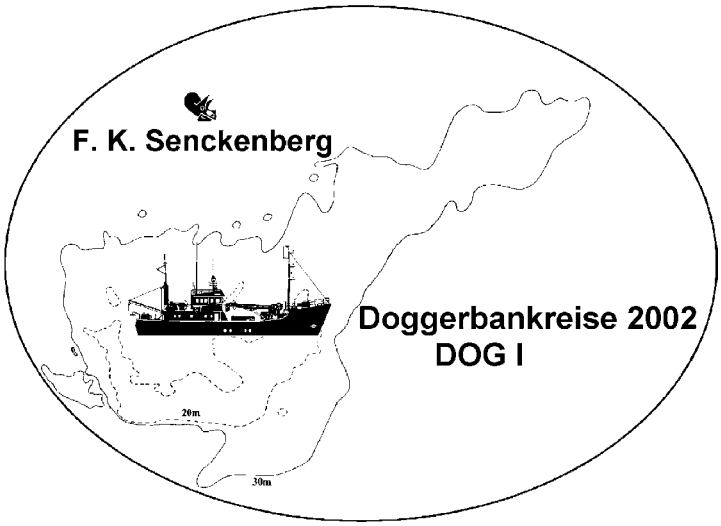
Report on the 2002 Dogger Bank cruise with R. V. Senckenberg

25. 7. – 2. 8. 2002



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Frankfurt a. M., March 2003

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 background information for understanding presumed environmental changes. Therefore the study refers to 37 stations 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.
The present cruise forms the 10th of the series and therefore gets the suffix DOG-I. All former cruises were labelled after the alphabet with one letter starting with DOG-A in 1991, after 1990 was called DOG without any suffix.

2. Narrative and methods

R. V. Senckenberg left Wilhelmshaven on Thursday July 25, 2002 at 09.30 local time, heading for the westernmost stations on the Dogger Bank.
Station 14 was reached on July 26, 2002 at 13.26 MEZ (UTC+1). At this and the following stations environmental parameters were measured with a probe deployed to just above the sea bed and one sample with the beam-trawl was taken. Until the end of the day five stations were sampled (14, 13, 4, 3, 5). At the following day (July 27, 2001) nine stations (6, 7, 8, 9, 10, 11, 12, 17, 18) could be sampled. Work was continued on the next day from 07.00 on and 10 stations were sampled (20, 16, 22, 15, 23, 26, 21, 28, 27, 24). On July 29, 2002 9 stations followed (25, 32, 33, 31, 29, 30, 35, 34, 36). On July 30, 2002 the vessel completed work on the remaining 3 stations, which could be fully sampled (37, 38, 39). On July 30, 2002 the last station (40) situated on the tail-end in the German sector was reached. As in earlier years a continuous trawling at a time distance of 3 hours between the samples was performed in order to gather information about the diurnal dynamics of the benthic fauna. Due to the shortage in time only 24 hours were sampled instead of 48 as in the former years. The first sample was taken at 06.50. Sampling continued up to July 31, 2002 13.00.
After finishing work on the Dogger Bank the vessel proceed to Helgoland, which was reached on August 1, 2002 at 08.00. After a short break sampling continued in the Helgoland trench (German Bight). The aim of this work was to collect epibenthos-material, especially of small size classes in order to complement to life-cycle studies of decapod crustaceans of the German Bight.
The vessel reached her home port Wilhelmshaven on August 1, 2002 at 22.00 local time.
For measuring environmental parameters a self registrating CTD probe/Current meter (RCM 9, Aanderaa instruments, Bergen) was used. The RCM 9 was deployed to the sea bed and measured environmental parameters at an interval of 2 minutes. The data were to be extracted in the home laboratory and presented in this report. Unfortunately due to a calibration problem the measurements were not usable.
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 2,8 knods. The sample was secured quantitatively (as far as possible) and washed through a set of sieves with 1cm 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.
Work in the German Bight was performed with an epibenthic sledge equipped with a net of 0.5 mm mesh-size. The whole sample was preserved for later analysis. Besides, also the beam trawl and a plancton net were used.

3. Station list

Nr.	Gear	Start position	End position	Depth from (m)	Depth to (m)	Time (UTC+1)	Date
3	RCM 9	54°36,107‘N 01°56,076‘E		23	23	19.32-1937	26. VII. 2002
3	Beam trawl	54°36,285‘N 01°53,307‘E	54°36,377‘N 01°53,427‘E	23,8	23,9	19.45-20.05	26. VII. 2002
4	RCM 9	54°28,291‘N 01°52,367‘E		19,7	19,7	17.59-18.04	26. VII. 2002
4	Beam trawl	54°28,857‘N 01°51,817‘E	54°29,788‘N 01°52,014‘E	19,8	20,9	18.17-18.38	26. VII. 2002
5	RCM 9	54°37,005‘N 01°42,796‘E		23,1	23,1	21.06-21.11	26. VII. 2002
5	Beam trawl	54°37,094‘N 01°41,928‘E	54°37,426‘N 01°40,374‘E	21,8	24,2	21.20-21.40	26. VII. 2002
6	RCM 9	54°45,476‘N 01°45,024‘E		26,8	26,8	06.15-06.20	27. VII. 2002
6	Beam trawl	54°45,439‘N 01°43,651‘E	54°45,383‘N 01°42,000‘E	26,8	27,4	07.05-07.25	27. VII. 2002
7	RCM 9	54°47,710‘N 01°27,899‘E		25,8	25,8	08.32-08.37	27. VII. 2002
7	Beam trawl	54°47,978‘N 01°26,93‘E	54°48,447‘N 01°25,351‘E	26,5	27,9	08.46-09.06	27. VII. 2002
8	RCM 9	54°53,675‘N 01°18,133‘E		32,9	32,9	10.02-10.07	27. VII. 2002
8	Beam trawl	54°53,959‘N 01°18,920‘E	54°54,478‘N 01°20,497‘E	28,9	31,5	10.16-10.37	27. VII. 2002
9	RCM 9	54°59,645‘N 01°38,385‘E		27,1	27,1	11.58-12.03	27. VII. 2002
9	Beam trawl	54°59,639‘N 01°39,349‘E	54°59,662‘N 01°41,245‘E	26,8	29,5	12.14-12.42	27. VII. 2002
10	RCM 9	54°55,777‘N 01°46,323‘E		25,1	25,1	13.20-13.25	27. VII. 2002
10	Beam trawl	54°55,271‘N 01°46,831‘E	54°54,447‘N 01°47,368‘E	25	26,8	13.38-13.54	27. VII. 2002
11	RCM 9	54°45,526‘N 01°59,473‘E		31,7	31,7	15.34-15.39	27. VII. 2002
11	Beam trawl	54°45,469‘N 02°00,225‘E	54°45,529‘N 02°02,071‘E	29,5	31,2	15.50-16.12	27. VII. 2002
12	RCM 9	54°41,086‘N 02°13,700‘E		22,6	22,6	17.25-17.30	27. VII. 2002
12	Beam trawl	54°41,635‘N 02°12,804‘E	54°42,624‘N 02°11,866‘E	22,8	23,3	17.44-18.04	27. VII. 2002
13	RCM 9	54°26,329‘N 02°22,066‘E		17,1	17,1	15.22-15.27	26. VII. 2002
13a	RCM 9	54°26,687‘N 02°17,170‘E		19,7	19,7	15.53-15.58	26. VII. 2002
13a	Beam trawl	54°27,062‘N 02°16,187‘E	54°22,626‘N 02°14,790‘E	16,4	17	16.05-16.25	26. VII. 2002

Nr.	Gear	Start position	End position	Depth from (m)	Depth to (m)	Time (UTC+1)	Date
14	RCM 9	54°30,803‘N 02°41,223‘E		23,9	23,9	13.26-13.31	26. VII. 2002
14	Beam trawl	54°30,910‘N 02°40,240‘E	54°31,011‘N 02°38,752‘E	21,8	23	13.41-14.01	26. VII. 2002
15	RCM 9	54°39,600‘N 02°27,949‘E		20,9	20,9	11.38-11.43	28. VII. 2002
15	Beam trawl	54°39,791‘N 02°29,017‘E	54°40,092‘N 02°30,788‘E	20,9	20,9	11.52-12.13	28. VII. 2002
16	RCM 9	54°48,017‘N 02°19,24‘E		23,7	23,7	08.41-08.46	28. VII. 2002
16	Beam trawl	54°47,438‘N 02°19,196‘E	54°46,450‘N 02°19,262‘E	22,9	23,5	08.55-09.00	28. VII. 2002
17	RCM 9	54°50,161‘N 02°05,614‘E		22,2	22,2	19.09-19.14	27. VII. 2002
17	Beam trawl	54°50,746‘N 02°05,181‘E	54°51,769‘N 02°05,413‘E	22,6	23,8	19.23-19.45	27. VII. 2002
18	RCM 9	54°59,299‘N 02°04,449‘E		29,3	29,3	20.47-20.52	27. VII. 2002
18	Beam trawl	54°59,524‘N 02°05,700‘E	54°59,716‘N 02°07,315‘E	28,2	28,8	21.00-21.21	27. VII. 2002
20	RCM 9	54°56,673‘N 02°19,424‘E		29,7	29,7	07.10-07.15	28. VII. 2002
20	Beam trawl	54°56,216‘N 02°19,682‘E	54°55,150‘N 02°19,616‘E	26,9	28,6	07.25-07.47	28. VII. 2002
21	RCM 9	54°50,604‘N 02°46,592‘E		23,3	23,3	16.17-16.22	28. VII. 2002
21	Beam trawl	54°50,604‘N 02°46,592‘E	54°53,353‘N 02°36,114‘E	23,3	24	16.31-16.53	28. VII. 2002
22	RCM 9	54°46,738‘N 02°32,772‘E		24,3	24,3	10.12	28. VII. 2002
22	Beam trawl	54°46,156‘N 02°32,573‘E	54°45,130‘N 02°32,148‘E	23,3	23,7	10.27-10.48	28. VII. 2002
23	RCM 9	54°43,999‘N 02°45,703‘E		19,6	19,6	13.23-13.28	28. VII. 2002
23	Beam trawl	54°44,394‘N 02°46,105‘E	54°45,391‘N 02°46,724‘E	19,3	19,5	13.38-13.59	28. VII. 2002
24	RCM 9	54°56,000‘N 02°56,205‘E		23,9	23,9	20.44-20.49	28. VII. 2002
24	Beam trawl	54°55,571‘N 02°57,021‘E	54°54,812‘E 02°58,123‘E	23,1	23,7	20.58-21.18	28. VII. 2002
25	RCM 9	54°48,791‘N 02°03,573‘E		29,7	29,7	07.00-07.05	29. VII. 2002
25	Beam trawl	54°49,088‘N 03°03,355‘E	54°49,590‘N 03°04,980‘E	30,3	31,5	07.14-07.34	29. VII. 2002
26	RCM 9	54°50,702‘N 02°48,531‘E		20,5	20,5	14.48-14.53	28. VII. 2002
26	Beam trawl	54°50,702‘N 02°48,531‘E	54°50,604‘N 02°46,592‘E	20,1	20,5	15.06-15.28	28. VII. 2002

Nr.	Gear	Start position	End position	Depth from (m)	Depth to (m)	Time (UTC+1)	Date
27	RCM 9	54°57,224‘N 02°52,708‘E		24	24	19.36-19.41	28. VII. 2002
27	Beam trawl	54°57,023‘N 02°53,685‘E	54°56,666‘N 02°55,360‘E	24,4	24,7	19.50-20.10	28. VII. 2002
27	RCM 9	54°57,045‘N 02°53,771‘E		24,8	24,8	20.24-20.29	28. VII. 2002
28	RCM 9	55°00,660‘N 02°36,826‘E		28,1	28,1	17.53-17.58	28. VII. 2002
28	Beam trawl	55°00,219‘N 02°37,665‘E	54°59,877‘N 02°39,414‘E	26,3	27,6	18.09-18.30	28. VII. 2002
29	RCM 9	55°07,073‘N 02°40,461‘E		27,3	27,3	12.56-13.01	29. VII. 2002
29	Beam trawl	55°07,614‘N 02°40,364‘E	55°08,658‘N 02°40,231‘E	28	28,9	13.11-13.34	29. VII. 2002
30	RCM 9	55°12,566‘N 02°55,675‘E		32,1	32,1	14.41-14.46	29. VII. 2002
30	Beam trawl	55°12,565‘N 02°55,376‘E	55°12,381‘N 02°55,376‘E	32,7	32,7	14.57-15.30	29. VII. 2002
31	RCM 9	55°05,444‘N 02°55,254‘E		30,1	30,1	11.26-11.31	29. VII. 2002
31	Beam trawl	55°05,534‘N 03°54,330‘E		28,5	28,5	11.40-12.00	29. VII. 2002
32	RCM 9	54°54,929‘N 03°05,698‘E		25,5	25,5	08.20-08.25	29. VII. 2002
32	Beam trawl	54°55,435‘N 03°05,936‘E	54°56,318‘N 03°06,707‘E	24,3	24,7	08.35-08.56	29. VII. 2002
33	RCM 9	55°01,073‘N 03°11,123‘E		25,7	25,7	09.45-09.50	29. VII. 2002
33	Beam trawl	55°01,538‘N 03°10,183‘E	55°02,328‘N 03°08,954‘E	25,6	25,4	09.59-10.20	29. VII. 2002
34	RCM 9	55°06,531‘N 03°27,597‘E		28,3	28,3	18.27-18.32	29. VII. 2002
34	Beam trawl	55°06,506‘N 03°28,585‘E	55°06,595‘N 03°30,387‘E	28	28,3	18.41-19.03	29. VII. 2002
35	RCM 9	55°10,796‘N 03°10,724‘E		29,1	29,1	16.27-16.32	29. VII. 2002
35	Beam trawl	55°10,569‘N 03°11,612‘E	55°10,036‘N 03°13,286‘E	29,1	29,3	16.20-16.45	29. VII. 2002
36	RCM 9	55°17,934‘N 03°19,123‘E		28,5	28,5	20.55-21.00	29. VII. 2002
36	Beam trawl	55°18,488‘N 03°18,792‘E	55°19,522‘N 03°18,575 E	28,5	28,9	21.09-21.29	29. VII. 2002
37	RCM 9	55°22,985‘N 03°33,058‘E		31,4	31,4	07.13-07.18	30. VII. 2002
37	Beam trawl	55°23,069‘N 03°34,044‘E	55°23,219‘N 03°35,867‘E	30,5	30,9	07.27-07.47	30. VII. 2002
38	RCM 9	55°22,569‘N 03°47,163‘E		29	29	08.44-08.59	30. VII. 2002

Nr.	Gear	Start position	End position	Depth from (m)	Depth to (m)	Time (UTC+1)	Date
38	Beam trawl	55°22,538‘N 03°48,054‘E	55°22,465‘N 03°49,890	29,1	29,2	08.59-09.20	30. VII. 2002
39	RCM 9	55°28,818‘N 03°57,416‘E		31,5	31,5	10.23-10.28	30. VII. 2002
39	Beam trawl	55°28,895‘N 03°58,350‘E	55°28,900‘N 04°00,215‘E	30,9	31,6	10.37-10.57	30. VII. 2002
40/1	RCM 9	55°28,202‘N 04°08,517‘E		29,7	29,7	12.47-12.52	30. VII. 2002
40/1	Beam trawl	55°27,561‘N 04°08,667‘E	55°26,505‘N 04°08,718‘E	29,7	29,7	13.05-13.25	30. VII. 2002
40/2	RCM 9	55°28,188‘N 04°08,732‘E		29,8	29,8	15.45-15.50	30. VII. 2002
40/2	Beam trawl	55°27,579‘N 04°08,537‘E	55°26,715‘N 04°07,761‘E	29,4	29,7	16.02-16.24	30. VII. 2002
40/3	RCM 9	55°28,093‘N 04°08,332‘E		29,9	29,9	18.48-18.53	30. VII. 2002
40/3	Beam trawl	55°27,574‘N 04°08,568‘E	55°26,589‘N 04°07,996‘E	29,7	29,7	19.03-1923	30. VII. 2002
40/4	RCM 9	55°28,178‘N 04°08,520‘E		29,7	29,7	21.45-21.50	30. VII. 2002
40/4	Beam trawl	55°27,550‘N 04°08,520‘E	55°26,518‘N 04°08,495‘E	29,9	30,0	22.00-22.21	30. VII. 2002
40/5	RCM 9	55°28,178‘N 04°08,520‘E		29,9	29,9	21.45-21.50	30. VII. 2002
40/5	Beam trawl	55°27,519‘N 04°08,800‘E	55°26,578‘N 04°09,051‘E	29,2	29,2	01.03-01.28	31. VII. 2002
40/6	RCM 9	55°28,231‘N 04°08,574‘E		29,9	29,9	03.44-03.49	31. VII. 2002
40/6	Beam trawl	55°27,561‘N 04°08,702‘E	55°26,493‘N 04°08,655‘E	29,4	29,5	04.04-04.27	31. VII. 2002
40/7	RCM 9	55°28,101‘N 04°08,665‘E		29,9	29,9	06.43-06.48	31. VII.2002
40/7	Beam trawl	55°27,566‘N 04°08,625‘E	55°26,607‘N 04°07,912‘E	29,9	29,9	07.08-07.29	31. VII. 2002
40/8	RCM 9	55°28,084‘N 04°08,159‘E		30,1	30,1	09.45-09.50	31. VII. 2002
40/8	Beam trawl	55°27,535‘N 04°08,578‘E	55°26,523‘N 04°08,449‘E	29,8	29,8	10.00-10.21	31. VII. 2002
40/9	RCM 9	55°28,164‘N 04°08,159‘E		30,6	30,6	12.43-12.48	31. VII. 2002
40/9	Beam trawl	55°28,510‘N 04°08,766‘E	55°26,519‘N 04°08,746‘E	29,9	30,3	12.59-13.20	31. VII. 2002
HTR 02-1	Bongo	54°08,287‘N 07°54,350‘E	54°07,963‘N 07°54,304‘E	Surface	Surface	11.00-11.10	1. VIII. 2002
HTR 02-2	ES	54°07,868‘N 07°53,728‘E	54°07,863 N 07°53,480‘E	52,9	52,9	11.22-11.27	1. VIII. 2002
HTR 02-3	ES	54°08,819‘N 07°50,916‘E	54°08,783‘N 07°51,076‘E	54,6	55,0	12.23-12.28	1. VIII. 2002

Nr.	Gear	Start position	End position	Depth from (m)	Depth to (m)	Time (UTC+1)	Date
HTR 02-4	RCM 9	54°08,331‘N 07°54,504‘E		56,4	56,4	13.15-13.20	1. VIII. 2002
HTR 02-4	Beam trawl	54°08,335‘N 07°54,815‘E	54°08,098‘N 07°53,007‘E	56,6	56,1	13.40-14.03	1. VIII. 2002
HTR 02-5	Beam trawl	54°08,534‘N 07°54,771‘E	54°08,590‘N 07°53,124‘E	53,9	55,7	14.50-15.10	1. VIII. 2002
HTR 02-6	Beam trawl	54°09,089‘N 07°55,243‘E	54°08,660‘N 07°53,486‘E	51,4	55,4	16.05-16.30	1. VIII. 2002
HTR 02-7	Bongo	53°56,994‘N 07°59,819‘E	53°56,614‘N 08°00,052‘E	Surface	Surface	18.09-18.19	1. VIII. 2002
HTR 02-8	ES	53°56,994‘N 07°59,819‘E	53°56,614‘N 08°00,052‘E	18,2	23,2	18.22-18.27	1. VIII. 2002

Abbreviations: Bongo = plancton net, ES = epibenthic sledge, HTR = Helgoland trench