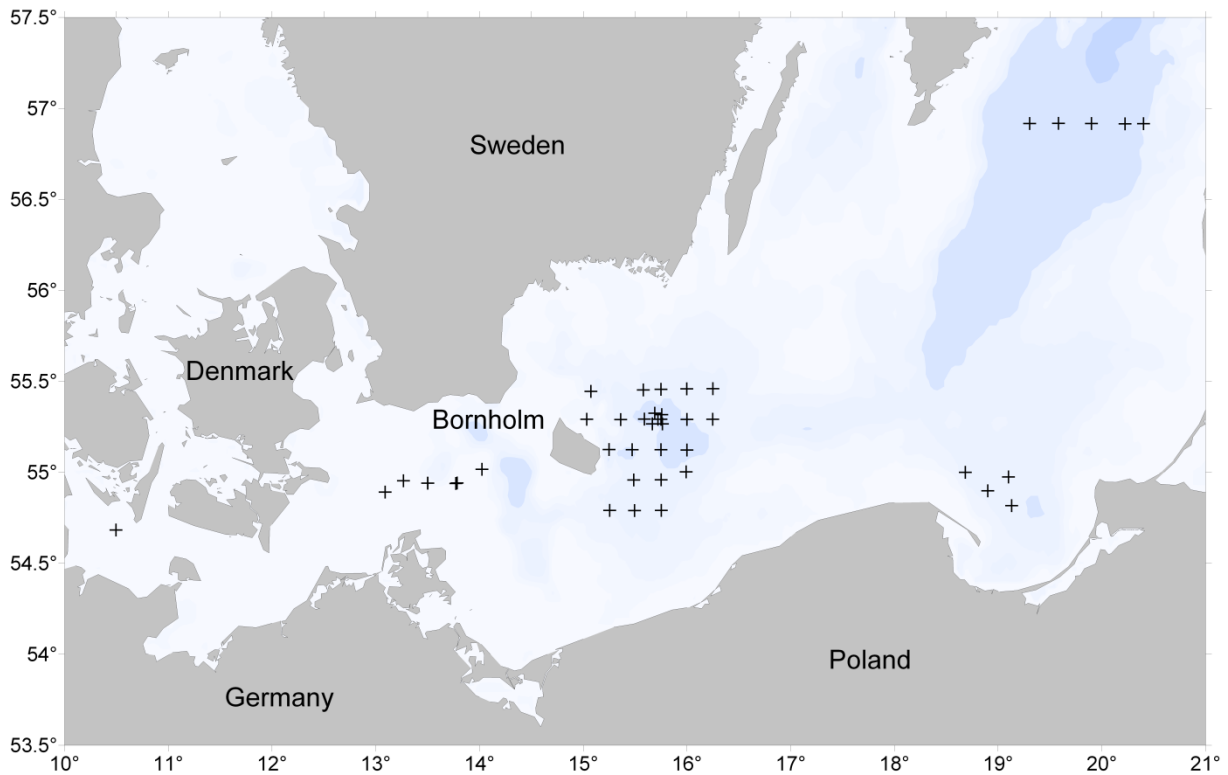


Fig. 6: Fishery stations covered during AL390 with the Jungfisch-Trawl.

### Experiments

One task of the experimental work during the cruise was the investigation of spatial differences in the specific gravity of fish eggs. For this purpose two methods were applied. The first method utilized vertical Helgoländer Larvennetz (HLN) casts to integrate the whole water column and to catch alive, unharmed fish eggs. These were picked out of the samples, determined to species level, staged and size measured under a stereo microscope. The eggs were inserted into freshly prepared density gradient columns in order to determine their specific gravity. The second method to determine egg buoyancy was by strip spawning. Running ripe cod and flounder were stripped and eggs were fertilized artificially.

## Report of cruise AL390 with technical details

Thursday	12/04/2012	0800	leaving IfM-pier, heading with direction Kiel Bight stations.
		1013	beginning station work in Kiel Bight. CTD, Bongo, WP2, MIDI multinet, fishery.
		1527	end of fishery heading with direction Arkona Basin.
Friday	13/04/2012	0405	beginning station work in the Arkona Basin. CTD, Bongo, MIDI multinet.
		0600	beginning pelagic fishery in the Arkona Basin, 5 hauls.
		1640	end of fishery in the Arkona Basin, heading to Stolper Trench.
Saturday	14/04/2012	0400	Stolper Trench station. CTD, Helgoländer Larvennetz.
		0440	station end, heading with direction Gdansk Deep.
		0923	beginning station work in the Gdansk Deep. CTD, IKS-80, pelagic fishery, Helgoländer Larvennetz.
		1850	end of station work Gdansk Deep. Heading to Southern Gotland Basin.
Sunday	15/04/2012	0752	beginning station work in Southern Gotland Basin. CTD, IKS-80, Helgoländer Larvennetz, fishery.
		1843	end of station work, heading with direction Bornholm Basin.
Monday	16/04/2012	0600	beginning station work in the Bornholm Basin. CTD, Bongo, WP-2.
Tuesday	17/04/2012	0600	beginning with pelagic fishery, 5 hauls
		1725	Continuing station work. CTD, Bongo, Helgoländer Larvennetz, WP-2.
Wednesday	18/04/2012	0600	beginning pelagic fishery, 6 hauls
		1731	continuing station work.
Thursday	19/04/2012	0600	beginning pelagic fishery, 5 hauls
		1428	end of pelagic fishery, heading with direction Rønne, Bornholm.
		1700	Rønne. Staff exchange. 2 persons off, 2 persons from HYDROBIOS on board.
Saturday	21/04/2012	0600	leaving Rønne, heading to central Bornholm Basin.
		1033	beginning with station work central Bornholm Basin. Station 232 multinet casts MAXI and MAMMUT type, CTD.
		2231	end of multinet station, heading to station 233
		2340	station 233 CTD and WP-2
Sunday	22/04/2012	0002	end of station 233, heading with direction station 234.
		0600	beginning with multinet station 234. MAXI and MAMMUT type, CTD.



		1000	end of multinet station 234, heading with direction Nexø, Bornholm.
		1030	arriving at Nexø roads. Disembarkation of two men (HYDROBIOS).
		1100	leaving Nexø roads, continuing station work in the Bornholm Basin. CTD, Bongo, WP-2, Helgoländer LArvennetz.
Monday	23/04/2012	0600	beginning pelagic fishery Bornholm Basin 5 hauls.
		1445	end of fishery, continuing station work.
		2112	end of station work. Heading station 252.
		2200	Station 252 start of hydro acoustic transect 1.
Tuesday	24/04/2012	0600	beginning small scale fishery central Bornholm Basin in parallel with Bongo casts, CTD.
		1500	end of small scale fishery and Bongo casts.
		1522	station 258 start of hydro acoustic transect 2.
		1816	end of hydro acoustic transect 2, heading with direction station 259.
		2203	station 259, Bongo and CTD.
		2222	end of station work in the Bornholm Basin, heading with direction Arkona Basin.
Wednesday	25/04/2012	0600	beginning pelagic fishery Arkona Basin.
		0838	end of fishery Arkona Basin, end of research program. Heading Kiel.
		2000	Kiel port, pier west shore building GEOMAR.
Thursday	26/04/2012	0800	leaving west shore pier to move ship to Seefischmarkt.
		0830	Kiel Seefischmarkt, debarkation of equipment and samples.
		1000	move ship back to pier west shore building GEOMAR.
		1030	end of cruise.

Table 2: Detailed station list of AL390 12.04. – 26.04.2012. Date and time in UTC.

ship station number	Time [UTC]	Latitude (dez)	Longitude (dez)	bottom depth (m)	Gear	action
0162-1	2012-04-12 08:12:00.0	54.69	10.17	18.8	CTD	surface
0162-1	2012-04-12 08:14:00.0	54.69	10.17	18.8	CTD	on deck
0162-2	2012-04-12 08:17:00.0	54.69	10.17	18.9	WP2 Net	surface
0162-2	2012-04-12 08:20:00.0	54.69	10.17	19.0	WP2 Net	on deck
0162-3	2012-04-12 08:22:00.0	54.69	10.17	19.0	BONGO Netz   BONGO	surface
0162-3	2012-04-12 08:27:00.0	54.69	10.17	19.6	BONGO Netz   BONGO	on deck
0162-4	2012-04-12 08:37:00.0	54.69	10.17	18.8	Geschlepptes Multinetz   MSN-towed	surface
0162-4	2012-04-12 08:54:00.0	54.69	10.19	24.3	Geschlepptes Multinetz   MSN-towed	on deck
0162-5	2012-04-12 09:15:00.0	54.69	10.18	21.2	Geschlepptes Multinetz   MSN-towed	surface
0162-5	2012-04-12 09:35:00.0	54.69	10.21	23.0	Geschlepptes Multinetz   MSN-towed	on deck
0162-6	2012-04-12 09:38:00.0	54.69	10.21	23.1	CTD	surface
0162-6	2012-04-12 09:40:00.0	54.69	10.21	23.1	CTD	on deck
0163-1	2012-04-12 10:14:00.0	54.69	10.34	26.6	CTD	surface
0163-1	2012-04-12 10:17:00.0	54.69	10.34	26.6	CTD	on deck
0163-2	2012-04-12 10:22:00.0	54.69	10.34	26.7	WP2 Net	surface
0163-2	2012-04-12 10:27:00.0	54.69	10.34	26.7	WP2 Net	on deck
0163-3	2012-04-12 10:30:00.0	54.69	10.34	26.8	BONGO Netz   BONGO	surface
0163-3	2012-04-12 10:35:00.0	54.69	10.35	27.1	BONGO Netz   BONGO	on deck
0163-4	2012-04-12 10:44:00.0	54.69	10.34	26.8	Geschlepptes Multinetz   MSN-towed	surface
0163-4	2012-04-12 11:04:00.0	54.69	10.37	29.8	Geschlepptes Multinetz   MSN-towed	on deck
0164-1	2012-04-12 11:37:00.0	54.68	10.50	27.4	Geschlepptes Multinetz   MSN-towed	surface
0164-1	2012-04-12 11:55:00.0	54.68	10.53	26.6	Geschlepptes Multinetz   MSN-towed	on deck
0164-2	2012-04-12 12:06:00.0	54.68	10.50	27.0	BONGO Netz   BONGO	surface
0164-2	2012-04-12 12:10:00.0	54.68	10.50	26.4	BONGO Netz   BONGO	on deck
0164-3	2012-04-12 12:18:00.0	54.68	10.50	27.8	WP2 Net	surface
0164-3	2012-04-12 12:23:00.0	54.68	10.50	27.9	WP2 Net	on deck
0164-4	2012-04-12 12:27:00.0	54.68	10.50	27.9	CTD	surface
0164-4	2012-04-12 12:31:00.0	54.68	10.50	28.0	CTD	on deck
0164-5	2012-04-12 12:37:00.0	54.68	10.50	28.7	Jungfischtrawl   JFT	surface
0164-5	2012-04-12 12:57:00.0	54.69	10.46	30.4	Jungfischtrawl   JFT	begin fishing
0164-5	2012-04-12 13:27:00.0	54.68	10.42	29.2	Jungfischtrawl   JFT	end fishing
0164-5	2012-04-12 13:38:00.0	54.69	10.41	28.3	Jungfischtrawl   JFT	on deck
0165-1	2012-04-13 02:03:00.0	54.73	12.79	23.0	CTD	surface
0165-1	2012-04-13 02:06:00.0	54.73	12.79	23.0	CTD	on deck
0165-2	2012-04-13 02:12:00.0	54.73	12.79	22.9	BONGO Netz   BONGO	surface
0165-2	2012-04-13 02:17:00.0	54.73	12.80	23.1	BONGO Netz   BONGO	on deck
0166-1	2012-04-13 03:48:00.0	54.90	13.08	44.0	BONGO Netz   BONGO	surface
0166-1	2012-04-13 03:55:00.0	54.89	13.08	44.1	BONGO Netz   BONGO	on deck

Table 2 continued

0166-2	2012-04-13 03:59:00.0	54.89	13.09	44.1	CTD	surface
0166-2	2012-04-13 04:03:00.0	54.89	13.09	44.2	CTD	on deck
0166-3	2012-04-13 04:11:00.0	54.89	13.09	44.1	Jungfischtrawl   JFT	surface
0166-3	2012-04-13 04:23:00.0	54.90	13.11	43.9	Jungfischtrawl   JFT	begin fishing
0166-3	2012-04-13 04:53:00.0	54.91	13.14	44.1	Jungfischtrawl   JFT	end fishing
0166-3	2012-04-13 05:04:00.0	54.92	13.15	44.3	Jungfischtrawl   JFT	on deck
0167-1	2012-04-13 05:37:00.0	54.96	13.25	47.2	CTD	surface
0167-1	2012-04-13 05:41:00.0	54.96	13.25	47.2	CTD	on deck
0167-2	2012-04-13 05:48:00.0	54.96	13.25	47.2	Helgolaender Larven Netz   HLN	surface
0167-2	2012-04-13 06:00:00.0	54.96	13.25	47.2	Helgolaender Larven Netz   HLN	on deck
0167-3	2012-04-13 06:01:00.0	54.96	13.25	47.2	Helgolaender Larven Netz   HLN	surface
0167-3	2012-04-13 06:13:00.0	54.96	13.25	47.2	Helgolaender Larven Netz   HLN	on deck
0167-4	2012-04-13 06:17:00.0	54.96	13.25	47.2	BONGO Netz   BONGO	surface
0167-4	2012-04-13 06:24:00.0	54.96	13.26	47.0	BONGO Netz   BONGO	on deck
0167-5	2012-04-13 06:33:00.0	54.95	13.27	46.9	Jungfischtrawl   JFT	surface
0167-5	2012-04-13 06:43:00.0	54.95	13.28	46.7	Jungfischtrawl   JFT	begin fishing
0167-5	2012-04-13 07:15:00.0	54.95	13.33	46.4	Jungfischtrawl   JFT	end fishing
0167-5	2012-04-13 07:24:00.0	54.94	13.34	51.6	Jungfischtrawl   JFT	on deck
0168-1	2012-04-13 07:59:00.0	54.94	13.48	47.2	BONGO Netz   BONGO	surface
0168-1	2012-04-13 08:07:00.0	54.94	13.50	47.3	BONGO Netz   BONGO	on deck
0168-2	2012-04-13 08:11:00.0	54.94	13.50	47.1	Geschlepptes Multinetz   MSN-towed	surface
0168-2	2012-04-13 08:31:00.0	54.94	13.53	47.4	Geschlepptes Multinetz   MSN-towed	on deck
0168-3	2012-04-13 09:22:00.0	54.94	13.50	47.3	Helgolaender Larven Netz   HLN	surface
0168-3	2012-04-13 09:31:00.0	54.94	13.50	47.3	Helgolaender Larven Netz   HLN	on deck
0168-4	2012-04-13 09:35:00.0	54.94	13.50	47.3	CTD	surface
0168-4	2012-04-13 09:39:00.0	54.94	13.50	47.2	CTD	on deck
0168-5	2012-04-13 09:41:00.0	54.94	13.50	47.3	Jungfischtrawl   JFT	surface
0168-5	2012-04-13 09:50:00.0	54.94	13.52	47.2	Jungfischtrawl   JFT	begin fishing
0168-5	2012-04-13 10:20:00.0	54.94	13.56	47.3	Jungfischtrawl   JFT	end fishing
0168-5	2012-04-13 10:31:00.0	54.94	13.57	47.4	Jungfischtrawl   JFT	on deck
0169-1	2012-04-13 11:23:00.0	54.94	13.78	47.3	CTD	surface
0169-1	2012-04-13 11:27:00.0	54.94	13.78	47.2	CTD	on deck
0169-2	2012-04-13 11:32:00.0	54.94	13.78	51.2	BONGO Netz   BONGO	surface
0169-2	2012-04-13 11:39:00.0	54.94	13.77	50.5	BONGO Netz   BONGO	on deck
0169-3	2012-04-13 11:43:00.0	54.94	13.77	53.1	Jungfischtrawl   JFT	surface
0169-3	2012-04-13 11:55:00.0	54.94	13.79	47.4	Jungfischtrawl   JFT	begin fishing
0169-3	2012-04-13 12:25:00.0	54.95	13.82	47.4	Jungfischtrawl   JFT	end fishing
0169-3	2012-04-13 12:34:00.0	54.95	13.83	48.8	Jungfischtrawl   JFT	on deck
0170-1	2012-04-13 13:13:00.0	55.00	13.98	47.8	BONGO Netz   BONGO	surface

Table 2 continued

0170-1	2012-04-13 13:21:00.0	55.01	13.99	47.9	BONGO Netz   BONGO	on deck
0170-2	2012-04-13 13:25:00.0	55.01	14.00	47.8	Geschlepptes Multinetz   MSN-towed	surface
0170-2	2012-04-13 13:44:00.0	55.02	14.02	49.1	Geschlepptes Multinetz   MSN-towed	on deck
0170-3	2012-04-13 13:48:00.0	55.02	14.03	48.0	CTD	surface
0170-3	2012-04-13 13:52:00.0	55.02	14.03	48.0	CTD	on deck
0170-4	2012-04-13 13:55:00.0	55.02	14.02	49.5	Jungfischtrawl   JFT	surface
0170-4	2012-04-13 14:09:00.0	55.01	14.01	47.8	Jungfischtrawl   JFT	begin fishing
0170-4	2012-04-13 14:39:00.0	55.00	13.97	47.9	Jungfischtrawl   JFT	end fishing
0170-4	2012-04-13 14:49:00.0	54.99	13.96	49.5	Jungfischtrawl   JFT	on deck
0171-1	2012-04-14 02:09:00.0	55.23	17.37	90.1	Helgolaender Larven Netz   HLN	surface
0171-1	2012-04-14 02:27:00.0	55.23	17.36	89.8	Helgolaender Larven Netz   HLN	on deck
0171-2	2012-04-14 02:33:00.0	55.23	17.36	89.6	CTD	surface
0171-2	2012-04-14 02:41:00.0	55.23	17.36	89.4	CTD	on deck
0172-1	2012-04-14 07:24:00.0	55.00	18.68	92.9	CTD	surface
0172-1	2012-04-14 07:30:00.0	55.00	18.68	92.8	CTD	on deck
0172-2	2012-04-14 07:33:00.0	55.00	18.68	92.8	IKS 80 Net   IKS 80	surface
0172-2	2012-04-14 07:43:00.0	55.00	18.68	93.1	IKS 80 Net   IKS 80	on deck
0172-3	2012-04-14 07:46:00.0	55.00	18.68	92.9	Jungfischtrawl   JFT	surface
0172-3	2012-04-14 08:02:00.0	55.00	18.66	92.2	Jungfischtrawl   JFT	begin fishing
0172-3	2012-04-14 08:37:00.0	55.01	18.62	87.8	Jungfischtrawl   JFT	end fishing
0172-3	2012-04-14 08:50:00.0	55.02	18.60	88.3	Jungfischtrawl   JFT	on deck
0173-1	2012-04-14 10:05:00.0	54.90	18.90	98.7	IKS 80 Net   IKS 80	surface
0173-1	2012-04-14 10:17:00.0	54.90	18.90	98.8	IKS 80 Net   IKS 80	on deck
0173-2	2012-04-14 10:20:00.0	54.90	18.90	99.1	Helgolaender Larven Netz   HLN	surface
0173-2	2012-04-14 10:40:00.0	54.90	18.90	99.2	Helgolaender Larven Netz   HLN	on deck
0173-3	2012-04-14 10:51:00.0	54.90	18.90	98.8	CTD	surface
0173-3	2012-04-14 10:59:00.0	54.90	18.90	98.9	CTD	on deck
0173-4	2012-04-14 11:02:00.0	54.90	18.90	98.8	Jungfischtrawl   JFT	surface
0173-4	2012-04-14 11:16:00.0	54.89	18.92	99.6	Jungfischtrawl   JFT	begin fishing
0173-4	2012-04-14 11:56:00.0	54.88	18.97	100.3	Jungfischtrawl   JFT	end fishing
0173-4	2012-04-14 12:05:00.0	54.87	18.97	100.8	Jungfischtrawl   JFT	on deck
0174-1	2012-04-14 12:47:00.0	54.82	19.13	105.3	CTD	surface
0174-1	2012-04-14 12:55:00.0	54.82	19.13	105.6	CTD	on deck
0174-2	2012-04-14 12:58:00.0	54.82	19.13	103.7	IKS 80 Net   IKS 80	surface
0174-2	2012-04-14 13:09:00.0	54.82	19.13	103.5	IKS 80 Net   IKS 80	on deck
0174-3	2012-04-14 13:12:00.0	54.82	19.13	103.8	Jungfischtrawl   JFT	surface
0174-3	2012-04-14 13:27:00.0	54.83	19.14	104.5	Jungfischtrawl   JFT	begin fishing
0174-3	2012-04-14 14:03:00.0	54.86	19.16	105.9	Jungfischtrawl   JFT	end fishing
0174-3	2012-04-14 14:15:00.0	54.86	19.17	106.2	Jungfischtrawl   JFT	on deck
0175-1	2012-04-14 14:56:00.0	54.97	19.10	102.6	Jungfischtrawl   JFT	surface

Table 2 continued

0175-1	2012-04-14 15:14:00.0	54.99	19.09	102.0	Jungfischtrawl   JFT	begin fishing
0175-1	2012-04-14 15:53:00.0	55.02	19.07	102.3	Jungfischtrawl   JFT	end fishing
0175-1	2012-04-14 16:03:00.0	55.03	19.07	100.0	Jungfischtrawl   JFT	on deck
0175-2	2012-04-14 16:10:00.0	55.03	19.07	99.4	IKS 80 Net   IKS 80	surface
0175-2	2012-04-14 16:20:00.0	55.03	19.07	100.3	IKS 80 Net   IKS 80	on deck
0175-3	2012-04-14 16:21:00.0	55.03	19.07	99.6	Helgolaender Larven Netz   HLN	surface
0175-3	2012-04-14 16:41:00.0	55.04	19.07	99.6	Helgolaender Larven Netz   HLN	on deck
0175-4	2012-04-14 16:43:00.0	55.04	19.07	99.3	CTD	surface
0175-4	2012-04-14 16:51:00.0	55.04	19.07	99.2	CTD	on deck
0176-1	2012-04-15 05:51:00.0	56.92	20.40	69.8	CTD	surface
0176-1	2012-04-15 05:57:00.0	56.92	20.40	70.5	CTD	on deck
0176-2	2012-04-15 06:00:00.0	56.92	20.40	70.6	IKS 80 Net   IKS 80	surface
0176-2	2012-04-15 06:09:00.0	56.92	20.40	70.2	IKS 80 Net   IKS 80	on deck
0176-3	2012-04-15 06:12:00.0	56.92	20.40	70.7	Jungfischtrawl   JFT	surface
0176-3	2012-04-15 06:21:00.0	56.92	20.39	73.4	Jungfischtrawl   JFT	begin fishing
0176-3	2012-04-15 07:00:00.0	56.92	20.33	87.4	Jungfischtrawl   JFT	end fishing
0176-3	2012-04-15 07:09:00.0	56.92	20.32	96.7	Jungfischtrawl   JFT	on deck
0177-1	2012-04-15 07:33:00.0	56.92	20.22	143.5	Jungfischtrawl   JFT	surface
0177-1	2012-04-15 07:42:00.0	56.92	20.24	140.6	Jungfischtrawl   JFT	begin fishing
0177-1	2012-04-15 08:12:00.0	56.92	20.28	119.4	Jungfischtrawl   JFT	end fishing
0177-1	2012-04-15 08:27:00.0	56.92	20.31	102.4	Jungfischtrawl   JFT	on deck
0178-1	2012-04-15 10:08:00.0	56.92	19.90	172.4	CTD	surface
0178-1	2012-04-15 10:31:00.0	56.92	19.90	171.1	CTD	on deck
0178-2	2012-04-15 10:38:00.0	56.92	19.90	171.1	IKS 80 Net   IKS 80	surface
0178-2	2012-04-15 10:49:00.0	56.92	19.90	171.0	IKS 80 Net   IKS 80	on deck
0178-3	2012-04-15 10:52:00.0	56.92	19.90	171.2	Helgolaender Larven Netz   HLN	surface
0178-3	2012-04-15 11:12:00.0	56.92	19.90	170.9	Helgolaender Larven Netz   HLN	on deck
0178-4	2012-04-15 11:14:00.0	56.92	19.90	170.9	Jungfischtrawl   JFT	surface
0178-4	2012-04-15 11:27:00.0	56.92	19.88	173.5	Jungfischtrawl   JFT	begin fishing
0178-4	2012-04-15 11:57:00.0	56.92	19.84	174.2	Jungfischtrawl   JFT	end fishing
0178-4	2012-04-15 12:09:00.0	56.92	19.82	175.3	Jungfischtrawl   JFT	on deck
0179-1	2012-04-15 12:58:00.0	56.92	19.58	154.0	watersamper/CTD	surface
0179-1	2012-04-15 13:08:00.0	56.92	19.58	153.9	watersamper/CTD	on deck
0179-2	2012-04-15 13:11:00.0	56.92	19.58	154.1	IKS 80 Net   IKS 80	surface
0179-2	2012-04-15 13:22:00.0	56.92	19.58	153.9	IKS 80 Net   IKS 80	on deck
0179-3	2012-04-15 13:25:00.0	56.92	19.58	153.7	Jungfischtrawl   JFT	surface
0179-3	2012-04-15 13:40:00.0	56.92	19.56	145.4	Jungfischtrawl   JFT	begin fishing
0179-3	2012-04-15 14:10:00.0	56.92	19.51	156.2	Jungfischtrawl   JFT	end fishing
0179-3	2012-04-15 14:23:00.0	56.92	19.49	158.4	Jungfischtrawl   JFT	on deck
0180-1	2012-04-15 14:58:00.0	56.92	19.30	167.4	Jungfischtrawl   JFT	surface

Table 2 continued

0180-1	2012-04-15 15:13:00.0	56.92	19.27	172.6	Jungfischtrawl   JFT	begin fishing
0180-1	2012-04-15 15:42:00.0	56.92	19.23	168.5	Jungfischtrawl   JFT	end fishing
0180-1	2012-04-15 15:53:00.0	56.92	19.22	169.9	Jungfischtrawl   JFT	on deck
0180-2	2012-04-15 16:01:00.0	56.92	19.21	167.2	watersamper/CTD	surface
0180-2	2012-04-15 16:11:00.0	56.92	19.21	165.8	watersamper/CTD	on deck
0180-3	2012-04-15 16:14:00.0	56.92	19.21	165.4	IKS 80 Net   IKS 80	surface
0180-3	2012-04-15 16:25:00.0	56.92	19.21	163.9	IKS 80 Net   IKS 80	on deck
0180-4	2012-04-15 16:28:00.0	56.92	19.21	163.1	Helgolaender Larven Netz   HLN	surface
0180-4	2012-04-15 16:44:00.0	56.92	19.20	163.7	Helgolaender Larven Netz   HLN	on deck
0181-1	2012-04-16 03:58:00.0	55.79	16.50	57.3	CTD	surface
0181-1	2012-04-16 04:09:00.0	55.79	16.50	57.3	CTD	on deck
0181-2	2012-04-16 04:14:00.0	55.79	16.50	57.5	BONGO Netz   BONGO	surface
0181-2	2012-04-16 04:24:00.0	55.78	16.49	58.3	BONGO Netz   BONGO	on deck
0182-1	2012-04-16 05:18:00.0	55.63	16.51	62.7	BONGO Netz   BONGO	surface
0182-1	2012-04-16 05:28:00.0	55.63	16.50	63.0	BONGO Netz   BONGO	on deck
0182-2	2012-04-16 05:32:00.0	55.62	16.50	63.1	CTD	surface
0182-2	2012-04-16 05:37:00.0	55.63	16.50	63.2	CTD	on deck
0183-1	2012-04-16 06:30:00.0	55.62	16.25	75.1	CTD	surface
0183-1	2012-04-16 06:37:00.0	55.62	16.25	75.2	CTD	on deck
0183-2	2012-04-16 06:39:00.0	55.62	16.25	75.3	BONGO Netz   BONGO	surface
0183-2	2012-04-16 06:50:00.0	55.63	16.24	73.2	BONGO Netz   BONGO	on deck
0184-1	2012-04-16 07:47:00.0	55.78	16.26	63.6	BONGO Netz   BONGO	surface
0184-1	2012-04-16 07:56:00.0	55.79	16.25	62.6	BONGO Netz   BONGO	on deck
0184-2	2012-04-16 08:01:00.0	55.79	16.25	62.5	CTD	surface
0184-2	2012-04-16 08:08:00.0	55.79	16.25	60.3	CTD	on deck
0185-1	2012-04-16 08:58:00.0	55.79	16.00	62.3	CTD	surface
0185-1	2012-04-16 09:03:00.0	55.79	16.00	62.3	CTD	on deck
0185-2	2012-04-16 09:06:00.0	55.79	16.00	64.1	BONGO Netz   BONGO	surface
0185-2	2012-04-16 09:16:00.0	55.78	16.00	64.6	BONGO Netz   BONGO	on deck
0186-1	2012-04-16 10:15:00.0	55.62	16.02	74.6	BONGO Netz   BONGO	surface
0186-1	2012-04-16 10:25:00.0	55.62	16.01	74.6	BONGO Netz   BONGO	on deck
0186-2	2012-04-16 10:31:00.0	55.62	16.00	74.8	CTD	surface
0186-2	2012-04-16 10:37:00.0	55.63	16.00	75.0	CTD	on deck
0187-1	2012-04-16 11:39:00.0	55.62	15.75	69.5	CTD	surface
0187-1	2012-04-16 11:45:00.0	55.62	15.75	69.7	CTD	on deck
0187-2	2012-04-16 11:48:00.0	55.62	15.75	69.7	WP2 Net	surface
0187-2	2012-04-16 11:58:00.0	55.62	15.75	69.5	WP2 Net	on deck
0187-3	2012-04-16 12:01:00.0	55.62	15.75	70.9	Helgolaender Larven Netz   HLN	surface
0187-3	2012-04-16 12:16:00.0	55.62	15.75	69.5	Helgolaender Larven Netz   HLN	on deck
0187-4	2012-04-16 12:19:00.0	55.62	15.75	69.2	BONGO Netz   BONGO	surface

Table 2 continued

0187-4	2012-04-16 12:31:00.0	55.63	15.73	68.9	BONGO Netz   BONGO	on deck
0188-1	2012-04-16 13:20:00.0	55.63	15.52	68.1	BONGO Netz   BONGO	surface
0188-1	2012-04-16 13:31:00.0	55.62	15.50	67.9	BONGO Netz   BONGO	on deck
0188-2	2012-04-16 13:35:00.0	55.62	15.50	67.8	CTD	surface
0188-2	2012-04-16 13:40:00.0	55.62	15.50	67.6	CTD	on deck
0189-1	2012-04-16 14:40:00.0	55.63	15.25	76.2	CTD	surface
0189-1	2012-04-16 14:46:00.0	55.63	15.25	76.2	CTD	on deck
0189-2	2012-04-16 14:49:00.0	55.63	15.25	75.8	Helgolaender Larven Netz   HLN	surface
0189-2	2012-04-16 15:02:00.0	55.63	15.25	76.3	Helgolaender Larven Netz   HLN	on deck
0189-3	2012-04-16 15:05:00.0	55.63	15.25	76.4	BONGO Netz   BONGO	surface
0189-3	2012-04-16 15:15:00.0	55.63	15.23	76.8	BONGO Netz   BONGO	on deck
0190-1	2012-04-16 16:03:00.0	55.62	15.02	80.2	BONGO Netz   BONGO	surface
0190-1	2012-04-16 16:14:00.0	55.62	15.01	81.0	BONGO Netz   BONGO	on deck
0190-2	2012-04-16 16:18:00.0	55.62	15.00	81.4	CTD	surface
0190-2	2012-04-16 16:24:00.0	55.62	15.00	76.2	CTD	on deck
0191-1	2012-04-16 17:21:00.0	55.62	14.75	68.5	CTD	surface
0191-1	2012-04-16 17:27:00.0	55.62	14.75	68.4	CTD	on deck
0191-2	2012-04-16 17:30:00.0	55.62	14.75	69.2	BONGO Netz   BONGO	surface
0191-2	2012-04-16 17:40:00.0	55.62	14.75	74.5	BONGO Netz   BONGO	on deck
0192-1	2012-04-16 18:38:00.0	55.46	14.77	70.1	BONGO Netz   BONGO	surface
0192-1	2012-04-16 18:47:00.0	55.46	14.75	69.6	BONGO Netz   BONGO	on deck
0192-2	2012-04-16 18:50:00.0	55.46	14.75	69.7	CTD	surface
0192-2	2012-04-16 18:55:00.0	55.46	14.75	69.8	CTD	on deck
0193-1	2012-04-16 19:45:00.0	55.46	15.00	78.5	CTD	surface
0193-1	2012-04-16 19:51:00.0	55.46	15.00	78.8	CTD	on deck
0193-2	2012-04-16 19:54:00.0	55.46	15.00	78.4	BONGO Netz   BONGO	surface
0193-2	2012-04-16 20:06:00.0	55.45	15.02	78.1	BONGO Netz   BONGO	on deck
0194-1	2012-04-16 20:58:00.0	55.46	15.27	91.2	BONGO Netz   BONGO	surface
0194-1	2012-04-16 21:11:00.0	55.46	15.26	91.9	BONGO Netz   BONGO	on deck
0194-2	2012-04-16 21:14:00.0	55.46	15.25	92.9	CTD	surface
0194-2	2012-04-16 21:21:00.0	55.46	15.25	90.4	CTD	on deck
0195-1	2012-04-16 22:15:00.0	55.46	15.50	95.3	CTD	surface
0195-1	2012-04-16 22:21:00.0	55.46	15.50	85.6	CTD	on deck
0195-2	2012-04-16 22:26:00.0	55.46	15.50	88.9	Helgolaender Larven Netz   HLN	surface
0195-2	2012-04-16 22:42:00.0	55.46	15.49	95.3	Helgolaender Larven Netz   HLN	on deck
0195-3	2012-04-16 22:49:00.0	55.46	15.49	85.3	BONGO Netz   BONGO	surface
0195-3	2012-04-16 22:59:00.0	55.46	15.48	85.1	BONGO Netz   BONGO	on deck
0196-1	2012-04-17 00:04:00.0	55.29	15.52	94.0	BONGO Netz   BONGO	surface
0196-1	2012-04-17 00:17:00.0	55.29	15.51	93.3	BONGO Netz   BONGO	on deck
0196-2	2012-04-17 00:22:00.0	55.29	15.50	93.2	CTD	surface

Table 2 continued

0196-2	2012-04-17 00:29:00.0	55.29	15.50	93.2	CTD	on deck
0197-1	2012-04-17 01:20:00.0	55.29	15.28	88.8	CTD	surface
0197-1	2012-04-17 01:28:00.0	55.29	15.28	87.9	CTD	on deck
0197-2	2012-04-17 01:32:00.0	55.29	15.28	88.0	Helgolaender Larven Netz   HLN	surface
0197-2	2012-04-17 01:49:00.0	55.29	15.28	86.0	Helgolaender Larven Netz   HLN	on deck
0197-3	2012-04-17 01:54:00.0	55.29	15.27	84.3	BONGO Netz   BONGO	surface
0197-3	2012-04-17 02:05:00.0	55.29	15.26	77.8	BONGO Netz   BONGO	on deck
0198-1	2012-04-17 02:58:00.0	55.30	15.02	73.1	BONGO Netz   BONGO	surface
0198-1	2012-04-17 03:08:00.0	55.29	15.00	72.4	BONGO Netz   BONGO	on deck
0198-2	2012-04-17 03:12:00.0	55.29	15.00	72.4	CTD	surface
0198-2	2012-04-17 03:18:00.0	55.29	15.00	72.1	CTD	on deck
0199-1	2012-04-17 04:02:00.0	55.29	15.03	73.0	Jungfischtrawl   JFT	surface
0199-1	2012-04-17 04:16:00.0	55.29	15.01	72.4	Jungfischtrawl   JFT	begin fishing
0199-1	2012-04-17 04:45:00.0	55.29	14.97	71.1	Jungfischtrawl   JFT	end fishing
0199-1	2012-04-17 04:57:00.0	55.29	14.96	71.7	Jungfischtrawl   JFT	on deck
0200-1	2012-04-17 06:04:00.0	55.44	15.07	77.3	Jungfischtrawl   JFT	surface
0200-1	2012-04-17 06:17:00.0	55.44	15.06	79.0	Jungfischtrawl   JFT	begin fishing
0200-1	2012-04-17 06:46:00.0	55.45	15.01	75.0	Jungfischtrawl   JFT	end fishing
0200-1	2012-04-17 07:05:00.0	55.44	14.99	70.6	Jungfischtrawl   JFT	on deck
0201-1	2012-04-17 09:21:00.0	55.29	15.36	89.4	Jungfischtrawl   JFT	surface
0201-1	2012-04-17 09:32:00.0	55.29	15.35	89.6	Jungfischtrawl   JFT	begin fishing
0201-1	2012-04-17 09:51:00.0	55.29	15.32	91.5	Jungfischtrawl   JFT	end fishing
0201-1	2012-04-17 10:04:00.0	55.29	15.31	91.2	Jungfischtrawl   JFT	on deck
0202-1	2012-04-17 11:07:00.0	55.29	15.59	95.8	Jungfischtrawl   JFT	surface
0202-1	2012-04-17 11:17:00.0	55.29	15.58	95.3	Jungfischtrawl   JFT	begin fishing
0202-1	2012-04-17 11:38:00.0	55.29	15.55	103.9	Jungfischtrawl   JFT	end fishing
0202-1	2012-04-17 11:48:00.0	55.29	15.54	94.4	Jungfischtrawl   JFT	on deck
0203-1	2012-04-17 13:06:00.0	55.45	15.58	85.6	Jungfischtrawl   JFT	surface
0203-1	2012-04-17 13:19:00.0	55.45	15.56	84.3	Jungfischtrawl   JFT	begin fishing
0203-1	2012-04-17 13:40:00.0	55.45	15.53	87.6	Jungfischtrawl   JFT	end fishing
0203-1	2012-04-17 13:57:00.0	55.46	15.53	83.3	Jungfischtrawl   JFT	on deck
0204-1	2012-04-17 15:25:00.0	55.46	15.73	84.7	BONGO Netz   BONGO	surface
0204-1	2012-04-17 15:39:00.0	55.46	15.75	85.0	BONGO Netz   BONGO	on deck
0204-2	2012-04-17 15:57:00.0	55.45	15.75	88.0	CTD	surface
0204-2	2012-04-17 16:04:00.0	55.45	15.75	86.3	CTD	on deck
0205-1	2012-04-17 17:00:00.0	55.46	16.00	83.3	CTD	surface
0205-1	2012-04-17 17:06:00.0	55.46	16.00	82.8	CTD	on deck
0205-2	2012-04-17 17:09:00.0	55.46	16.00	82.9	Helgolaender Larven Netz   HLN	surface
0205-2	2012-04-17 17:28:00.0	55.46	16.00	83.1	Helgolaender Larven Netz   HLN	on deck
0205-3	2012-04-17 17:32:00.0	55.46	16.00	83.5	BONGO Netz   BONGO	surface



Table 2 continued

0205-3	2012-04-17 17:47:00.0	55.45	15.98	83.7	BONGO Netz   BONGO	on deck
0206-1	2012-04-17 18:40:00.0	55.46	16.23	75.1	BONGO Netz   BONGO	surface
0206-1	2012-04-17 18:53:00.0	55.46	16.25	74.4	BONGO Netz   BONGO	on deck
0206-2	2012-04-17 18:56:00.0	55.46	16.25	74.7	CTD	surface
0206-2	2012-04-17 19:02:00.0	55.46	16.25	73.7	CTD	on deck
0207-1	2012-04-17 19:55:00.0	55.46	16.50	58.6	CTD	surface
0207-1	2012-04-17 20:00:00.0	55.46	16.50	58.4	CTD	on deck
0207-2	2012-04-17 20:02:00.0	55.46	16.50	59.0	BONGO Netz   BONGO	surface
0207-2	2012-04-17 20:11:00.0	55.45	16.50	56.8	BONGO Netz   BONGO	on deck
0208-1	2012-04-17 21:04:00.0	55.30	16.50	61.0	BONGO Netz   BONGO	surface
0208-1	2012-04-17 21:13:00.0	55.29	16.50	63.3	BONGO Netz   BONGO	on deck
0208-2	2012-04-17 21:17:00.0	55.29	16.50	62.3	CTD	surface
0208-2	2012-04-17 21:22:00.0	55.29	16.50	61.9	CTD	on deck
0209-1	2012-04-17 22:18:00.0	55.29	16.25	74.0	CTD	surface
0209-1	2012-04-17 22:24:00.0	55.29	16.25	74.1	CTD	on deck
0209-2	2012-04-17 22:27:00.0	55.29	16.25	74.1	WP2 Net	surface
0209-2	2012-04-17 22:38:00.0	55.29	16.25	74.1	WP2 Net	on deck
0209-3	2012-04-17 22:42:00.0	55.29	16.25	73.9	BONGO Netz   BONGO	surface
0209-3	2012-04-17 22:52:00.0	55.28	16.26	73.3	BONGO Netz   BONGO	on deck
0210-1	2012-04-17 23:49:00.0	55.30	15.99	90.6	BONGO Netz   BONGO	surface
0210-1	2012-04-18 00:02:00.0	55.29	16.00	89.2	BONGO Netz   BONGO	on deck
0210-2	2012-04-18 00:05:00.0	55.29	16.00	89.2	CTD	surface
0210-2	2012-04-18 00:12:00.0	55.29	16.00	89.1	CTD	on deck
0211-1	2012-04-18 01:08:00.0	55.29	15.75	98.7	CTD	surface
0211-1	2012-04-18 01:14:00.0	55.29	15.75	99.0	CTD	on deck
0211-2	2012-04-18 01:19:00.0	55.29	15.75	97.4	WP2 Net	surface
0211-2	2012-04-18 01:33:00.0	55.29	15.75	101.2	WP2 Net	on deck
0211-3	2012-04-18 01:36:00.0	55.29	15.75	99.2	BONGO Netz   BONGO	surface
0211-3	2012-04-18 01:50:00.0	55.28	15.76	97.8	BONGO Netz   BONGO	on deck
0212-1	2012-04-18 03:56:00.0	55.46	15.75	86.9	Jungfischtrawl   JFT	surface
0212-1	2012-04-18 04:10:00.0	55.44	15.76	87.6	Jungfischtrawl   JFT	begin fishing
0212-1	2012-04-18 04:40:00.0	55.42	15.77	92.4	Jungfischtrawl   JFT	end fishing
0212-1	2012-04-18 04:53:00.0	55.41	15.77	90.4	Jungfischtrawl   JFT	on deck
0213-1	2012-04-18 05:46:00.0	55.46	16.00	83.3	Jungfischtrawl   JFT	surface
0213-1	2012-04-18 06:03:00.0	55.45	16.01	83.4	Jungfischtrawl   JFT	begin fishing
0213-1	2012-04-18 06:23:00.0	55.43	16.03	84.0	Jungfischtrawl   JFT	end fishing
0213-1	2012-04-18 06:37:00.0	55.43	16.04	84.0	Jungfischtrawl   JFT	on deck
0214-1	2012-04-18 07:25:00.0	55.46	16.25	74.6	Jungfischtrawl   JFT	surface
0214-1	2012-04-18 07:36:00.0	55.45	16.26	74.0	Jungfischtrawl   JFT	begin fishing
0214-1	2012-04-18 08:05:00.0	55.43	16.28	72.2	Jungfischtrawl   JFT	end fishing

Table 2 continued

0214-1	2012-04-18 08:17:00.0	55.42	16.29	70.9	Jungfischtrawl   JFT	on deck
0215-1	2012-04-18 09:23:00.0	55.29	16.25	74.4	Jungfischtrawl   JFT	surface
0215-1	2012-04-18 09:35:00.0	55.28	16.26	73.0	Jungfischtrawl   JFT	begin fishing
0215-1	2012-04-18 10:05:00.0	55.26	16.28	69.8	Jungfischtrawl   JFT	end fishing
0215-1	2012-04-18 10:15:00.0	55.26	16.28	69.7	Jungfischtrawl   JFT	on deck
0216-1	2012-04-18 11:19:00.0	55.29	16.00	89.2	Jungfischtrawl   JFT	surface
0216-1	2012-04-18 11:31:00.0	55.28	16.01	89.0	Jungfischtrawl   JFT	begin fishing
0216-1	2012-04-18 12:01:00.0	55.26	16.03	88.9	Jungfischtrawl   JFT	end fishing
0216-1	2012-04-18 12:14:00.0	55.26	16.04	88.1	Jungfischtrawl   JFT	on deck
0217-1	2012-04-18 13:17:00.0	55.29	15.75	99.7	Jungfischtrawl   JFT	surface
0217-1	2012-04-18 13:47:00.0	55.29	15.78	98.9	Jungfischtrawl   JFT	begin fishing
0217-1	2012-04-18 14:17:00.0	55.28	15.82	95.2	Jungfischtrawl   JFT	end fishing
0217-1	2012-04-18 14:30:00.0	55.28	15.84	95.8	Jungfischtrawl   JFT	on deck
0218-1	2012-04-18 15:29:00.0	55.29	15.75	99.4	CTD	surface
0218-1	2012-04-18 15:36:00.0	55.29	15.75	100.5	CTD	on deck
0218-2	2012-04-18 15:41:00.0	55.29	15.75	99.4	watersamper/CTD	surface
0218-2	2012-04-18 15:55:00.0	55.29	15.75	98.5	watersamper/CTD	on deck
0218-3	2012-04-18 16:13:00.0	55.29	15.75	100.4	watersamper/CTD	surface
0218-3	2012-04-18 16:21:00.0	55.29	15.75	98.5	watersamper/CTD	on deck
0218-4	2012-04-18 16:26:00.0	55.29	15.75	98.8	Helgolaender Larven Netz   HLN	surface
0218-4	2012-04-18 16:45:00.0	55.29	15.75	98.8	Helgolaender Larven Netz   HLN	on deck
0219-1	2012-04-18 18:05:00.0	55.13	15.50	67.7	CTD	surface
0219-1	2012-04-18 18:11:00.0	55.13	15.50	67.7	CTD	on deck
0219-2	2012-04-18 18:14:00.0	55.13	15.50	67.7	BONGO Netz   BONGO	surface
0219-2	2012-04-18 18:24:00.0	55.13	15.49	67.8	BONGO Netz   BONGO	on deck
0220-1	2012-04-18 19:07:00.0	55.12	15.26	63.3	BONGO Netz   BONGO	surface
0220-1	2012-04-18 19:17:00.0	55.12	15.25	61.4	BONGO Netz   BONGO	on deck
0220-2	2012-04-18 19:21:00.0	55.12	15.25	61.8	Helgolaender Larven Netz   HLN	surface
0220-2	2012-04-18 19:34:00.0	55.13	15.25	62.1	Helgolaender Larven Netz   HLN	on deck
0220-3	2012-04-18 19:38:00.0	55.13	15.25	61.9	CTD	surface
0220-3	2012-04-18 19:42:00.0	55.12	15.25	61.8	CTD	on deck
0221-1	2012-04-18 20:43:00.0	54.96	15.25	43.5	CTD	surface
0221-1	2012-04-18 20:47:00.0	54.96	15.25	44.1	CTD	on deck
0221-2	2012-04-18 20:50:00.0	54.96	15.25	44.0	BONGO Netz   BONGO	surface
0221-2	2012-04-18 20:56:00.0	54.96	15.26	44.8	BONGO Netz   BONGO	on deck
0222-1	2012-04-18 21:40:00.0	54.96	15.48	77.2	BONGO Netz   BONGO	surface
0222-1	2012-04-18 21:52:00.0	54.96	15.50	79.8	BONGO Netz   BONGO	on deck
0222-2	2012-04-18 21:58:00.0	54.96	15.50	79.9	Helgolaender Larven Netz   HLN	surface
0222-2	2012-04-18 22:12:00.0	54.96	15.50	79.2	Helgolaender Larven Netz   HLN	on deck
0222-3	2012-04-18 22:16:00.0	54.96	15.50	76.8	CTD	surface

Table 2 continued

0222-3	2012-04-18 22:21:00.0	54.96	15.50	80.0	CTD	on deck
0223-1	2012-04-18 23:26:00.0	54.79	15.50	76.7	CTD	surface
0223-1	2012-04-18 23:31:00.0	54.79	15.50	77.7	CTD	on deck
0223-2	2012-04-18 23:36:00.0	54.79	15.50	76.7	BONGO Netz   BONGO	surface
0223-2	2012-04-18 23:45:00.0	54.79	15.51	73.9	BONGO Netz   BONGO	on deck
0224-1	2012-04-19 00:50:00.0	54.63	15.49	63.1	BONGO Netz   BONGO	surface
0224-1	2012-04-19 01:00:00.0	54.63	15.50	63.5	BONGO Netz   BONGO	on deck
0224-2	2012-04-19 01:03:00.0	54.63	15.50	63.5	CTD	surface
0224-2	2012-04-19 01:08:00.0	54.63	15.50	63.3	CTD	on deck
0225-1	2012-04-19 02:04:00.0	54.63	15.25	58.8	CTD	surface
0225-1	2012-04-19 02:08:00.0	54.63	15.25	58.8	CTD	on deck
0225-2	2012-04-19 02:12:00.0	54.63	15.25	59.0	BONGO Netz   BONGO	surface
0225-2	2012-04-19 02:21:00.0	54.63	15.25	61.0	BONGO Netz   BONGO	on deck
0226-1	2012-04-19 03:14:00.0	54.78	15.25	67.3	BONGO Netz   BONGO	surface
0226-1	2012-04-19 03:23:00.0	54.79	15.25	67.8	BONGO Netz   BONGO	on deck
0226-2	2012-04-19 03:28:00.0	54.79	15.25	71.5	CTD	surface
0226-2	2012-04-19 03:33:00.0	54.79	15.25	67.9	CTD	on deck
0227-1	2012-04-19 03:55:00.0	54.79	15.26	67.9	Jungfischtrawl   JFT	surface
0227-1	2012-04-19 04:10:00.0	54.79	15.27	68.9	Jungfischtrawl   JFT	begin fishing
0227-1	2012-04-19 04:39:00.0	54.78	15.31	69.3	Jungfischtrawl   JFT	end fishing
0227-1	2012-04-19 04:52:00.0	54.78	15.33	69.4	Jungfischtrawl   JFT	on deck
0228-1	2012-04-19 05:29:00.0	54.79	15.49	76.8	Jungfischtrawl   JFT	surface
0228-1	2012-04-19 05:45:00.0	54.79	15.52	76.6	Jungfischtrawl   JFT	begin fishing
0228-1	2012-04-19 06:27:00.0	54.79	15.57	75.0	Jungfischtrawl   JFT	end fishing
0228-1	na	na	na	na	Jungfischtrawl   JFT	on deck
0229-1	2012-04-19 07:32:00.0	54.96	15.49	77.9	Jungfischtrawl   JFT	surface
0229-1	2012-04-19 07:47:00.0	54.96	15.51	79.6	Jungfischtrawl   JFT	begin fishing
0229-1	2012-04-19 08:18:00.0	54.95	15.55	77.3	Jungfischtrawl   JFT	end fishing
0229-1	2012-04-19 08:30:00.0	54.95	15.56	81.1	Jungfischtrawl   JFT	on deck
0230-1	2012-04-19 09:35:00.0	55.12	15.47	67.8	Jungfischtrawl   JFT	surface
0230-1	2012-04-19 09:48:00.0	55.13	15.49	67.9	Jungfischtrawl   JFT	begin fishing
0230-1	2012-04-19 10:18:00.0	55.13	15.53	71.3	Jungfischtrawl   JFT	end fishing
0230-1	2012-04-19 10:28:00.0	55.13	15.54	71.9	Jungfischtrawl   JFT	on deck
0231-1	2012-04-19 11:33:00.0	55.13	15.25	62.0	Jungfischtrawl   JFT	surface
0231-1	2012-04-19 11:54:00.0	55.12	15.28	65.2	Jungfischtrawl   JFT	begin fishing
0231-1	2012-04-19 12:28:00.0	55.12	15.32	72.5	Jungfischtrawl   JFT	end fishing
0231-1	2012-04-19 12:40:00.0	55.12	15.33	71.0	Jungfischtrawl   JFT	on deck
0232-1	2012-04-21 08:33:00.0	55.29	15.75	95.8	CTD	surface
0232-1	2012-04-21 08:40:00.0	55.29	15.75	95.9	CTD	on deck
0232-2	2012-04-21 08:43:00.0	55.29	15.75	98.6	Geschlepptes Multinetz   MSN-towed	surface

Table 2 continued

0232-2	2012-04-21 09:27:00.0	55.29	15.81	96.5	Geschlepptes Multinetz   MSN-towed	on deck
0232-3	2012-04-21 09:48:00.0	55.29	15.75	96.7	Geschlepptes Multinetz   MSN-towed	surface
0232-3	2012-04-21 10:25:00.0	55.29	15.80	97.2	Geschlepptes Multinetz   MSN-towed	on deck
0232-4	2012-04-21 10:51:00.0	55.29	15.75	98.6	Geschlepptes Multinetz   MSN-towed	surface
0232-4	2012-04-21 11:37:00.0	55.29	15.82	94.4	Geschlepptes Multinetz   MSN-towed	on deck
0232-5	2012-04-21 12:01:00.0	55.29	15.75	96.8	Geschlepptes Multinetz   MSN-towed	surface
0232-5	2012-04-21 12:37:00.0	55.29	15.80	98.3	Geschlepptes Multinetz   MSN-towed	on deck
0232-6	2012-04-21 12:56:00.0	55.29	15.75	98.2	Geschlepptes Multinetz   MSN-towed	surface
0232-6	2012-04-21 13:35:00.0	55.29	15.80	97.2	Geschlepptes Multinetz   MSN-towed	on deck
0232-7	2012-04-21 13:55:00.0	55.29	15.75	101.6	Geschlepptes Multinetz   MSN-towed	surface
0232-7	2012-04-21 14:32:00.0	55.29	15.80	95.5	Geschlepptes Multinetz   MSN-towed	on deck
0232-8	2012-04-21 14:50:00.0	55.29	15.75	99.9	Geschlepptes Multinetz   MSN-towed	surface
0232-8	2012-04-21 15:35:00.0	55.29	15.81	94.4	Geschlepptes Multinetz   MSN-towed	on deck
0232-9	2012-04-21 15:55:00.0	55.29	15.75	95.6	Geschlepptes Multinetz   MSN-towed	surface
0232-9	2012-04-21 16:36:00.0	55.29	15.80	94.7	Geschlepptes Multinetz   MSN-towed	on deck
0232-1	2012-04-21 16:54:00.0	55.29	15.75	98.9	Geschlepptes Multinetz   MSN-towed	surface
0232-1	2012-04-21 17:09:00.0	55.29	15.77	95.4	Geschlepptes Multinetz   MSN-towed	on deck
0232-1	2012-04-21 17:20:00.0	55.29	15.75	95.7	Geschlepptes Multinetz   MSN-towed	surface
0232-1	2012-04-21 18:04:00.0	55.29	15.81	97.4	Geschlepptes Multinetz   MSN-towed	on deck
0232-1	2012-04-21 18:24:00.0	55.29	15.75	98.4	Geschlepptes Multinetz   MSN-towed	surface
0232-1	2012-04-21 19:00:00.0	55.29	15.80	95.0	Geschlepptes Multinetz   MSN-towed	on deck
0232-1	2012-04-21 19:17:00.0	55.29	15.75	101.5	Geschlepptes Multinetz   MSN-towed	surface
0232-1	2012-04-21 20:06:00.0	55.29	15.81	96.2	Geschlepptes Multinetz   MSN-towed	on deck
0232-1	2012-04-21 20:23:00.0	55.29	15.75	98.4	CTD	surface
0232-1	2012-04-21 20:31:00.0	55.29	15.75	99.6	CTD	on deck
0233-1	2012-04-21 21:39:00.0	55.30	15.41	90.4	CTD	surface
0233-1	2012-04-21 21:46:00.0	55.30	15.41	90.4	CTD	on deck
0233-2	2012-04-21 21:49:00.0	55.30	15.41	90.4	WP2 Net	surface
0233-2	2012-04-21 22:00:00.0	55.30	15.41	90.6	WP2 Net	on deck
0234-1	2012-04-22 03:59:00.0	55.12	15.25	61.7	CTD	surface
0234-1	2012-04-22 04:04:00.0	55.12	15.25	61.5	CTD	on deck
0234-2	2012-04-22 04:09:00.0	55.12	15.25	61.8	Geschlepptes Multinetz   MSN-towed	surface
0234-2	2012-04-22 04:48:00.0	55.12	15.30	67.0	Geschlepptes Multinetz   MSN-towed	on deck
0234-3	2012-04-22 05:05:00.0	55.12	15.25	61.8	Geschlepptes Multinetz   MSN-towed	surface
0234-3	2012-04-22 05:45:00.0	55.12	15.30	67.3	Geschlepptes Multinetz   MSN-towed	on deck
0234-4	2012-04-22 06:20:00.0	55.12	15.25	61.7	Geschlepptes Multinetz   MSN-towed	surface
0234-4	2012-04-22 06:57:00.0	55.12	15.30	67.3	Geschlepptes Multinetz   MSN-towed	on deck
0234-5	2012-04-22 07:12:00.0	55.12	15.25	61.9	Geschlepptes Multinetz   MSN-towed	surface
0234-5	2012-04-22 07:50:00.0	55.12	15.30	67.3	Geschlepptes Multinetz   MSN-towed	on deck
0235-1	2012-04-22 10:51:00.0	55.13	15.75	91.0	CTD	surface

Table 2 continued

0235-1	2012-04-22 10:58:00.0	55.12	15.75	89.3	CTD	on deck
0235-2	2012-04-22 11:03:00.0	55.12	15.75	90.5	Helgolaender Larven Netz   HLN	surface
0235-2	2012-04-22 11:22:00.0	55.13	15.74	89.6	Helgolaender Larven Netz   HLN	on deck
0235-3	2012-04-22 11:28:00.0	55.12	15.74	89.4	watersamper/CTD	surface
0235-3	2012-04-22 11:45:00.0	55.12	15.74	90.8	watersamper/CTD	on deck
0236-1	2012-04-22 12:50:00.0	54.96	15.75	81.0	Helgolaender Larven Netz   HLN	surface
0236-1	2012-04-22 13:07:00.0	54.96	15.75	81.0	Helgolaender Larven Netz   HLN	on deck
0236-2	2012-04-22 13:12:00.0	54.96	15.75	81.0	CTD	surface
0236-2	2012-04-22 13:19:00.0	54.96	15.75	82.8	CTD	on deck
0237-1	2012-04-22 15:17:00.0	55.12	16.25	81.6	CTD	surface
0237-1	2012-04-22 15:24:00.0	55.12	16.25	80.7	CTD	on deck
0237-2	2012-04-22 15:27:00.0	55.12	16.25	81.0	BONGO Netz   BONGO	surface
0237-2	2012-04-22 15:39:00.0	55.11	16.24	81.6	BONGO Netz   BONGO	on deck
0238-1	2012-04-22 16:31:00.0	55.13	16.49	51.0	BONGO Netz   BONGO	surface
0238-1	2012-04-22 16:39:00.0	55.13	16.50	51.2	BONGO Netz   BONGO	on deck
0238-2	2012-04-22 16:43:00.0	55.12	16.50	51.5	CTD	surface
0238-2	2012-04-22 16:47:00.0	55.12	16.50	51.3	CTD	on deck
0239-1	2012-04-22 18:05:00.0	54.96	16.25	49.8	CTD	surface
0239-1	2012-04-22 18:09:00.0	54.96	16.25	49.8	CTD	on deck
0239-2	2012-04-22 18:11:00.0	54.96	16.25	49.7	BONGO Netz   BONGO	surface
0239-2	2012-04-22 18:19:00.0	54.95	16.25	48.0	BONGO Netz   BONGO	on deck
0240-1	2012-04-22 19:30:00.0	54.80	16.00	53.2	BONGO Netz   BONGO	surface
0240-1	2012-04-22 19:39:00.0	54.79	16.00	52.1	BONGO Netz   BONGO	on deck
0240-2	2012-04-22 19:41:00.0	54.79	16.00	51.8	CTD	surface
0240-2	2012-04-22 19:46:00.0	54.79	16.00	51.7	CTD	on deck
0241-1	2012-04-22 21:02:00.0	54.63	15.75	59.8	CTD	surface
0241-1	2012-04-22 21:06:00.0	54.63	15.75	59.8	CTD	on deck
0241-2	2012-04-22 21:09:00.0	54.63	15.75	59.8	BONGO Netz   BONGO	surface
0241-2	2012-04-22 21:18:00.0	54.62	15.75	59.3	BONGO Netz   BONGO	on deck
0242-1	2012-04-23 03:59:00.0	54.79	15.75	71.6	Jungfischtrawl   JFT	surface
0242-1	2012-04-23 04:13:00.0	54.80	15.75	75.6	Jungfischtrawl   JFT	begin fishing
0242-1	2012-04-23 04:42:00.0	54.83	15.75	75.7	Jungfischtrawl   JFT	end fishing
0242-1	2012-04-23 04:54:00.0	54.84	15.75	79.5	Jungfischtrawl   JFT	on deck
0243-1	2012-04-23 05:41:00.0	54.96	15.75	82.5	Jungfischtrawl   JFT	surface
0243-1	2012-04-23 05:56:00.0	54.95	15.75	82.0	Jungfischtrawl   JFT	begin fishing
0243-1	2012-04-23 06:25:00.0	54.92	15.75	80.6	Jungfischtrawl   JFT	end fishing
0243-1	2012-04-23 06:38:00.0	54.91	15.76	82.1	Jungfischtrawl   JFT	on deck
0244-1	2012-04-23 07:41:00.0	55.00	15.99	79.7	Jungfischtrawl   JFT	surface
0244-1	2012-04-23 07:51:00.0	55.01	15.98	78.1	Jungfischtrawl   JFT	begin fishing
0244-1	2012-04-23 08:20:00.0	55.03	15.99	86.7	Jungfischtrawl   JFT	end fishing

Table 2 continued

0244-1	2012-04-23 08:32:00.0	55.04	15.99	83.0	Jungfischtrawl   JFT	on deck
0245-1	2012-04-23 09:26:00.0	55.12	16.00	88.3	Jungfischtrawl   JFT	surface
0245-1	2012-04-23 09:37:00.0	55.11	15.99	91.0	Jungfischtrawl   JFT	begin fishing
0245-1	2012-04-23 10:06:00.0	55.10	15.96	88.6	Jungfischtrawl   JFT	end fishing
0245-1	2012-04-23 10:18:00.0	55.09	15.95	89.8	Jungfischtrawl   JFT	on deck
0246-1	2012-04-23 11:03:00.0	55.12	15.75	89.1	Jungfischtrawl   JFT	surface
0246-1	2012-04-23 11:20:00.0	55.11	15.76	91.1	Jungfischtrawl   JFT	begin fishing
0246-1	2012-04-23 11:39:00.0	55.10	15.78	87.8	Jungfischtrawl   JFT	end fishing
0246-1	2012-04-23 11:51:00.0	55.10	15.79	92.2	Jungfischtrawl   JFT	on deck
0247-1	2012-04-23 12:45:00.0	55.13	16.00	87.0	CTD	surface
0247-1	2012-04-23 12:52:00.0	55.12	16.00	89.3	CTD	on deck
0247-2	2012-04-23 12:55:00.0	55.12	16.00	88.8	BONGO Netz   BONGO	surface
0247-2	2012-04-23 13:09:00.0	55.12	16.02	89.1	BONGO Netz   BONGO	on deck
0248-1	2012-04-23 14:06:00.0	54.96	15.98	78.4	BONGO Netz   BONGO	surface
0248-1	2012-04-23 14:20:00.0	54.96	16.00	73.9	BONGO Netz   BONGO	on deck
0248-2	2012-04-23 14:23:00.0	54.96	16.00	73.9	Helgolaender Larven Netz   HLN	surface
0248-2	2012-04-23 14:39:00.0	54.96	16.00	73.9	Helgolaender Larven Netz   HLN	on deck
0248-3	2012-04-23 14:44:00.0	54.96	16.00	73.9	CTD	surface
0248-3	2012-04-23 14:50:00.0	54.96	16.00	74.0	CTD	on deck
0249-1	2012-04-23 16:10:00.0	54.79	15.75	74.2	CTD	surface
0249-1	2012-04-23 16:16:00.0	54.79	15.75	71.9	CTD	on deck
0249-2	2012-04-23 16:19:00.0	54.79	15.75	74.7	BONGO Netz   BONGO	surface
0249-2	2012-04-23 16:30:00.0	54.80	15.75	72.8	BONGO Netz   BONGO	on deck
0250-1	2012-04-23 17:22:00.0	54.95	15.75	82.5	BONGO Netz   BONGO	surface
0250-1	2012-04-23 17:37:00.0	54.96	15.75	82.8	BONGO Netz   BONGO	on deck
0250-2	2012-04-23 17:40:00.0	54.96	15.75	83.1	CTD	surface
0250-2	2012-04-23 17:46:00.0	54.96	15.75	81.1	CTD	on deck
0251-1	2012-04-23 18:46:00.0	55.12	15.75	89.3	CTD	surface
0251-1	2012-04-23 18:53:00.0	55.12	15.75	89.2	CTD	on deck
0251-2	2012-04-23 18:58:00.0	55.13	15.75	89.3	BONGO Netz   BONGO	surface
0251-2	2012-04-23 19:11:00.0	55.14	15.74	90.6	BONGO Netz   BONGO	on deck
0252-1	2012-04-23 19:59:00.0	55.27	15.71	99.7	Hydroacoustic transect   TRANSECT	start
0252-1	2012-04-23 23:21:00.0	55.27	15.71	97.0	Hydroacoustic transect   TRANSECT	end
0253-1	2012-04-24 04:00:00.0	55.32	15.71	98.6	CTD	surface
0253-1	2012-04-24 04:07:00.0	55.32	15.71	96.8	CTD	on deck
0253-2	2012-04-24 04:12:00.0	55.32	15.71	98.0	BONGO Netz   BONGO	surface
0253-2	2012-04-24 04:29:00.0	55.31	15.73	100.6	BONGO Netz   BONGO	on deck
0253-3	2012-04-24 04:45:00.0	55.32	15.69	98.4	Jungfischtrawl   JFT	surface
0253-3	2012-04-24 05:02:00.0	55.32	15.71	99.1	Jungfischtrawl   JFT	begin fishing
0253-3	2012-04-24 05:21:00.0	55.31	15.73	95.8	Jungfischtrawl   JFT	end fishing

Table 2 continued

0253-3	2012-04-24 05:35:00.0	55.30	15.75	99.5	Jungfischtrawl   JFT	on deck
0254-1	2012-04-24 06:02:00.0	55.29	15.74	99.9	BONGO Netz   BONGO	surface
0254-1	2012-04-24 06:17:00.0	55.29	15.76	95.5	BONGO Netz   BONGO	on deck
0254-2	2012-04-24 06:29:00.0	55.29	15.72	100.1	Jungfischtrawl   JFT	surface
0254-2	2012-04-24 06:43:00.0	55.29	15.74	101.6	Jungfischtrawl   JFT	begin fishing
0254-2	2012-04-24 07:13:00.0	55.29	15.78	95.2	Jungfischtrawl   JFT	end fishing
0254-2	2012-04-24 07:25:00.0	55.29	15.80	99.1	Jungfischtrawl   JFT	on deck
0255-1	2012-04-24 08:01:00.0	55.32	15.78	97.3	BONGO Netz   BONGO	surface
0255-1	2012-04-24 08:18:00.0	54.32	10.78		BONGO Netz   BONGO	on deck
0255-2	2012-04-24 08:29:00.0	55.32	15.76	95.4	Jungfischtrawl   JFT	surface
0255-2	2012-04-24 08:41:00.0	55.32	15.78	98.2	Jungfischtrawl   JFT	begin fishing
0255-2	2012-04-24 09:01:00.0	55.32	15.81	94.7	Jungfischtrawl   JFT	end fishing
0255-2	2012-04-24 09:14:00.0	55.32	15.82	96.8	Jungfischtrawl   JFT	on deck
0256-1	2012-04-24 09:57:00.0	55.27	15.69	95.7	BONGO Netz   BONGO	surface
0256-1	2012-04-24 10:11:00.0	55.27	15.71	99.8	BONGO Netz   BONGO	on deck
0256-2	2012-04-24 10:26:00.0	55.27	15.67	99.6	Jungfischtrawl   JFT	surface
0256-2	2012-04-24 10:40:00.0	55.27	15.69	99.5	Jungfischtrawl   JFT	begin fishing
0256-2	2012-04-24 11:00:00.0	55.27	15.71	95.6	Jungfischtrawl   JFT	end fishing
0256-2	2012-04-24 11:12:00.0	55.27	15.72	98.3	Jungfischtrawl   JFT	on deck
0257-1	2012-04-24 11:48:00.0	55.27	15.78	96.6	BONGO Netz   BONGO	surface
0257-1	2012-04-24 12:03:00.0	55.27	15.80	97.2	BONGO Netz   BONGO	on deck
0257-2	2012-04-24 12:16:00.0	55.27	15.76	97.4	Jungfischtrawl   JFT	surface
0257-2	2012-04-24 12:28:00.0	55.27	15.78	95.6	Jungfischtrawl   JFT	begin fishing
0257-2	2012-04-24 12:58:00.0	55.27	15.82	96.6	Jungfischtrawl   JFT	end fishing
0257-2	2012-04-24 13:10:00.0	55.27	15.83	95.9	Jungfischtrawl   JFT	on deck
0258-1	2012-04-24 13:22:00.0	55.27	15.79	96.3	Hydroacoustic transect   TRANSECT	start
0258-1	2012-04-24 16:16:00.0	55.27	15.79	94.0	Hydroacoustic transect   TRANSECT	end
0259-1	2012-04-24 20:03:00.0	54.79	14.98	59.9	BONGO Netz   BONGO	surface
0259-1	2012-04-24 20:13:00.0	54.79	14.99	60.1	BONGO Netz   BONGO	on deck
0259-2	2012-04-24 20:17:00.0	54.79	15.00	60.2	CTD	surface
0259-2	2012-04-24 20:22:00.0	54.79	15.00	60.2	CTD	on deck
0260-1	2012-04-25 03:56:00.0	54.94	13.78	50.7	CTD	surface
0260-1	2012-04-25 04:00:00.0	54.94	13.78	47.4	CTD	on deck
0260-2	2012-04-25 04:04:00.0	54.94	13.78	50.8	Jungfischtrawl   JFT	surface
0260-2	2012-04-25 04:19:00.0	54.94	13.76	51.4	Jungfischtrawl   JFT	begin fishing
0260-2	2012-04-25 04:48:00.0	54.94	13.72	47.1	Jungfischtrawl   JFT	end fishing
0260-2	2012-04-25 05:02:00.0	54.94	13.70	54.2	Jungfischtrawl   JFT	on deck
0261-1	2012-04-25 05:50:00.0	54.94	13.50	47.2	CTD	surface
0261-1	2012-04-25 05:53:00.0	54.94	13.50	50.7	CTD	on deck
0261-2	2012-04-25 05:56:00.0	54.94	13.50	51.2	Jungfischtrawl   JFT	surface

Table 2 continued

0261-2	2012-04-25 06:08:00.0	54.94	13.48	47.1	Jungfischtrawl   JFT	begin fishing
0261-2	2012-04-25 06:39:00.0	54.93	13.44	47.0	Jungfischtrawl   JFT	end fishing
0261-2	2012-04-25 06:53:00.0	54.93	13.42	46.8	Jungfischtrawl   JFT	on deck