

09.06.2005

**Cruise Report
Cruise 269 RV 'Walther Herwig III'
26.11. - 17.12.2004**

Chief Scientist: Dr. Thomas Lang

1 Abstract

As part of the regular monitoring activities of the Institute for Fishery Ecology of the Federal Research Centre for Fisheries on diseases and parasites of marine fish species, studies were conducted in 8 Baltic Sea and 10 North Sea areas. In addition to the examination of dab (*Limanda limanda*), haddock (*Melanogrammus aeglefinus*), herring (*Clupea harengus*), Baltic cod (*Gadus morhua*) and Baltic flounder (*Platichthys flesus*) for macroscopically visible external and internal diseases and parasites, samples were taken for studies on histopathological alterations in liver and spleen. Fish samples were frozen for the detection of radioactive substances and for measurements of contaminants in the framework of international programmes (OSPAR, HELCOM). In addition, hydrographical measurements were carried out (water temperature, salinity, oxygen content).

The results of the examination of dab for macroscopic lesions largely confirmed last year's findings. However, extraordinarily high prevalences of hyperpigmentation were recorded in dab from the Dogger Bank (53.1 %) and from the German Bight (45.4 %). In these areas, this phenomenon (the causes of which are still unknown) still seems to increase in prevalence. The prevalence of macroscopic liver nodules > 2 mm in diameter in North Sea dab also was elevated compared to previous surveys. The prevalence of acute/healing skin ulcerations in Baltic cod ranged between 0.9 % and 9.4 % and was, thus, comparable to previous years. 22.2 % of haddock sampled off the English coast were infested by the gill chamber parasite *Lernaecera branchialis*.

2 Objectives of the Cruise

1. Studies on the occurrence of fish diseases and parasites
2. Sampling of fish for chemical analysis of radioactive substances
3. Hydrographical measurements (salinity, temperature, oxygen)
4. Sampling of livers and other organs of fish for subsequent histological and biochemical studies
5. Further studies related to the finalised EU-funded BEEP project
6. Finalisation of work on a video documentation on studies on biological effects of contaminants and fish diseases carried out by the Institute for Fishery Ecology

3 Dates of the Cruise

RV 'Walther Herwig III' left Bremerhaven on 26.11. and studies were started in the morning of 28.11. in area B09 off Gdansk Bay, after passing through Kiel Channel. Seven further Baltic Sea sampling sites were visited. On 02.12. an exchange of scientists took place in Warnemünde. After returning to the North Sea on 07.12., work was continued in 10 North Sea areas, starting with area N01 in the German Bight. The cruise ended in the morning of 17.12. in Bremerhaven. The location of all 18 sampling areas and the cruise dates are shown in Figure 1 and Table 1a and 1b.

In the 18 sampling areas (Fig. 1), a total of 83 fishing hauls was performed (regular towing time 1 h) (see Table 1a). In the North Sea, the GOV was used, in the Baltic Sea a 140 ft bottom trawl with rock hoppers. Hydrographical measurements were made at 36 stations (see Table 1b).

4 Preliminary Results

4.1 Dab (*Limanda limanda*)

In total, 7,489 dab were examined for the occurrence of externally visible diseases and parasites and 1,016 dab for the occurrence of liver anomalies. Results are provided in Table 4 and 5. The prevalence of skin hyperpigmentation (increased aggregation of green to black pigment spots) in areas N04 (Dogger) and N01 (German Bight) was extremely high (53.1 % and 45.4 %, respectively). The prevalence of all other externally visible diseases was in the normal long-term range.

Liver nodules > 2 mm in diameter in dab \geq 25 cm total length were most prevalent off the British coast (area N22: 19.7 %; area N06: 14.3 %) and in the German Bight (area N01: 14.0 %). These values were higher than in previous surveys in the same sampling areas. Dab from the northern and western North Sea were generally more frequently affected by nematodes and acanthocephaleans in the body cavity than dab from the southern and eastern North Sea or western Baltic Sea.

4.2 Cod (*Gadus morhua*)

5,187 cod from the Baltic Sea were examined for the occurrence of externally visible diseases and parasites (see Table 6). The prevalence of acute/healing skin ulcerations was in the range of 0.9 % (area B05) to 9.4 % (area B11) and was mostly comparable to those recorded in previous years, except for area B11 where a significant increase occurred compared to December 2003. The prevalence of skeletal deformities was low (maximum 3.8 % in area B10).

4.3 Flounder (*Platichthys flesus*)

1,034 Baltic flounder were examined for externally visible diseases and parasites (Tab. 7). The prevalence of lymphocystis was in the range of 14.3 % (area B01) to 38.5 % (area B09) which is considered to be in the normal range. Also the prevalence of acute/healing skin ulcerations was more or less in the normal range (areas B01, B05: 0.0 %; area BEEP 3: 11.9 %). The value recorded at BEEP 3 off the Lithuanian coast was comparatively high, however.

4.4 Haddock (*Melanogrammus aeglefinus*)

In area N05 off the English coast, 607 haddock were examined for externally visible diseases and parasites. The prevalence of skeletal deformities was 3.8 %, and 22.2 % of the fish were infested by the gill chamber parasite *Lernaeocera branchialis*.

5 Miscellaneous

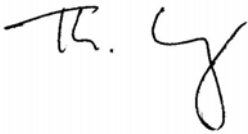
The mean catch data of the most frequent fish species are provided in Table 2; Table 3 gives results of the hydrographic measurements. Work on the video documentation on sea-going studies of the Institute of Fishery Ecology on biological effects of contaminants and on fish diseases and parasites was finalised.

6 Participants

- | | | |
|-----|------------------------|--|
| 1. | Dr. Thomas Lang (SIC) | IFÖ Cuxhaven |
| 2. | Thomas Tepperies | IFÖ Cuxhaven |
| 3. | Meike von Klinkowström | IFF Hamburg (from 02.12.) |
| 4. | Karen Bekaert | Sea Fish. Dept., Oostende, Belgien (Guest Scientist) |
| 5. | Paul Kotterba | Univ. Hamburg |
| 6. | Georg Respondek | Univ. Hamburg |
| 7. | Nico Geveke | Univ. Oldenburg |
| 8. | Kerstin Rapp | Univ. Stuttgart |
| 9. | Annett Seehagen | Univ. Kiel |
| 10. | Franziska Stoll | Univ. Rostock |
| 11. | Saskia Hinrichs | Univ. Rostock (to 02.12.) |
| 12. | Cornelia Faust | Univ. Rostock (to 02.12.) |
| 13. | Felix Baumgart | Univ. Rostock (from 03.12.) |
| 14. | Angela Junge | Univ. Rostock (from 03.12.) |

7 Acknowledgements

Thanks are due to Captain Zimmermann and his crew and to the scientific staff for constructive work and a good atmosphere on board.



Dr. Thomas Lang

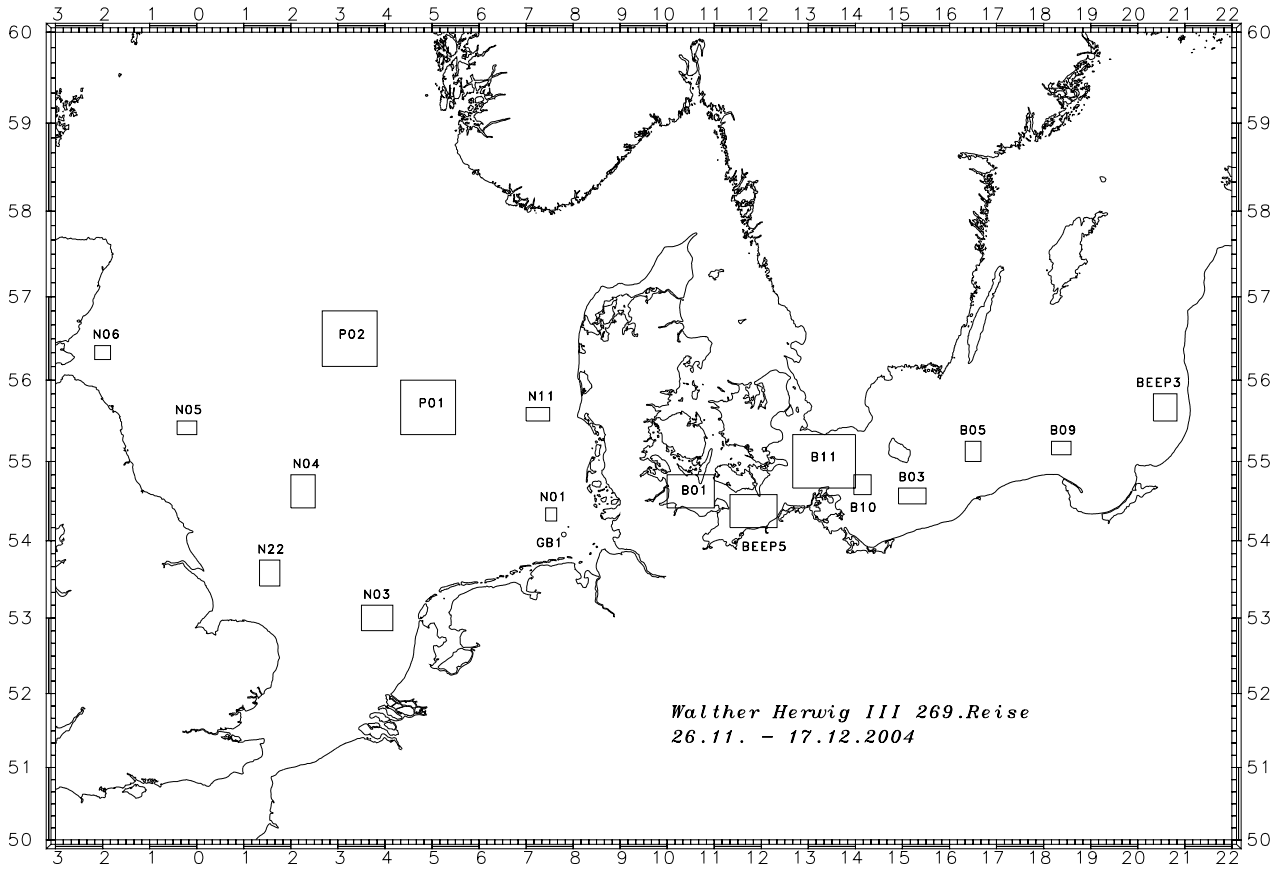
(Scientist in charge)

Annex

8 Tables

1 Figure

Fig. 1: Cruise 269 RV „Walther Herwig III“, 26.11.- 17.12.2004:
Location of sampling sites



Tab. 1a: Cruise 269 RV „Walther Herwig III“, 26.11. - 17.12.2004:
Geographical coordinates of trawling sites

DATE	STATION	Area	ICES-RECTANGLE	GEO LAT	GEO LONG
BALTIC SEA					
28.11.04	001	B09	39G8	55°06'39N	18°09'65E
28.11.04	002	B09	39G8	55°06'39N	18°24'45E
28.11.04	003	B09	39G8	55°07'12N	18°31'80E
28.11.04	004	B09	39G8	55°11'50N	18°27'33E
28.11.04	005	B09	39G8	55°12'87N	18°21'53E
28.11.04	006	B09	39G8	55°08'50N	18°24'82E
28.11.04	007	B09	39G8	55°10'76N	18°31'27E
29.11.04	008	BEEP3	40H0	55°36'06N	20°23'34E
29.11.04	009	BEEP3	40H0	55°39'04N	20°27'74E
29.11.04	010	BEEP3	40H0	55°31'51N	20°30'97E
29.11.04	011	BEEP3	40H0	55°37'38N	20°27'37E
29.11.04	012	BEEP3	40H0	55°41'00N	20°25'60E
30.11.04	013	B05	39G6	55°07'57N	16°22'19E
30.11.04	014	B05	39G6	55°10'20N	16°26'91E
30.11.04	015	B05	39G6	55°06'08N	16°26'22E
30.11.04	016	B05	39G6	55°06'27N	16°30'45E
30.11.04	017	B05	39G6	55°07'82N	16°24'00E
30.11.04	018	B05	39G6	55°04'00N	16°22'94E
01.12.04	019	B03	38G5	54°39'00N	15°22'62E
01.12.04	020	B03	38G5	54°38'63N	15°12'93E
01.12.04	021	B03	38G5	54°38'84N	15°04'15E
01.12.04	022	B03	38G4	54°39'06N	14°57'07E
01.12.04	023	B03	38G5	54°37'94N	15°05'49E
01.12.04	024	B03	38G5	54°34'89N	15°12'05E
01.12.04	025	B03	38G5	54°37'61N	15°12'30E
02.12.04	026	BEEP5	37G1	54°16'78N	11°51'83E
02.12.04	027	BEEP5	37G1	54°15'33N	11°45'13E
02.12.04	028	BEEP5	37G1	54°13'20N	11°40'04E
02.12.04	029	BEEP5	37G1	54°14'05N	11°46'34E
03.12.04	030	B11	38G3	54°45'91N	13°00'50E
03.12.04	031	B11	38G3	54°46'96N	13°10'68E
03.12.04	032	B11	38G3	54°46'03N	13°21'42E
03.12.04	033	B11	38G3	54°45'14N	13°28'87E
03.12.04	034	B11	38G3	54°43'29N	13°22'41E
04.12.04	035	B10	38G4	54°50'62N	14°01'58E
04.12.04	036	B10	38G4	54°49'92N	14°06'07E
04.12.04	037	B10	38G4	54°49'44N	14°01'09E
04.12.04	038	B10	38G4	54°49'55N	14°06'60E
05.12.04	039	B01	37G0	54°29'69N	10°41'43E
05.12.04	040	B01	38G0	54°33'61N	10°48'88E
05.12.04	041	B01	38G0	54°33'84N	10°32'41E
05.12.04	042	B01	38G0	54°36'24N	10°24'71E

Tab. 1a: (Cont.)

DATE	STATION	AREA	ICES-RECTANGLE	GEO LAT	GEO LONG
NORTH SEA					
07.12.04	043	N01	37F7	54°15'91N	07°27'79E
07.12.04	044	N01	37F7	54°20'07N	07°28'77E
07.12.04	045	N01	37F7	54°15'59N	07°29'63E
07.12.04	046	N01	37F7	54°20'57N	07°28'39E
08.12.04	047	N03	35F3	53°06'97N	03°54'31E
08.12.04	048	N03	35F3	53°00'95N	03°49'53E
08.12.04	049	N03	34F3	52°57'22N	03°47'88E
08.12.04	050	N03	34F3	52°51'57N	03°44'67E
09.12.04	051	N22	36F1	53°37'09N	01°39'18E
09.12.04	052	N22	36F1	53°40'90N	01°43'65E
09.12.04	053	N22	36F1	53°42'62N	01°38'34E
09.12.04	054	N22	36F1	53°39'47N	01°44'35E
09.12.04	055	N22	36F1	53°37'23N	01°40'10E
10.12.04	056	N04	37F2	54°27'30N	02°06'50E
10.12.04	057	N04	38F2	54°30'55N	02°15'99E
10.12.04	058	N04	38F2	54°38'48N	02°16'33E
10.12.04	059	N04	38F2	54°42'96N	02°08'17E
11.12.04	060	N05	39E9	55°20'82N	00°01'51W
11.12.04	061	N05	39E9	55°23'78N	00°04'91W
11.12.04	062	N05	39E9	55°21'04N	00°17'30W
11.12.04	063	N05	39E9	55°25'38N	00°13'40W
11.12.04	064	N05	39E9	55°28'39N	00°16'12W
12.12.04	065	N06	41E8	56°17'66N	01°57'37W
12.12.04	066	N06	41E7	56°18'99N	02°04'27W
12.12.04	067	N06	41E7	56°22'78N	02°07'86W
12.12.04	068	N06	41E7	56°17'18N	02°06'18W
12.12.04	069	N06	41E8	56°19'95N	01°57'98W
13.12.04	070	P02	41F3	56°21'13N	03°01'97E
13.12.04	071	P02	42F2	56°31'30N	02°59'96E
13.12.04	072	P02	42F3	56°40'58N	03°11'98E
13.12.04	073	P02	42F3	56°31'24N	03°18'97E
14.12.04	074	P01	40F4	55°47'21N	04°46'83E
14.12.04	075	P01	40F4	55°43'40N	04°51'45E
14.12.04	076	P01	40F4	55°40'26N	04°56'45E
14.12.04	077	P01	40F5	55°40'98N	05°02'01E
15.12.04	078	N11	40F7	55°30'81N	07°08'25E
15.12.04	079	N11	40F7	55°35'43N	07°01'33E
15.12.04	080	N11	40F7	55°36'63N	07°04'53E
16.12.04	081	GB1	37F7	54°04'65N	07°52'93E
16.12.04	082	GB1	37F7	54°06'36N	07°46'58E
16.12.04	083	GB1	37F7	54°06'27N	07°48'25E

Tab. 1b: Cruise 269 RV „Walther Herwig III“, 26.11.- 17.12.2004:
Geographical coordinates of hydrography stations

DATE	STATION	AREA	ICES-RECTANGLE	GEO LAT	GEO LONG
BALTIC SEA					
28.11.04	001	B09	39G8	55°06'39N	18°24'45E
28.11.04	002	B09	39G8	55°11'50N	18°27'33E
29.11.04	003	BEEP3	40H0	55°39'04N	20°27'74E
29.11.04	004	BEEP3	40H0	55°37'38N	20°27'37E
30.11.04	005	B05	39G6	55°10'20N	16°26'91E
30.11.04	006	B05	39G6	55°06'27N	16°30'45E
01.12.04	007	B03	38G5	54°38'63N	15°12'93E
01.12.04	008	B03	38G4	54°39'06N	14°57'07E
02.12.04	009	BEEP5	37G1	54°16'78N	11°51'83E
02.12.04	010	BEEP5	37G1	54°13'20N	11°40'04E
03.12.04	011	B11	38G3	54°45'91N	13°00'50E
03.12.04	012	B11	38G3	54°46'03N	13°21'42E
04.12.04	013	B10	38G4	54°49'92N	14°06'07E
04.12.04	014	B10	38G4	54°49'55N	14°06'60E
05.12.04	015	B01	38G0	54°33'61N	10°48'88E
05.12.04	016	B01	38G0	54°36'24N	10°24'71E
NORTH SEA					
07.12.04	017	N01	37F7	54°20'07N	07°28'77E
07.12.04	018	N01	37F7	54°20'57N	07°28'39E
08.12.04	019	N03	35F3	53°00'95N	03°49'53E
08.12.04	020	N03	34F3	52°51'57N	03°44'67E
09.12.04	021	N22	36F1	53°40'90N	01°43'65E
09.12.04	022	N22	36F1	53°39'47N	01°44'35E
10.12.04	023	N04	38F2	54°30'55N	02°15'99E
10.12.04	024	N04	38F2	54°42'96N	02°08'17E
11.12.04	025	N05	39E9	55°23'78N	00°04'91W
11.12.04	026	N05	39E9	55°25'38N	00°13'40W
12.12.04	027	N06	41E7	56°18'99N	02°04'27W
12.12.04	028	N06	41E7	56°17'18N	02°06'18W
13.12.04	029	P02	42F2	56°31'30N	02°59'96E
13.12.04	030	P02	42F3	56°31'24N	03°18'97E
14.12.04	031	P01	40F4	55°43'40N	04°51'45E
14.12.04	032	P01	40F5	55°40'98N	05°02'01E
15.12.04	033	N11	40F7	55°35'43N	07°01'33E
15.12.04	034	N11	40F7	55°36'63N	07°04'53E
16.12.04	035	GB1	37F7	54°04'65N	07°52'93E
16.12.04	036	GB1	37F7	54°06'36N	07°46'58E

Tab. 2: Cruise 269 RV „Walther Herwig III“, 26.11.- 17.12.2004:
Mean catches of selected abundant fish species
(n = number, kg = weight per 1 h trawling)

Area		Cod	Whiting	Haddock	Herring	Sprat	Mackerel	Dab	Plaice	Flounder
B09	n	172	-	-	8	2	-	-	1	4
	kg	68,0	-	-	< 0,5	< 0,5	-	-	< 0,5	2,0
BEEP3	n	401	-	-	6	1	-	-	1	32
	kg	142,0	-	-	< 0,5	< 0,5	-	-	< 0,5	14,0
B05	n	91	1	-	7	32	-	-	11	5
	kg	43,0	< 0,5	-	< 0,5	< 0,5	-	-	5,0	2,0
B03	n	90	1	-	27	17	-	-	11	15
	kg	30,0	< 0,5	-	1,0	< 0,5	-	-	3,0	5,0
BEEP5	n	114	52	5	564	312	-	222	9	22
	kg	40,0	12,0	2,0	24,0	5,0	-	28,0	2,0	7,0
B11	n	247	1	-	55	75	-	23	11	50
	kg	96,0	< 0,5	-	4,0	1,0	-	3,0	1,0	17,0
B10	n	282	72	-	31	612	-	2	8	174
	kg	123,0	22,0	-	2,0	6,0	-	< 0,5	2,0	67,0
B01	n	17	43	-	28	1.355	-	891	2	4
	kg	13,0	3,0	-	1,0	15,0	-	90,0	1,0	2,0
N01	n	5	42	-	11.060	25.894	-	1123	16	1
	kg	< 0,5	2,0	-	87,0	194,0	-	93,0	1,0	< 0,5
N03	n	4	68	-	23.472	18.257	-	142	27	-
	kg	3,0	3,0	-	290,0	173,0	-	14,0	4,0	-
N22	n	-	342	-	1.712	75.752	-	188	1	-
	kg	-	36,0	-	15,0	372,0	-	11,0	< 0,5	-
N04	n	2	590	-	-	33	-	309	2	-
	kg	1,0	35,0	-	-	< 0,5	-	31,0	1,0	-
N05	n	2	318	95	144	6.164	5	352	3	-
	kg	1,0	47,0	30,0	2,0	73,0	1,0	22,0	1,0	-
N06	n	3	7.951	12	96	31	2	253	-	-
	kg	1,0	174,0	1,0	2,0	< 0,5	< 0,5	13,0	-	-
P02	n	1	16	12	9	4	88	1.095	-	-
	kg	< 0,5	1,0	4,0	1,0	< 0,5	14,0	68,0	-	-
P01	n	5	30	3	60	75	1	633	2	-
	kg	1,0	1,0	< 0,5	1,0	< 0,5	< 0,5	49,0	< 0,5	-
N11	n	5	180	-	2.955	2.955	-	3.477	5	5
	kg	20,0	12,0	-	41,0	9,0	-	198,0	1,0	3,0
GB1	n	10	41	-	2.769	1.030	-	349	9	13
	kg	1,0	3,0	-	38,0	7,0	-	20,0	1,0	3,0

Tab. 3a: Cruise 269 RV „Walther Herwig III“, 26.11. - 17.12.2004:
Water depth, temperature (T), salinity (S) und O₂ saturation, Baltic Sea

DATE	STATION	AREA	DEPTH (m)	T (°C)	S (PSU)	O ₂ -SATURATION
28.11.2004	001	B09	2,0	6,30	7,36	84,70
			78,5	8,53	11,98	27,40
	002		2,0	7,16	7,32	87,65
			76,1	6,85	11,24	36,51
29.11.2004	003	BEEP 3	2,0	7,69	7,26	93,86
			66,9	7,98	7,40	91,84
	004		2,0	7,50	7,26	92,52
			52,3	7,57	7,28	90,11
30.11.2004	005	B05	2,0	7,75	7,78	93,20
			55,2	9,78	13,48	96,07
	006		2,0	6,96	7,60	93,12
			57,5	9,94	14,10	53,12
01.12.2004	007	B03	2,0	7,12	7,82	95,00
			53,5	8,23	11,37	54,67
	008		2,0	7,52	7,84	93,80
			52,3	8,41	10,91	55,11
02.12.2004	009	BEEP 5	2,0	6,75	16,09	96,67
			22,7	7,48	16,70	94,99
	010		2,0	6,61	15,50	94,50
			22,8	7,57	16,66	93,04
03.12.2004	011	B11	2,0	7,14	8,54	95,64
			33,4	7,56	13,60	90,48
	012		2,0	6,75	7,97	93,53
			38,0	7,83	11,34	89,09
04.12.2004	013	B10	2,0	6,77	8,32	95,96
			37,3	7,64	11,32	89,77
	014		2,0	6,78	8,37	93,91
			29,5	7,34	10,27	92,52
05.12.2004	015	B01	2,0	6,90	19,72	96,74
			21,8	7,66	20,17	83,17
	016		2,0	7,14	19,60	97,26
			21,1	7,73	20,14	81,63

Tab. 3b: Cruise 269 RV „Walther Herwig III“, 26.11.- 17.12.2004:
Water depth, temperature (T), salinity (S) und O₂ saturation, North Sea

DATE	STATION	AREA	DEPTH (m)	T (°C)	S (PSU)	O ₂ SATURATION
07.12.2004	017	N01	2,0	9,48	33,48	97,39
			40,0	9,71	33,72	96,77
	018		2,0	8,73	32,25	96,77
			24,0	9,59	33,34	94,55
08.12.2004	019	N03	2,0	10,29	35,18	96,38
			29,0	10,29	35,18	97,63
	020		2,0	10,31	35,18	97,12
			30,0	10,31	35,18	97,71
09.12.2004	021	N22	2,0	9,65	34,81	96,89
			23,0	9,65	34,80	97,19
	022		2,0	9,50	34,77	97,15
			25,0	9,50	34,77	95,92
10.12.2004	023	N04	2,0	8,42	34,89	99,70
			19,0	8,43	34,89	99,45
	024		2,0	8,62	34,92	96,76
			27,0	8,62	34,92	96,35
11.12.2004	025	N05	2,0	9,51	35,00	94,74
			69,0	9,52	34,99	94,59
	026		2,0	9,69	34,90	94,24
			68,0	9,69	35,01	94,29
12.12.2004	027	N06	2,0	9,59	34,48	94,19
			56,0	9,62	34,54	94,17
	028		2,0	9,48	34,40	94,26
			49,0	9,54	34,14	94,28
13.12.2004	029	P02	2,0	8,86	35,09	94,80
			68,0	8,86	35,09	94,86
	030		2,0	8,71	35,09	95,12
			68,0	8,72	35,09	95,41
14.12.2004	031	P01	2,0	8,80	35,04	95,46
			33,0	8,81	35,04	94,79
	032		2,0	9,28	35,09	94,60
			50,0	9,29	35,09	94,49
15.12.2004	033	N11	2,0	8,90	34,30	96,91
			28,0	8,90	34,29	96,52
	034		2,0	8,96	34,32	96,56
			28,0	8,95	34,32	96,75
16.12.2004	035	GB1	2,0	8,90	33,44	95,49
			36,0	8,93	33,45	95,79
	036		2,0	8,81	33,31	96,01
			38,0	8,82	33,31	96,64

Tab. 4: Cruise 269 RV „Walther Herwig III“, 26.11. - 17.12.2004:
Prevalences (%) of externally visible diseases and parasites of dab (*Limanda limanda*) in the Baltic Sea and North Sea

Area	N unt	Ly	Ep Hyp/Pap	Ulc Ak/Hei	Flo Ak/Hei	KieHy	Skel Def	Hyp Pig	Steph	Acanth	Lepe
BEEP5	612	4,1	0,0	0,5	2,5	0,0	0,3	0,0	0,0	0,0	0,3
B01	700	7,4	0,3	0,6	0,4	0,0	0,3	0,0	0,0	0,0	0,1
N01	703	9,7	9,5	5,7	1,4	0,0	0,9	45,4	7,3	4,6	11,0
N03	339	3,2	2,9	1,2	0,3	0,0	0,3	8,6	4,7	2,9	7,4
N22	554	8,1	6,7	3,2	0,4	0,2	0,4	40,8	6,3	7,9	9,2
N04	785	11,3	6,2	3,6	1,1	0,1	2,3	53,1	37,5	8,2	30,2
N05	420	24,3	1,9	0,7	0,5	0,0	0,0	26,9	68,1	3,1	0,7
N06	510	19,6	6,3	3,7	0,4	6,9	2,4	38,2	66,3	5,1	0,2
P02	750	20,5	2,3	0,3	0,1	0,0	0,3	1,6	99,7	3,9	1,2
P01	800	22,7	3,1	5,0	1,1	1,6	0,7	5,5	85,9	6,5	2,5
N11	650	12,3	3,4	2,2	0,8	0,2	1,1	28,3	26,2	3,7	7,1
GB1	666	4,7	4,8	3,2	1,7	0,0	0,3	14,9	9,0	2,4	3,5

Tab. 5: Cruise 269 RV „Walther Herwig III“, 26.11. - 17.12.2004:
Prevalences (%) of liver anomalies in dab (*Limanda limanda*) from the Baltic Sea and North Sea

Area	Length (cm)		N unt	Liver nodules (mm)			Green Livers	Nema-todes	Acantho-cephaleans
	min	max		> 2	> 5	>= 10			
B01	20	24	51	0,0	0,0	0,0	0,0	0,0	0,0
B01	25	40	51	0,0	0,0	0,0	0,0	0,0	0,0
N01	20	24	53	5,7	1,9	0,0	0,0	0,0	0,0
N01	25	40	50	14,0	6,0	6,0	0,0	0,0	0,0
N03	20	24	51	3,9	2,0	0,0	0,0	3,9	0,0
N03	25	40	38	10,5	5,3	2,6	0,0	15,8	0,0
N22	20	24	63	3,2	1,6	1,6	3,2	11,1	1,6
N22	25	40	61	19,7	9,8	4,9	1,6	36,1	1,6
N04	20	24	51	5,9	0,0	0,0	3,9	9,8	2,0
N04	25	40	70	11,4	7,1	4,3	2,9	22,9	1,4
N05	20	24	51	0,0	0,0	0,0	82,4	78,4	13,7
N05	25	40	7	0,0	0,0	0,0	100,0	85,7	28,6
N06	20	24	51	5,9	3,9	2,0	11,8	52,9	35,3
N06	25	40	21	14,3	9,5	9,5	4,8	71,4	47,6
P02	20	24	51	5,9	3,9	2,0	62,7	21,6	7,8
P02	25	40	34	0,0	0,0	0,0	76,5	29,4	2,9
P01	20	24	50	2,0	2,0	2,0	4,0	2,0	4,0
P01	25	40	51	3,9	0,0	0,0	5,9	5,9	3,9
N11	20	24	51	5,9	0,0	0,0	0,0	0,0	0,0
N11	25	40	51	11,8	3,9	2,0	2,0	2,0	0,0
GB1	20	24	52	1,9	0,0	0,0	1,9	0,0	0,0
GB1	25	40	7	0,0	0,0	0,0	0,0	0,0	0,0

Tab. 6: Cruise 269 RV „Walther Herwig III“, 26.11.- 17.12.2004:
Prevalences (%) of diseases and parasites of cod (*Gadus morhua*) in the Baltic Sea

Area	N unt	Ulc Ak/Hei	Skel Def	PBT	NetzAb	Locera	Clav	Cryp
B09	983	3,1	1,9	0,0	0,6	0,0	0,0	1,2
BEEP3	772	3,9	1,2	0,0	0,1	0,0	0,0	0,3
B05	538	0,9	0,6	0,0	0,6	0,0	0,0	0,2
B03	599	2,7	1,7	0,0	0,3	0,2	0,0	0,0
BEEP5	396	2,5	1,5	0,0	0,5	5,1	0,0	63,9
B11	898	9,4	2,1	0,0	0,3	0,3	0,0	21,5
B10	939	6,6	3,8	0,0	0,6	0,0	0,0	4,3
B01	62	1,6	1,6	0,0	0,0	9,7	0,0	69,4

Tab. 7: Cruise 269 RV „Walther Herwig III“, 26.11.- 17.12.2004:
Prevalences (%) of diseases and parasites of flounder (*Platichthys flesus*) in the Baltic Sea and North Sea

Area	N unt	Ly	Ulc Ak/Hei	Skel Def	Hyp Pig	Cryp
B09	26	38,5	7,7	3,8	0,0	26,9
BEEP3	159	30,2	11,9	0,0	0,6	27,0
B05	28	25,0	0,0	0,0	0,0	42,9
B03	106	33,0	5,7	0,0	0,0	66,0
BEEP5	84	21,4	2,4	0,0	0,0	50,0
B11	204	27,9	0,5	0,5	1,0	74,5
B10	413	32,2	1,9	1,0	0,5	67,1
B01	14	14,3	0,0	0,0	0,0	42,9
GB1	38	0,0	0,0	0,0	0,0	0,0

Tab. 8: Cruise 269 RV „Walther Herwig III“, 26.11.- 17.12.2004:
Prevalences (%) of diseases and parasites of haddock (*Melanogrammus aeglefinus*) in the North Sea

Area	N unt	Ulc Ak/Hei	Skel Def	NetzAb	Locera	Clav	Cryp
N05	607	0,0	3,8	0,0	22,2	3,0	0,2

Abbreviations:

N unt	: Number examined	PBT	: Pseudobranchial pseudotumour
Ly	: Lymphocystis	Netz Ab	: Net injury, healed
Ep Hyp/Pap	: Epidermal hyperplasia/papilloma	Steph	: <i>Stephanostomum baccatum</i>
Ulc Ak/Hei	: Skin ulcerationen, acute/healing	Acanth	: <i>Acanthochondria cornuta</i>
Flo Ak/Hei	: Fin rot/erosion, acute/healing	Lepe	: <i>Lepeophtheirus pectoralis</i>
KieHy	: Gill hyperplasia, x-cell disease	Locera	: <i>Lernaocera branchialis</i>
Hyp Pig	: Hyperpigmentation	Clav	: <i>Clavella adunca</i>
Skel Def	: Skeletal deformities	Cryp	: <i>Cryptocotyle lingua</i>