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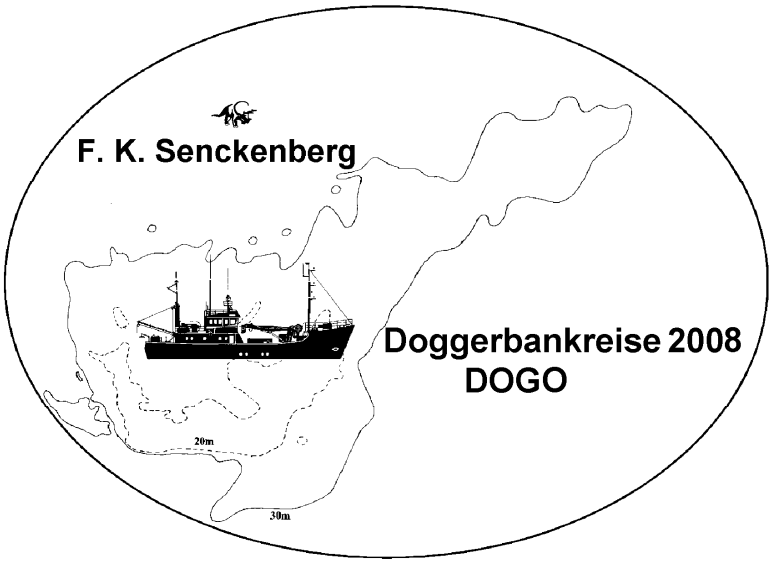
Report on the 2008 Dogger Bank cruise with R. V. Senckenberg

29. 7 – 7. 8. 2008



MICHAEL TÜRKAY & MORITZ SONNEWALD
Forschungsinstitut Senckenberg
Frankfurt a. M.

Contents:

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1. Aims and setting

The interannual variability of the epibenthic fauna of the Dogger Bank is a long term project of the Senckenberg-Institute since 1990. This project aims at gathering basic data which may form the background information for understanding presumed environmental changes. Therefore the study refers to 37 stations (see map in Annex) that are, whenever possible, sampled on a yearly basis in the same season with the same gear. The fauna is recorded quantitatively from each sample in order to allow studies on relative abundance. An important aspect is the recording of climate forced changes. This study therefore is also part of the scientific programme of the Research Centre "Biodiversity and Climate" funded by the state of Hessen. I thankfully acknowledge this support.

The present cruise forms the 15th of the series and gets the suffix DOG-O. All former cruises were labelled after the alphabet with one letter starting with DOG-A in 1991. The first in 1990 was called DOG without any suffix.

2. Narrative

After leaving the port of Wilhelmshaven on July 29, 2008 at 10.00 CEST (UTC+2), the vessel headed towards the first sampling area "Langes Riff" in front of the island of Wangerooge, that was reached at 12.23. Two ring-dredge-samples and a beamtrawl-sample were taken on a routine station. From there the vessel headed towards the main working area, the Doggerbank. Station 14 was reached on July 30, 2008 at 12.01 CEST. At this and the following stations conductivity, salinity and water temperature were measured through the whole water column to a maximum depth of 29 m with a probe (ME SM-24). Subsequently one sample with a ring-dredge and a 2m-beam-trawl was taken, respectively. Until the end of the day five stations were sampled (14, 13a, 4, 3, 5). At the following day (July 31, 2008) eight stations (6, 7, 8, 9, 10, 11, 12, 17) could be sampled. Work was continued on the next day (August 1, 2008) from 07.00 on and 7 stations were sampled (18, 20, 16, 22, 15, 23, 26). On the next day (August 2, 2008) altogether seven stations were sampled (21, 28, 27, 24, 25, 32, 33). Most of the remaining stations could be sampled the next day (August 3, 2008), i. e. nine stations (31, 29, 30, 35, 34, 36, 37, 38, 39). On the next day (August 4, 2008) a 48 hours sampling on station 40 (one epibenthic sledge and one beam trawl sample every 3 hours) was started. Due to increasing winds up to gale BFT 7 this sampling was ended after 4 successful tries at 19.14 when the vessel headed back towards the German Bight.

Helgoland was reached on August 5, 2008 at 13.33, where bunker was taken until 15.43. The next day was devoted to a project on some infauna elements of the Loreley Bank east of Helgoland. The Van Veen grab and the ring dredge were used on nine stations in order to get information on sediments and fauna, respectively. After that, one epibenthic sledge sample was taken on station LB-8 in order to have some basic information on the associated epibenthic small sized fauna. Work on the Loreley Bank ended at 16.10 CEST and the vessel headed towards the Helgoland Trench south of the island. This working area was reached at 16.45. The Beam Trawl was deployed once on the routine station sampled by us regularly. The aim of this work was to collect epibenthos-material in order to complement to life-cycle studies of decapod crustaceans of the German Bight. After this, the vessel headed back towards Helgoland, which was reached at 22.00. The vessel headed back towards the Jade Bay on August 7, 2008, 06.55 CEST, where CTD-measurements and sampling with the beam trawl were effectuated. Samples were taken on 4 routine-stations (D62, D63, D 65, D68). This work terminated at 16.00 and the vessel headed towards her home port Wilhelmshaven. which was reached at 17.05.

3. Methods:

For measuring environmental parameters a CTD probe (RCM) was used. The Probe was lowered to a maximum depth of 29 m. Then it was hauled to the sea surface. During heaving conductivity, salinity and temperature were recorded throughout the water column.

Epibenthos was collected with a 2m beam trawl with a tickler chain and a chain in the bottom rope. The minimum mesh size in the cod-end was 1 cm, so that animals above that size were collected quantitatively. The trawl was towed for 1 nautical mile at a speed of 2 knots. The sample was secured quantitatively (as far as possible) and washed through a set of sieves with 1 cm maximum and 1 mm minimum mesh size, respectively. The 1 cm-fraction was identified and counted on board the vessel, organisms not readily identifiable were preserved and taken back to the home laboratory. The smaller fractions were also preserved and taken back for qualitative analysis.

A ring-dredge equipped with a net of 1 cm mesh-size was used to collect endobenthos. The sand-sample was washed to separate larger debris and biological objects from the sediment.

On a selection of stations an epibenthic sledge (Hessler-type) with a 500 µ net was used to get information on smaller epibenthos. The sledge was towed at minimum speed (about 1.5 knots) for 5 minutes on the sea bed.

4. Station list

Abbreviations: BMT = Beam Trawl, D = Routine stations in Jade Bay, ES = Epibenthic sledge, HTR = Helgoland trench, LB = Loreley-Bank, LR = Langes Riff, RD = Ring-Dredge. – All depths in metres.

Station	Gear	Position start	Position end	Depth (m) from	Depth (m) to	Time (CEST)	Date
03	BMT	54°35,914'N 01°54,801'E	54°36,009'N 01°53,399'E	22,8	24,4	18.50-19.13	30.07.2008
03	CTD	54°36,070'N 01°55,347'E		24,6	24,6	18.32	30.07.2008
03	RD	54°36,070'N 01°55,347'E		24,6	24,6	18.32	30.07.2008
04	BMT	54°29,055'N 01°51,903'E	54°29,936'N 01°52,333'E	20,9	21	17.06-17.29	30.07.2008
04	CTD	54°28,717'N 01°51,868'E		20,2	20,2	16.46	30.07.2008
04	RD	54°28,710'N 01°51,771'E		20,4	20,4	16.52	30.07.2008
05	BMT	54°37,473'N 01°42,225'E	54°38,307'N 01°42,380'E	21,9	21,1	20.30-20.50	30.07.2008
05	CTD	54°36,957'N 01°42,155'E		23,3	23,3	20.10	30.07.2008
05	RD	54°36,946'N 01°42,212'E		23	23	20.15	30.07.2008
06	BMT	54°45,778'N 01°43,533'E	54°46,086'N 01°42,056'E	26,8	27,1	07.30-07.50	31.07.2008
06	CTD	54°45,601'N 01°44,107'E		30,6	30,6	07.00	31.07.2008
06	RD	54°45,697'N 01°44,080'E		29,5	29,5	07.00	31.07.2008
07	BMT	54°48,326'N 01°26,576'E	54°49,140'N 01°25,746'E	28,6	29,5	09.20-09.43	31.07.2008

Station	Gear	Position start	Position end	Depth (m) from	Depth (m) to	Time (CEST)	Date
07	CTD	54°47,921'N 01°27,117'E		27	27	09.05	31.07.2008
07	RD	54°48,066'N 01°26,973'E		29,3	29,3	09.07	31.07.2008
08	BMT	54°54,634'N 01°18,275'E	54°55,441'N 01°19,110'E	31,1	29,1	11.00-11.24	31.07.2008
08	CTD	54°54,073'N 01°18,770'E		30,8	30,8	10.40	31.07.2008
08	RD	54°54,359'N 01°18,278'E		31,2	31,2	10.47	31.07.2008
09	BMT	54°59,276'N 01°39,492'E	54°58,665'N 01°40,602'E	30,5	29,1	13.28-13.50	31.07.2008
09	CTD	54°59,651'N 01°39,246'E		31,1	31,1	13.07	31.07.2008
09	RD	54°59,635'N 01°39,267'E		31,2	31,2	12.14	31.07.2008
10	BMT	54°54,926'N 01°46,883'E	54°54,194'N 01°47,888'E	26,1	28,1	15.02-15.25	31.07.2008
10	CTD	54°55,220'N 01°46,795'E		26,6	26,6	14.45	31.07.2008
10	RD	54°55,174'N 01°46,868'E		25,8	25,8	14.51	31.07.2008
11	BMT	54°45,175'N 02°00,758'E	54°44,713'N 02°02,246'E	33,8	30,2	17.21-17.44	31.07.2008
11	CTD	54°45,444'N 02°00,395'E		32,9	32,9	17.03	31.07.2008
11	RD	54°45,396'N 02°00,459'E		32,8	32,8	17.08	31.07.2008
12	BMT	54°41,725'N 02°12,694'E	54°42,533'N 02°12,249'E	25	24,1	19.10-19.33	31.07.2008
12	CTD	54°41,590'N 02°12,871'E		25,2	25,2	18.53	31.07.2008
12	RD	54°41,555'N 02°12,800'E		25,6	25,6	19.00	31.07.2008
13a	BMT	54°27,231'N 02°15,099'E	54°27,312'N 02°13,799'E	18,1	18	14.47-15.08	30.07.2008
13A	CTD	54°27,026'N 02°16,254'E		17,6	17,6	14.32	30.07.2008
13A	RD	54°27,113'N 02°16,064'E		17,8	17,8	14.32	30.07.2008
14	BMT	54°30,878'N 02°39,438'E	54°30,619'N 02°37,807'E	23,2	22	12.27-12.50	30.07.2008
14	CTD	54°30,933'N 02°40,445'E		23,5	23,5	12.01	30.07.2008
14	RD	54°31,012'N 02°40,256'E		23,5	23,5	12:09	30.07.2008
15	BMT	54°40,380'N 02°28,790'E	54°41,192'N 02°28,911'E	20,6	21,7	15.12-15.33	01.08.2008
15	CTD	54°39,808'N 02°29,029'E		21	21	14.55	01.08.2008
15	RD	54°39,772'N 02°28,931'E		20,2	20,2	14.59	01.08.2008

Station	Gear	Position start	Position end	Depth (m) from	Depth (m) to	Time (CEST)	Date
16	BMT	54°47,820'N 02°19,717'E	54°47,262'N 02°21,088'E	22,6	22,6	11.10-11.31	01.08.2008
16	CTD	54°47,722'N 02°19,383'E		22,8	22,8	10.55	01.08.2008
16	RD	54°47,911'N 02°19,350'E		22,7	22,7	11.00	01.08.2008
17	BMT	54°52,011'N 02°05,168'E	54°51,859'N 02°05,222'E	23,2	23,3	21.00-21.30	31.07.2008
17	CTD	54°50,655'N 02°05,150'E		23,6	23,6	20.45	31.07.2008
17	RD	54°50,740'N 02°05,271'E		23,3	23,3	20.50	31.07.2008
18	BMT	54°59,303'N 02°05,877'E	54°59,046'N 02°07,682'E	29,8	29	07.20-07.45	01.08.2008
18	CTD	54°59,283'N 02°05,505'E		31,2	31,2	07.05	01.08.2008
18	RD	54°59,266'N 02°05,670'E		30	30	07.10	01.08.2008
20	BMT	54°56,055'N 02°19,845'E	54°54,990'N 02°20,11'E	28,8	27,3	09.15-08.40	01.08.2008
20	CTD	54°56,143'N 02°19,683'E		29,2	29,2	08.55	01.08.2008
20	RD	54°56,216'N 02°19,767'E		29,3	29,3	09.05	01.08.2008
21	BMT	54°52,149'N 02°36,436'E	54°52,705'N 02°37,464'E	24,9	25,2	07.20-07.42	02.08.2008
21	CTD	54°52,256'N 02°36,198'E		24,2	24,2	06.56	02.08.2008
21	RD	54°52,112'N 02°36,312'E		25	25	07.05	02.08.2008
22	BMT	54°45,850'N 02°32,308'E	54°44,958'N 02°31,729'E	23,3	22,5	13.09-13.33	01.08.2008
22	CTD	54°46,195'N 02°32,533'E		26	26	12.50	01.08.2008
22	RD	54°46,169'N 02°32,606'E		23,2	23,2	12.55	01.08.2008
23	BMT	54°44,791'N 02°46,287'E	54°45,807'N 02°46,966'E	20,5	20,8	17.38-18.05	01.08.2008
23	CTD	54°44,385'N 02°46,118'E		20,1	20,1	17.20	01.08.2008
23	RD	54°44,350'N 02°46,211'E		20,6	20,6	17.25	01.08.2008
24	BMT	54°56,262'N 02°57,330'E	54°57,147'N 02°57,852'E	23,4	23,7	13.04-13.27	02.08.2008
24	CTD	54°55,570'N 02°56,943'E		22,8	22,8	12.46	02.08.2008
24	RD	54°55,698'N 02°56,982'E		23,7	23,7	12.51	02.08.2008
25	BMT	54°49,035'N 03°03,353'E	54°48,151'N 03°02,922'E	30,3	30,3	15.25-15.48	02.08.2008
25	CTD	54°49,074'N 03°03,360'E		30,2	30,2	15.11	02.08.2008

Station	Gear	Position start	Position end	Depth (m) from	Depth (m) to	Time (CEST)	Date
25	RD	54°49,202'N 03°03,379'E		30,1	30,1	15.11	02.08.2008
26	BMT	54°50,798'N 02°49,403'E	54°51,625'N 02°50,568'E	21,6	22,6	19.05-19.18	01.08.2008
26	CTD	54°50,418'N 02°48,846'E		22,1	22,1	18.50	01.08.2008
26	RD	54°50,515'N 02°49,091'E		21,9	21,9	18.55	01.08.2008
27	BMT	54°56,892'N 02°53,740'E	54°57,334'N 02°53,959'E	25,2	25,2	11.27-11.44	02.08.2008
27	CTD	54°56,176'N 02°53,343'E		24,5	24,5	11.10	02.08.2008
27	RD	54°56,383'N 02°53,522'E		25,1	25,1	11.15	02.08.2008
28	BMT	55°00,028'N 02°38,028'E	55°00,853'N 02°39,560'E	28,1	27,8	09.03-09.25	02.08.2008
28	CTD	54°59,989'N 02°37,695'E		29,8	29,8	08.42	02.08.2008
28	RD	54°59,930'N 02°37,738'E		29,5	29,5	08.47	02.08.2008
29	BMT	55°08,016'N 02°41,640'E	55°08,323'N 02°43,195'E	28	28,4	08.20-09.42	03.08.2008
29	CTD	55°07,669'N 02°40,649'E		29,4	29,4	09.03	02.08.2008
29	RD	55°07,814'N 02°40,844'E		29,6	29,6	09.03	02.08.2008
30	BMT	55°12,821'N 02°56,304'E	55°12,658'N 02°58,080'E	34,2	36,4	10.57-11.20	03.08.2008
30	CTD	55°12.589'N 02°55,310'E		33,3	33,3	10.40	02.08.2008
30	RD	55°12.680'N 02°55,502'E		33,4	33,4	10.45	02.08.2008
31	BMT	55°05,157'N 02°54,370'E	55°05,469'N 02°52,596'E	28,4	28,2	07.25-07.48	03.08.2008
31	CTD	55°05,144'N 02°54,777'E		31,2	31,2	07.05	03.08.2008
31	RD	55°05,158'N 02°54,761'E		31,1	31,1	07.12	03.08.2008
32	BMT	54°56,213'N 03°06,232'E	54°57,063'N 03°06,748'E	23,8	23,3	17.08-17.31	02.08.2008
32	CTD	54°55,438'N 03°05,994'E		25,4	25,4	16.48	02.08.2008
32	RD	54°55,605'N 03°05,953'E		24,4	24,4	16.54	02.08.2008
33	BMT	55°01,813'N 03°10,710'E	55°02,765'N 03°10,879'E	26	27	18.55-19.22	02.08.2008
33	CTD	55°01.136'N 03°10,011'E		25,2	25,2	18.35	02.08.2008
33	RD	55°01.353'N 03°10,245'E		26,1	26,1	18.42	02.08.2008
34	BMT	55°06,805'N 03°27,991'E	55°07,703'N 03°27,256'E	28,3	27,4	15.09-15.32	03.08.2008

Station	Gear	Position start	Position end	Depth (m) from	Depth (m) to	Time (CEST)	Date
34	CTD	55°06,461'N 03°28.553'E		28,6	28,6	14.50	02.08.2008
34	RD	55°06,431'N 03°28.457'E		28,5	28,5	14.55	02.08.2008
35	BMT	55°10,278'N 03°12,600'E	55°10,071'N 03°14,066'E	30,2	30	13.12-13.34	03.08.2008
35	CTD	55°10,503'N 03°11,800'E		30	30	12.52	02.08.2008
35	RD	55°10,446'N 03°11,840'E		30,4	30,4	12.56	02.08.2008
36	BMT	55°18,694'N 03°19,374'E	55°19,303'N 03°20,499'E	29	30	17.21-17.43	03.08.2008
36	CTD	55°18.387'N 03°18,814'E		29	29	17.03	02.08.2008
36	RD	55°18.510'N 03°19,018'E		29,2	29,2	17.08	02.08.2008
37	BMT	55°23,320'N 03°34,914'E	55°23,344'N 03°36,800'E	31,8	31,2	19.05-19.30	03.08.2008
37	CTD	55°23,079'N 03°33,753'E		32,4	32,4	18.48	02.08.2008
37	RD	55°23,262'N 03°34,229'E		32,2	32,2	18.55	02.08.2008
38	BMT	55°22,975'N 03°49,024'E	55°23,525'N 03°50,481'E	30,5	29,3	20.40-21.05	03.08.2008
38	CTD	55°22,594'N 03°47,765'E		30,1	30,1	20.23	02.08.2008
38	RD	55°22,693'N 03°47,971'E		30,2	30,2	20.27	02.08.2008
39	BMT	55°29,090'N 03°59,497'E	55°28,457'N 04°00,603'E	32,1	31	22.13-22.36	03.08.2008
39	CTD	55°28,806'N 03°58,644'E		31,5	31,5	21.53	02.08.2008
39	RD	55°28,897'N 03°58,745'E		32,4	32,4	21.53	02.08.2008
40-1	BMT	55°27,612'N 04°08,219'E	55°27,525'N 04°10,267'E	31,2	31,5	07.54-08.20	04.08.2008
40-1	CTD	55°27,562'N 04°08,296'E		31,2	31,2	07.04	03.08.2008
40-1	ES	55°27,482'N 04°08,383'E		31	31	07.33	03.08.2008
40-1	RD	55°27,453'N 04°08,622'E		30,8	30,8	07.33	03.08.2008
40-2	BMT	55°27,326'N 04°11,894'E	55°27,345'N 04°10,418'E	31,6	20,6	10.25-10.45	04.08.2008
40-2	CTD	55°27,343'E 04°12,310'E		31,4	31,4	10.00	03.08.2008
40-2	ES	55°27,239'N 04°12,698'E		31,4	31,4	10.05	03.08.2008
40-3	BMT	55°27,505'N 04°08,354'E	55°27,666'N 04°06,815'E	30,4	30,3	13.24-13.47	04.08.2008
40-3	CTD	55°27,566'E 04°08.612'E		30,6	30,6	13.01	03.08.2008

Station	Gear	Position start	Position end	Depth (m) from	Depth (m) to	Time (CEST)	Date
40-3	ES	55°27,589'N 04°08.616'E		30,4	30,4	13.07	03.08.2008
40-4	BMT	55°27,657'N 04°08,231'E	55°28,024'N 04°06,821'E	30	30,2	16.22-16.45	04.08.2008
40-4	CTD	55°27,559 E 04°08.663'E		30,3	30,3	16.00	03.08.2008
40-4	ES	55°27,587'N 04°08.631'E		29,9	29,9	16.06	03.08.2008
D62-20080807	BMT	53°44,026'N 08°02,924'E	53°43,105'N 08°03,260'E	13,5	13,6	11.20	07.08.2008
D63-20080807	BMT	53°41,599'N 08°05,562'E	53°42,515'N 08°04,780'E	11,4	17,5	12.23-12.49	07.08.2008
D65-20080807	BMT	53°34,045'N 08°11,130'E	53°34,926'N 08°10,990'E	11,2	12,8	14.09-14.32	07.08.2008
D68-20080807	BMT	53°28,438'N 08°12,533'E	53°29,156'N 08°11,404'E	9,7	12,9	15.35-16.00	07.08.2008
HTR-20080806	BMT	54°08,773'N 07°53,286'E	54°08.771'N 07°51,434'E	56,9	58,8	16.52-17.19	06.08.2008
LB-20080806_01	RD	54°12,112'N 07°59,013'E		12,2	12,2	08.56	06.08.2008
LB-20080806_01	VV	54°12,136'N 08°00,078'E		12	12	08.50	06.08.2008
LB-20080806_04	VV	54°11,935'N 08°02,861'E		19,7	19,7	09.54	06.08.2008
LB-20080806_04-1	RD	54°11,941'N 08°02,936'E		20	20	10.03	06.08.2008
LB-20080806_04-2	RD	54°11,909'N 08°03,136'E		20,1	20,1	10.11	06.08.2008
LB-20080806_05	VV	54°13,039'N 08°01,995'E		13,2	13,2	10.32	06.08.2008
LB-20080806_05-1	RD	54°13,036'N 08°01,938'E		13,2	13,2	10.38	06.08.2008
LB-20080806_05-2	RD	54°13,053'N 08°01,976'E		12,7	12,7	11.16	06.08.2008
LB-20080806_06	VV	54°13,830'N 08°01,119'E		16,2	16,2	13.06	06.08.2008
LB-20080806_06-1	RD	54°13,912'N 08°01,235'E		16,3	16,3	13.13	06.08.2008
LB-20080806_06-2	RD	54°13,918'N 08°01,443'E		16,4	16,4	13.20	06.08.2008
LB-20080806_07	RD	54°11,991'N 08°00,985'E		11,2	11,2	08.25	06.08.2008
LB-20080806_07	VV	54°11,830'N 08°00,953'E		11,3	11,3	08.18	06.08.2008
LB-20080806_08	ES	54°13,160'N 08°00,968'E		16,3	16,3	15.36	06.08.2008
LB-20080806_08	RD-1	54°13,029'N 08°01,317'E		15,1	15,1	12.37	06.08.2008
LB-20080806_08	RD-2	54°13,094'N 08°01,382'E		14,1	14,1	12.42	06.08.2008
LB-20080806_08	VV	54°13,038'N 08°01,152'E		13,2	13,2	12.30	06.08.2008

Station	Gear	Position start	Position end	Depth (m) from	Depth (m) to	Time (CEST)	Date
LB-20080806_09	RD-1	54°12,937'N 08°58,109'E		17,1	17,1	13.56	06.08.2008
LB-20080806_09	RD-2	54°12,924'N 08°58,038'E		16,1	16,1	14.04	06.08.2008
LB-20080806_09	VV	54°12,946'N 08°58,117'E		16,8	16,8	13.50	06.08.2008
LB-20080806_10	RD-1	54°14,467'N 08°56,171'E		21,7	21,7	14.46	06.08.2008
LB-20080806_10	RD-2	54°14,370'N 08°56,426'E		21,2	21,2	14.54	06.08.2008
LB-20080806_10	VV	54°14,416'N 08°56,033'E		21,6	21,6	14.39	06.08.2008
LR-20080729_01	RD1	53°45,176'N 07°53,390'E		13,4	13,4	12.23	29.07.2008
LR-20080729_02	RD2	53°49,142'N 07°53,479'E		13,2	13,2	12.28	29.07.2008
LR-20080729_03	BMT	53°49,454'N 07°52,087'E	53°49,106'N 07°53,577'E	15,7	12,7	12.44-13.09	29.07.2008

Station map of Doggerbank cruises

5. Temperature and salinity data

The full CTD measurements are available as an MS-Excel-file. Here the shallowest and deepest measurements are listed, respectively. The maximum depths in which T/S-data were recorded do not necessarily correspond to the bottom depth.

Stat. No.	Max depth [m]	Temp [°C] Surface	Temp [°C] Max. depth	Salinity [ppt] Surface	Salinity [ppt] Max depth
3	24,7	15,66	15,31	34,848	34,864
4	20,3	15,83	15,54	34,787	34,805
5	23,4	15,75	15,71	34,763	34,709
6	27,9	15,20	15,07	34,615	34,418
7a	28,5	15,05	15,05	34,699	34,706
8	29,1	14,54	12,79	34,737	34,772
9	27,5	14,42	14,28	34,791	34,819
10	26,3	14,76	14,63	34,778	34,813
11	27,9	15,12	14,96	34,831	34,835
12	26,1	15,36	15,20	34,849	34,853
13a	17,5	15,72	15,59	34,863	34,938
14	22,6	15,79	15,73	34,958	35,055
15	20,6	15,36	15,26	34,938	34,926
16	23,8	14,73	14,73	34,871	34,897
17	23,2	14,82	14,79	34,832	34,862
18	25,0	14,70	14,39	34,777	34,795
20	20,0	14,73	14,33	34,781	34,851
21	25,4	15,05	14,97	34,842	34,861
22	22,7	14,91	14,87	34,907	34,941
23	20,2	15,42	15,33	34,884	34,915
26	21,9	15,24	15,18	34,903	34,912
28	23,1	14,65	14,03	34,838	34,866
DB050808	23,4	16,35	16,33	34,051	34,080
HTR050809_1	24,2	17,47	17,31	32,030	32,296