

24.05.2005

**Cruise Report  
Cruise 267 RV 'Walther Herwig III'  
03.09. - 24.09.2004**

Chief Scientist: Dr. Thomas Lang

## **1 Abstract**

As part of the regular activities of the Institute for Fishery Ecology of the Federal Research Centre for Fisheries on biological effects of contaminants in marine fish species, studies were conducted in 13 North Sea and 5 Baltic Sea area. In addition to the examination of North Sea dab (*Limanda limanda*), Baltic cod (*Gadus morhua*) and Baltic flounder (*Platichthys flesus*) for macroscopically visible external and internal diseases and parasites, numerous samples were taken for studies on histopathological alterations in liver and spleen, contaminant-induced changes in enzyme activities (EROD), inorganic and organic contaminants and their metabolites (organochlorines, Methyl-Hg, PAH metabolites), age composition, condition factors, and organosomatic indices. In addition, hydrographical measurements were carried out (water temperature, salinity, oxygen content). Fish samples were frozen for the detection of radioactive substances and for measurements of contaminants in the framework of the OSPAR JAMP/CEMP and HELCOM BMP monitoring programmes.

The results of the examination of dab for macroscopic lesions largely confirmed last year's findings. The decreasing trend in prevalence of lymphocystis in dab from the North Sea apparently continued. The value of 1.8 % in the German Bight northwest of Helgoland was the lowest ever recorded. Dab from the platform areas P01 (Danfield) and P02 (Ekofisk) were characterised by elevated prevalences of lymphocystis, skin ulcerations (only area P01), the parasite *Stephanostomum baccatum* and a green discolouration of the livers due to a parasitic infection of the bile ducts (only area P02). The decrease in the prevalence of liver tumours in North Sea dab has continued. The prevalences of acute skin ulcerations in Baltic Sea cod varied between 1.2 % and 2.6 % and were considerably low compared to previous years. More results will be available after subsequent lab analyses of samples.

## **2 Objectives of the Cruise**

1. Studies on biological effects of contaminants in fish
2. Studies on the occurrence of fish diseases and parasites
3. Sampling of fish for chemical analysis of radioactive substances, heavy metals and organic contaminants
4. Hydrographical measurements (salinity, temperature, oxygen)
5. Sampling of livers and other organs of fish for subsequent histological and biochemical studies
6. Sampling in the inner German Bight to detect changes related to the Elbe flood 2002.

## **3 Dates of the Cruise**

RV 'Walther Herwig III' left Bremerhaven on 03.09.2004, and studies were started in the morning of 04.09. in area GB1 in the German Bight. Work in 12 other North Sea areas followed. On 17.09., RV 'Walther Herwig III' sailed into the Baltic Sea, after passing through the Kiel Channel. The work was continued on 18.09 in area B12 in Mecklenburg Bight. After having finished the work in the Baltic Sea in 4 further areas on 22.09., the RV returned to the North Sea and, according to plan, the cruise ended in the morning of 24.09. in Bremerhaven.

The location of the sampling areas and the cruise dates are shown in Figure 1 and Table 1a and 1b.

In 18 sampling areas (Fig. 1), a total of 81 fishing hauls was performed (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 34 stations (see Table 1b).

## **4 Preliminary Results**

### **4.1 Dab (*Limanda limanda*)**

In total, 10,993 dab were examined for the occurrence of externally visible diseases and parasites and 1,307 dab for the occurrence of liver anomalies. Results are given in Table 4 and 5. The decreasing trend in prevalence of lymphocystis in dab from the North Sea has apparently continued since the previous year. The value of 1.8 % in the German Bight northwest of Helgoland was the lowest ever recorded. In accordance to previous cruises, generally high prevalences of skin hyperpigmentation (increased aggregation of green to black pigment spots) were noted in areas N11, N06 and N04. The prevalence in areas in the German Bight has increased compared to previous years. Dab from areas P01 and P02 showed elevated prevalences of lymphocystis, skin ulcerations (only in P01), *Stephanostomum baccatum* (parasite in the skin) and green discolouration of the livers (only in area P02).

Liver tumours in dab  $\geq 25$  cm total length were most prevalent off the British coast (areas N22 and N07) and in the inner German Bight (area GB1). However, prevalences were low in general and did no longer show distinct spatial patterns. Dab in areas N06 and N07 off the Scottish coast again showed a pronounced liver parasitism with nematodes and acanthocephalans.

A variety of samples were taken for subsequent chemical analysis of contaminants as well as for biological effects measurements. More comprehensive results will be available after all samples obtained have been processed.

### **4.2 Cod (*Gadus morhua*)**

3,676 cod from the Baltic Sea were examined for the occurrence of externally visible diseases and parasites (see Table 6). The prevalences of acute/healing skin ulcerations were in the range of 1.2 % to 3.6 % and were considerably low compared to previous years.

### **4.3 Flounder (*Platichthys flesus*)**

525 Baltic flounder examined for externally visible diseases (Tab. 7). The prevalence of lymphocystis was high but in the normal range and the prevalence of acute/healing skin ulcerations was comparatively low (0.0 % to 3.0 %).

## **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.

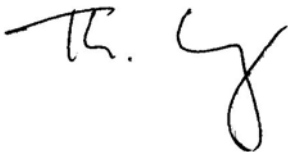
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## 7 Acknowledgements

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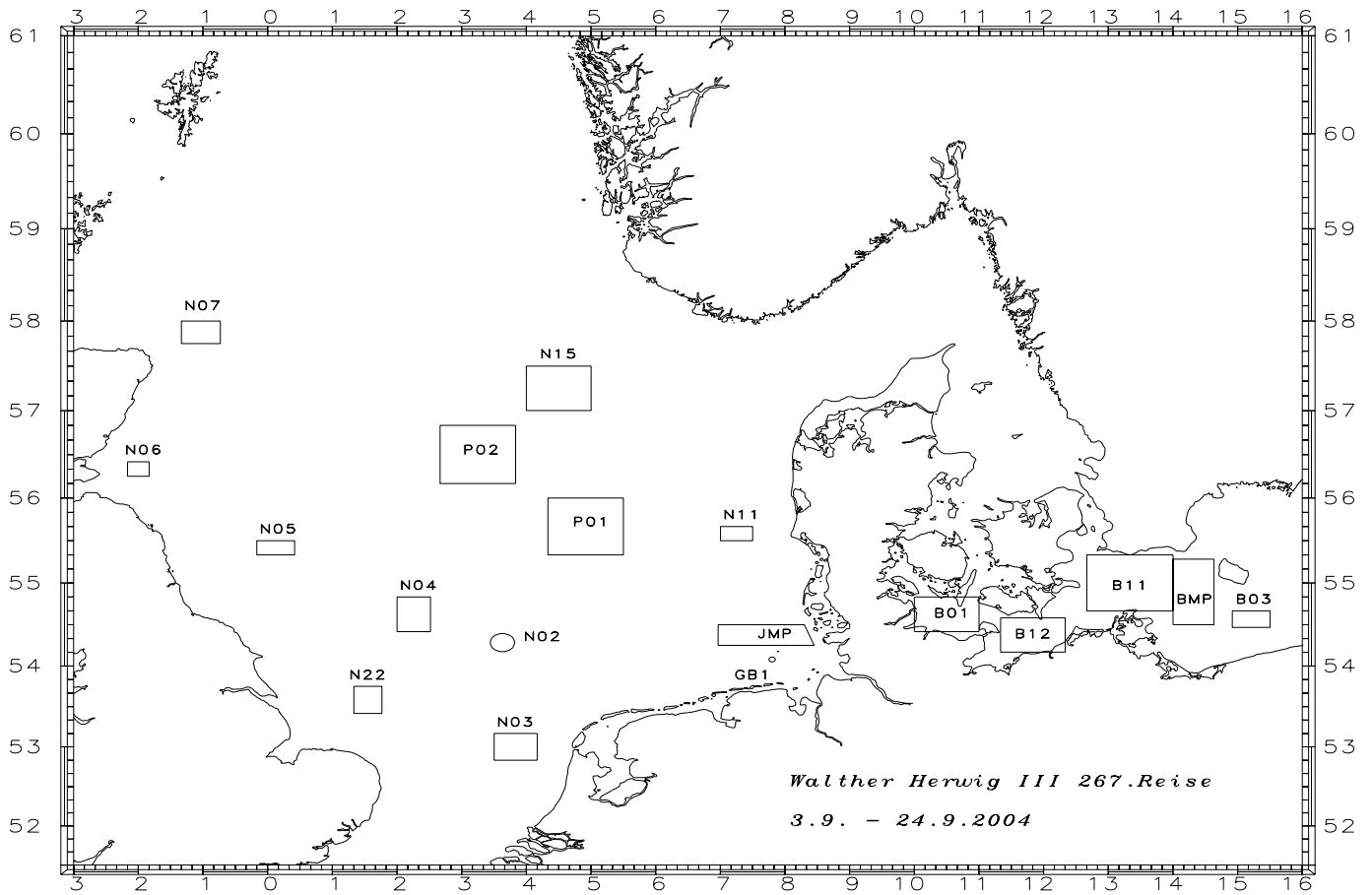


Dr. Thomas Lang  
(Scientist in charge)

## Annex

7 Tables  
1 Figure

**Fig. 1:** Cruise 267 RV „Walther Herwig III“, 03.09.- 24.09.2004:  
Location of sampling sites



**Tab. 1a:** *Cruise 267 RV „Walther Herwig III“, 03.09. - 24.09.2004:*  
Geographical coordinates of trawling sites

DATE	STATION	Area	ICES- RECTANGLE	GEO LAT	GEO LONG
<b>NORTH SEA</b>					
04.09.04	001	GB1	37F7	54°04'34N	07°52'90E
04.09.04	002	GB1	37F7	54°06'78N	07°46'31E
04.09.04	003	GB1	37F7	54°04'60N	07°53'07E
05.09.04	004	N03	35F3	53°07'78N	03°54'73E
05.09.04	005	N03	35F3	53°03'22N	03°51'32E
05.09.04	006	N03	34F3	52°59'31N	03°50'27E
05.09.04	007	N03	34F3	52°55'03N	03°46'40E
05.09.04	008	N03	34F3	52°50'54N	03°38'70E
06.09.04	009	N22	36F1	53°37'03N	01°38'76E
06.09.04	010	N22	36F1	53°38'47N	01°44'47E
06.09.04	011	N22	36F1	53°42'10N	01°38'40E
06.09.04	012	N22	36F1	53°38'03N	01°45'01E
06.09.04	013	N22	36F1	53°43'07N	01°39'19E
07.09.04	014	N02	37F3	54°12'05N	03°32'18E
07.09.04	015	N02	37F3	54°14'71N	03°34'39E
07.09.04	016	N02	37F3	54°10'62N	03°30'68E
07.09.04	017	N02	37F3	54°15'21N	03°28'77E
07.09.04	018	N02	37F3	54°16'83N	03°21'75E
08.09.04	019	N04	38F2	54°43'95N	02°24'97E
08.09.04	020	N04	38F2	54°45'13N	02°14'55E
08.09.04	021	N04	38F2	54°49'15N	02°19'21E
08.09.04	022	N04	38F2	54°48'00N	02°09'10E
08.09.04	023	N04	38F2	54°46'22N	02°01'42E
09.09.04	024	N05	39E9	55°20'68N	00°01'42W
09.09.04	025	N05	?	° N	° W
09.09.04	026	N05	39E9	55°21'64N	00°12'71W
09.09.04	027	N05	39E9	55°24'87N	00°13'63W
09.09.04	028	N05	39E9	55°22'91N	00°24'02W
10.09.04	029	N06	41E8	56°17'58N	01°57'15W
10.09.04	030	N06	41E7	56°18'67N	02°04'35W
10.09.04	031	N06	41E7	56°23'28N	02°08'81W
10.09.04	032	N06	41E7	56°19'15N	02°08'46W
10.09.04	033	N06	41E7	56°22'82N	02°07'95W
11.09.04	034	N07	44E8	57°46'35N	01°18'55W
11.09.04	035	N07	44E8	57°53'79N	01°17'61W
11.09.04	036	N07	44E8	57°56'39N	01°13'26W
11.09.04	037	N07	44E8	57°48'92N	01°04'59W
12.09.04	038	N15	43F4	57°14'74N	04°01'66E
12.09.04	039	N15	43F4	57°15'57N	04°14'34E
12.09.04	040	N15	43F4	57°14'28N	04°30'01E
12.09.04	041	N15	43F4	57°10'68N	04°35'79E

**Tab. 1a:** (Cont.)

DATE	STATION	AREA	ICES-RECTANGLE	GEO LAT	GEO LONG
13.09.04	042	P02	42F3	56°49'90N	03°49'02E
13.09.04	043	P02	42F3	56°47'07N	03°41'98E
13.09.04	044	P02	42F3	56°40'28N	03°11'96E
13.09.04	045	P02	42F3	56°31'22N	03°18'90E
14.09.04	046	P01	40F4	55°47'15N	04°47'63E
14.09.04	047	P01	40F4	55°43'24N	04°51'58E
14.09.04	048	P01	40F4	55°40'08N	04°55'05E
14.09.04	049	P01	40F5	55°43'71N	05°10'41E
15.09.04	050	N11	40F7	55°30'77N	07°07'95E
15.09.04	051	N11	40F7	55°35'67N	07°05'10E
15.09.04	052	N11	40F7	55°31'66N	07°09'21E
16.09.04	053	JMP	37F7	54°16'06N	07°30'20E
16.09.04	054	JMP	37F7	54°20'54N	07°28'34E
16.09.04	055	JMP	37F7	54°23'78N	07°35'09E
16.09.04	056	JMP	37F7	54°20'43N	07°29'15E
16.09.04	057	JMP	37F7	54°15'41N	07°27'42E
<b>BALTIC SEA</b>					
18.09.04	058	B12	37G1	54°13'41N	11°41'25E
18.09.04	059	B12	37G1	54°17'35N	11°45'53E
18.09.04	060	B12	37G1	54°18'14N	11°27'22E
18.09.04	061	B12	37G1	54°22'46N	11°22'65E
18.09.04	062	B12	37G1	54°27'18N	11°22'26E
19.09.04	063	BMP	38G4	54°49'61N	14°06'37E
19.09.04	064	BMP	38G3	54°45'34N	13°59'52E
19.09.04	065	BMP	38G4	54°51'65N	14°01'59E
19.09.04	066	BMP	38G4	54°47'14N	14°01'04E
19.09.04	067	BMP	38G4	54°49'88N	14°06'04E
20.09.04	068	B03	38G4	54°36'60N	14°58'39E
20.09.04	069	B03	38G5	54°39'48N	15°05'92E
20.09.04	070	B03	38G5	54°38'44N	15°14'97E
20.09.04	071	B03	38G5	54°38'55N	15°22'02E
20.09.04	072	B03	38G5	54°35'79N	15°14'54E
20.09.04	073	B03	38G5	54°33'84N	15°05'82E
21.09.04	074	B11	38G3	54°47'85N	13°05'92E
21.09.04	075	B11	38G3	54°46'23N	13°14'10E
21.09.04	076	B11	38G3	54°44'57N	13°14'42E
21.09.04	077	B11	38G3	54°44'19N	13°15'19E
22.09.04	078	B01	37G0	54°29'69N	10°41'18E
22.09.04	079	B01	38G0	54°31'92N	10°36'42E
22.09.04	080	B01	38G0	54°32'08N	10°32'94E
22.09.04	081	B01	38G0	54°33'28N	10°27'04E

**Tab. 1b:** *Cruise 267 RV „Walther Herwig III“, 03.09. - 24.09.2004:*  
Geographical coordinates of hydrography stations

DATE	STATION	AREA	ICES-RECTANGLE	GEO LAT	GEO LONG
<b>NORTH SEA</b>					
04.09.04	001	GB1	37F7	54°04'36N	07°54'35E
04.09.04	002	GB1	37F7	54°06'71N	07°46'47E
05.09.04	003	N03	34F3	52°59'55N	03°49'15E
05.09.04	004	N03	34F3	52°54'58N	03°48'62E
05.09.04	005	N03	34F3	52°49'89N	03°43'49E
06.09.04	006	N22	36F1	53°41'75N	01°39'47E
06.09.04	007	N22	36F1	53°41'19N	01°39'97E
07.09.04	008	N02	37F3	54°10'22N	03°31'70E
07.09.04	009	N02	37F3	54°16'64N	03°22'29E
08.09.04	010	N04	38F2	54°47'75N	02°21'07E
08.09.04	011	N04	38F2	54°46'98N	02°01'51E
09.09.04	012	N05	39F0	55°20'68N	00°15'20W
09.09.04	013	N05	39F0	55°20'87N	00°17'84W
10.09.04	014	N06	41F2	56°22'76N	02°01'00W
10.09.04	015	N06	41F2	56°23'60N	02°08'15W
11.09.04	016	N07	44F1	57°57'31N	01°13'07W
11.09.04	017	N07	44F0	57°52'73N	00°58'93W
12.09.04	018	N15	43F4	57°14'48N	04°23'06E
12.09.04	019	N15	43F4	57°07'72N	04°42'54E
13.09.04	020	P02	42F3	56°45'36N	03°50'32E
13.09.04	021	P02	42F3	56°36'10N	03°13'81E
13.09.04	022	P02	41F3	56°28'14N	03°24'45E
14.09.04	023	P01	40F5	55°44'52N	05°00'07E
14.09.04	024	P01	40F5	55°45'22N	05°18'06E
15.09.04	025	N11	40F7	55°32'98N	07°12'22E
15.09.04	026	N11	40F7	55°36'00N	07°06'50E
16.09.04	027	JMP	37F7	54°22'90N	07°35'76E
16.09.04	028	JMP	37F7	54°16'00N	07°30'54E
<b>BALTIC SEA</b>					
18.09.04	029	B12	37G1	54°15'58N	11°38'33E
18.09.04	030	B12	37G1	54°26'65N	11°24'60E
19.09.04	031	BMP	38G4	54°49'85N	14°01'19E
19.09.04	032	BMP	38G4	54°50'24N	14°07'02E
20.09.04	033	B03	38G5	54°38'19N	15°13'63E
20.09.04	034	B03	38G5	54°36'08N	15°15'94E

**Tab. 2:** *Cruise 267 RV „Walther Herwig III“, 03.09. - 24.09.2004:*  
 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
GB1 n	-	9.771	-	71	189	-	513	47	82
kg	-	360,0	-	1,0	2,0	-	42,0	5,0	26,0
N03 n	-	24	-	-	1	1.146	348	26	2
kg	-	3,0	-	-	< 0,5	180,0	19,0	3,0	1,0
N22 n	1	14	-	4	-	1.303	212	5	-
kg	1,0	5,0	-	< 0,5	-	245,0	16,0	1,0	-
N02 n	3	47	-	18.868	61.059	50	613	24	-
kg	1,0	9,0	-	396,0	785,0	10,0	41,0	5,0	-
N04 n	-	1	-	456	-	2.379	783	6	-
kg	-	> 0,5	-	64,0	-	187,0	52,0	2,0	-
N05 n	1	238	516	38	-	1	83	6	-
kg	2,0	33,0	178,0	5,0	-	< 0,5	6,0	1,0	-
N06 n	1	1.266	938	2	-	2.324	337	-	-
kg	> 0,5	25,0	35,0	< 0,5	-	770,0	25,0	-	-
N07 n	2	1.457	915	3.138	-	55	196	35	-
kg	> 0,5	159,0	251,0	305,0	-	16,0	15,0	6,0	-
N15 n	6	194	802	38	-	34	666	3	-
kg	1,0	33,0	372,0	5,0	-	8,0	39,0	1,0	-
P02 n	8	550	162	21	-	55	630	1	-
kg	2,0	93,0	60,0	3,0	-	15,0	44,0	> 0,5	-
P01 n	2	2	-	21.392	46.373	7	673	7	-
kg	1,0	> 0,5	-	588,0	529,0	2,0	74,0	2,0	-
N11 n	2	332	-	7.908	6.704	-	4947	161	-
kg	> 0,5	15,0	-	95,0	72,0	-	339,0	26,0	-
JMP n	-	85	-	6.788	2.130	5	356	15	4
kg	-	4,0	-	63,0	13,0	1,0	28,0	2,0	1,0
B12 n	335	701	7	102	1.269	-	271	5	26
kg	58,0	115,0	2,0	4,0	13,0	-	31,0	1,0	4,0
BMP n	175	78	-	68	678	-	-	13	100
kg	53,0	26,0	-	3,0	7,0	-	-	4,0	38,0
B03 n	109	1	-	14	10	-	-	-	-
kg	42,0	> 0,5	-	1,0	< 0,5	-	-	-	-
B11 n	482	102	1	24	183	1	40	12	8
kg	153,0	20,0	> 0,5	2,0	2,0	< 0,5	5,0	2,0	2,0
B01 n	50	41	-	60	840	-	1365	-	8
kg	24,0	3,0	-	2,0	9,0	-	158,0	-	4,0



**Tab. 3a:** *Cruise 267 RV „Walther Herwig III“, 03.09. - 24.09.2004:*  
 Water depth, temperature (T), salinity (S) und O<sub>2</sub> saturation, North Sea

DATE	STATION	AREA	DEPTH (m)	T (°C)	S (PSU)	O <sub>2</sub> -SATURATION
04.09.2004	001	GB1	2	18,34	32,88	95,63
			38	17,77	32,88	91,78
	002		2	18,53	33,11	97,16
			39	18,09	33,11	92,32
05.09.2004	003	N03	2	17,88	34,77	95,76
			30	17,87	34,77	95,90
	004		2	18,06	34,92	84,02
			30	18,02	34,92	97,11
06.09.2004	005	N22	2	16,02	34,44	97,71
			23	15,79	34,61	98,75
	006		2	15,63	34,56	98,41
			23	15,62	34,56	98,23
07.09.2004	007	N02	2	16,85	34,86	98,48
			39	15,95	34,86	88,31
	008		2	16,62	34,88	98,99
			47	15,41	34,86	91,18
08.09.2004	009	N04	2	16,51	34,88	96,48
			20	16,50	34,88	99,29
	010		2	16,60	34,84	97,56
			25	16,33	34,84	92,18
09.09.2004	011	N05	2	16,21	34,89	100,42
			67	8,85	34,91	74,81
	012		2	16,34	35,09	101,06
			69	8,87	34,90	74,35
10.09.2004	013	N06	2	14,72	34,37	101,40
			51	13,16	34,72	87,59
	014		2	14,76	34,02	102,03
			55	13,05	34,70	81,28
11.09.2004	015	N07	2	13,60	35,13	102,58
			105	10,22	35,27	81,01
	016		2	13,67	35,13	100,99
			94	10,15	35,26	80,94
12.09.2004	017	N15	2	15,54	34,57	106,46
			62	8,24	35,18	80,58
	018		2	15,57	34,19	99,79
			59	8,23	35,19	81,37
13.09.2004	019	P02	2	15,66	34,88	100,14
			54	8,49	35,01	87,71
	020		2	16,08	34,76	97,13
			68	7,81	35,09	73,29

**Tab. 3a:** (Cont.)

DATE	STATION	AREA	DEPTH (m)	T (°C)	S (PSU)	O <sub>2</sub> SATURATION
14.09.2004	021	P01	2	15,79	35,03	96,21
			35	11,22	34,87	79,92
	022		2	15,92	34,77	96,76
			52	10,65	34,74	68,64
15.09.2004	023	N11	2	16,86	33,98	94,73
	004		30	16,86	33,99	94,89
			2	16,97	34,01	95,47
			27	16,97	34,07	96,03
16.09.2004	025	JMP	2	16,88	33,26	97,41
			28	16,90	33,34	96,15
	026		2	17,75	33,15	100,61
			40	17,31	33,41	98,22

**Tab. 3b:** *Cruise 267 RV „Walther Herwig III“, 03.09. - 24.09.2004:*  
Water depth, temperature (T), salinity (S) und O<sub>2</sub> saturation, Baltic Sea

DATE	STATION	AREA	DEPTH (m)	T (°C)	S (PSU)	O <sub>2</sub> SATURATION
18.09.2004	027	B12	2	15,80	13,01	96,96
			22	15,68	17,21	88,75
	028		2	15,96	14,32	96,45
			18	14,86	20,52	58,77
19.09.2004	029	BMP	2	14,86	7,68	95,32
			37	13,59	12,28	52,88
	030		2	14,81	7,72	90,08
			33	11,13	10,20	64,19
20.09.2004	031	B03	2	16,24	7,46	102,06
			59	7,31	14,44	48,99
	032		2	16,02	7,42	97,32
			51	6,32	11,77	37,90

**Tab. 4:** Cruise 267 RV „Walther Herwig III“, 03.09. - 24.09.2004:  
Prevalences (%) of externally visible diseases and parasites of dab (*Limanda limanda*) in the North Sea and Baltic Sea

Area	N unt	Ly	Ep Hyp/Pap	Ulc Ak/Hei	Flo Ak/Hei	KieHy	Skel Def	Hyp Pig	Steph	Acanth	Lepe
GB1	622	1,1	3,2	1,4	0,8	0,2	0,3	7,2	2,7	2,6	7,9
N03	841	1,4	0,4	0,7	0,8	0,0	2,1	1,3	0,8	1,9	3,4
N22	844	3,3	2,8	1,9	1,3	0,0	1,3	25,6	3,4	4,4	5,9
N02	937	5,9	2,2	1,3	0,9	1,2	0,4	17,5	54,1	2,7	6,6
N04	878	5,9	2,5	5,2	1,1	0,3	0,6	33,0	30,4	3,2	18,2
N05	520	16,3	2,3	1,2	0,0	0,4	0,4	23,5	65,8	2,7	0,4
N06	768	16,5	3,4	7,7	0,8	3,0	12,0	34,6	58,7	2,9	0,5
N07	409	17,1	3,4	1,2	0,0	1,2	2,7	21,3	55,5	3,2	2,2
N15	548	17,0	0,9	1,8	0,5	2,7	1,3	1,5	97,6	2,0	0,7
P02	932	21,6	1,1	1,5	0,3	1,5	0,2	1,7	99,2	1,7	0,0
P01	745	23,4	2,4	13,3	1,9	1,6	0,7	6,3	83,5	3,1	2,0
N11	791	4,9	2,8	7,7	1,6	0,0	0,5	35,3	14,4	3,5	8,5
JMP	912	1,8	3,8	5,3	1,3	0,0	0,8	27,4	9,8	4,2	12,2
B12	500	2,8	0,0	0,4	0,8	0,0	0,2	0,4	0,0	0,4	0,0
B11	161	0,0	0,6	0,6	0,0	0,0	0,6	0,0	0,0	0,0	0,0
B01	585	3,2	0,3	0,9	1,9	0,0	0,2	0,0	0,5	0,0	0,3

**Tab. 5:** Cruise 267 RV „Walther Herwig III“, 03.09. - 24.09.2004:  
Prevalences (%) of liver anomalies in dab (*Limanda limanda*) from the North Sea and Baltic Sea

Area	Length (cm)		N unt	Liver nodules (mm)			Green Livers	Nema-todes	Acantho-cephaleans
	min	max		> 2	> 5	>= 10			
GB1	20	24	55	0,0	0,0	0,0	0,0	0,0	0,0
GB1	25	40	19	10,5	0,0	0,0	0,0	5,3	0,0
N03	20	24	53	0,0	0,0	0,0	0,0	1,9	0,0
N03	25	40	35	0,0	0,0	0,0	2,9	0,0	0,0
N22	20	24	56	5,4	3,6	1,8	1,8	8,9	3,6
N22	25	40	51	17,6	5,9	2,0	2,0	29,4	0,0
N02	20	24	52	3,8	3,8	3,8	0,0	7,7	0,0
N02	25	40	32	9,4	3,1	3,1	0,0	21,9	0,0
N04	20	24	61	6,6	3,3	1,6	0,0	8,2	0,0
N04	25	40	35	2,9	2,9	0,0	0,0	2,9	0,0
N05	20	24	49	2,0	0,0	0,0	75,5	67,3	30,6
N05	25	40	8	0,0	0,0	0,0	87,5	75,0	12,5
N06	20	24	54	1,9	1,9	0,0	3,7	51,9	37,0
N06	25	40	35	0,0	0,0	0,0	5,7	82,9	37,1
N07	20	24	50	0,0	0,0	0,0	12,0	58,0	36,0
N07	25	40	51	11,8	5,9	3,9	3,9	82,4	25,5

**Tab. 5:** (Cont.)

GEBIET	Length (cm)		N unt	Liver nodules (mm)			Green Livers	Nema- todes	Acantho- cephaleans
	min	max		> 2	> 5	>= 10			
P02	25	40	47	6,4	6,4	2,1	44,7	31,9	2,1
P01	20	24	50	2,0	0,0	0,0	2,0	12,0	0,0
P01	25	40	50	0,0	0,0	0,0	0,0	0,0	0,0
N11	20	24	51	5,9	3,9	3,9	0,0	0,0	0,0
N11	25	40	51	7,8	3,9	0,0	0,0	2,0	0,0
JMP	20	24	68	2,9	1,5	0,0	0,0	0,0	0,0
JMP	25	40	42	9,5	9,5	9,5	0,0	9,5	0,0
B01	20	24	61	0,0	0,0	0,0	1,6	0,0	0,0
B01	25	40	34	0,0	0,0	0,0	0,0	0,0	0,0

**Tab. 6:** *Cruise 267 RV „Walther Herwig III“, 03.09.- 24.09.2004:*  
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
B12	1194	1,6	0,8	0,0	0,0	2,8	0,0	51,8
BMP	502	2,6	1,6	0,0	0,0	0,8	0,0	15,3
B03	652	1,2	2,5	0,0	0,0	0,0	0,0	0,6
B11	1131	1,5	2,1	0,0	0,0	0,3	0,0	8,8
B01	197	3,6	1,0	0,0	0,0	4,1	0,0	65,5

**Tab. 7:** *Cruise 267 FRV „Walther Herwig III“, 03.09.- 24.09.2004:*  
Prevalences (%) of diseases and parasites of flounder (*Platichthys flesus*) in the Baltic Sea

GEBIET	N unt	Ly	Ulc Ak/Hei	Skel Def	Hyp Pig	Cryp
B12	86	7,0	0,0	0,0	2,3	32,6
BMP	392	31,6	1,5	0,3	23	66,1
B03	1	0,0	0,0	0,0	0,0	100,0
B11	13	53,8	0,0	0,0	0,0	53,8
B01	33	24,2	3,0	3,0	3,0	51,5

**Abbreviations:**

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

# CRUISE SUMMARY REPORT

FOR COLLATING CENTRE USE

Centre: DOD Ref. No.:

Is data exchange restricted  Yes  In part  No

**SHIP** enter the full name and international radio call sign of the ship from which the data were collected, and indicate the type of ship, for example, research ship; ship of opportunity, naval survey vessel; etc.

Name: Walther Herwig IIICall Sign: DBFRType of ship: Research VesselCRUISE NO. / NAME 267

enter the unique number, name or acronym assigned to the cruise (or cruise leg, if appropriate).

CRUISE PERIOD start 03/09/2004 to 24/09/2004 end  
(set sail) day/ month/ year day/ month/ year (return to port)

PORT OF DEPARTURE (enter name and country) Bremerhaven, GermanyPORT OF RETURN (enter name and country) Bremerhaven, Germany

**RESPONSIBLE LABORATORY** enter name and address of the laboratory responsible for coordinating the scientific planning of the cruise

Name: BFAFi, IFÖ, ASt CuxhavenAddress: Deichstr. 12, 27472 CuxhavenCountry: Germany

**CHIEF SCIENTIST(S)** enter name and laboratory of the person(s) in charge of the scientific work (chief of mission) during the cruise.

Dr. T. Lang, BFAFi, IFÖ, ASt Cuxhaven

**OBJECTIVES AND BRIEF NARRATIVE OF CRUISE** enter sufficient information about the purpose and nature of the cruise so as to provide the context in which the report data were collected.

Investigations on biological effects of contaminants, including fish diseases and parasites

**PROJECT (IF APPLICABLE)** if the cruise is designated as part of a larger scale cooperative project (or expedition), then enter the name of the project, and of organisation responsible for co-ordinating the project.

Project name: .....

Coordinating body: .....



**SUMMARY OF MEASUREMENTS AND SAMPLES TAKEN**

Except for the data already described on page 2 under 'Moored, Bottom Mounted Gear and Drifting Systems', this section should include a summary of all data collected on the cruise, whether they be measurements (e.g. temperature, salinity values) or samples (e.g. cores, net hauls).

Separate entries should be made for each distinct and coherent set of measurements or samples. Different modes of data collection (e.g. vertical profiles as opposed to underway measurements) should be clearly distinguished, as should measurements/sampling techniques that imply distinctly different accuracy's or spatial/temporal resolutions. Thus, for example, separate entries would be created for i) BT drops, ii) water bottle stations, iii) CTD casts, iv) towed CTD, v) towed undulating CTD profiler, vi) surface water intake measurements, etc.

Each data set entry should start on a new line – it's description may extend over several lines if necessary.

**NO, UNITS** : for each data set, enter the estimated amount of data collected expressed in terms of the number of 'stations'; miles' of track; 'days' of recording; 'cores' taken; net 'hauls'; balloon 'ascents'; or whatever unit is most appropriate to the data. The amount should be entered under 'NO' and the counting unit should be identified in plain text under 'UNITS'.

PI see page 2	NO see above	UNITS see above	DATA TYPE Enter code(s) from list on cover page	DESCRIPTION Identify, as appropriate, the nature of the data and of the instrumentation/sampling gear and list the parameters measured. Include any supplementary information that may be appropriate, e. g. vertical or horizontal profiles, depth horizons, continuous recording or discrete samples, etc. For samples taken for later analysis on shore, an indication should be given of the type of analysis planned, i.e. the purpose for which the samples were taken.
A	81	hauls	B19	Investigations on biological effects of contaminants, incl. fish diseases/parasites
A	81	hauls	P13	"
A	81	hauls	B72	"
A	34	stations	H71	Hydrographic measurements, surface and bottom samples
A	34	stations	H09	"
A	34	stations	H10	"
B	20	samples	P13	Organochlorines in fish

<b>TRACK CHART:</b> You are strongly encouraged to submit, with the completed report, an annotated track chart illustrating the route followed and the points where measurements were taken.	Insert a tick(✓) in this box if a track chart is supplied	<input style="width: 100%; height: 100%;" type="checkbox"/>
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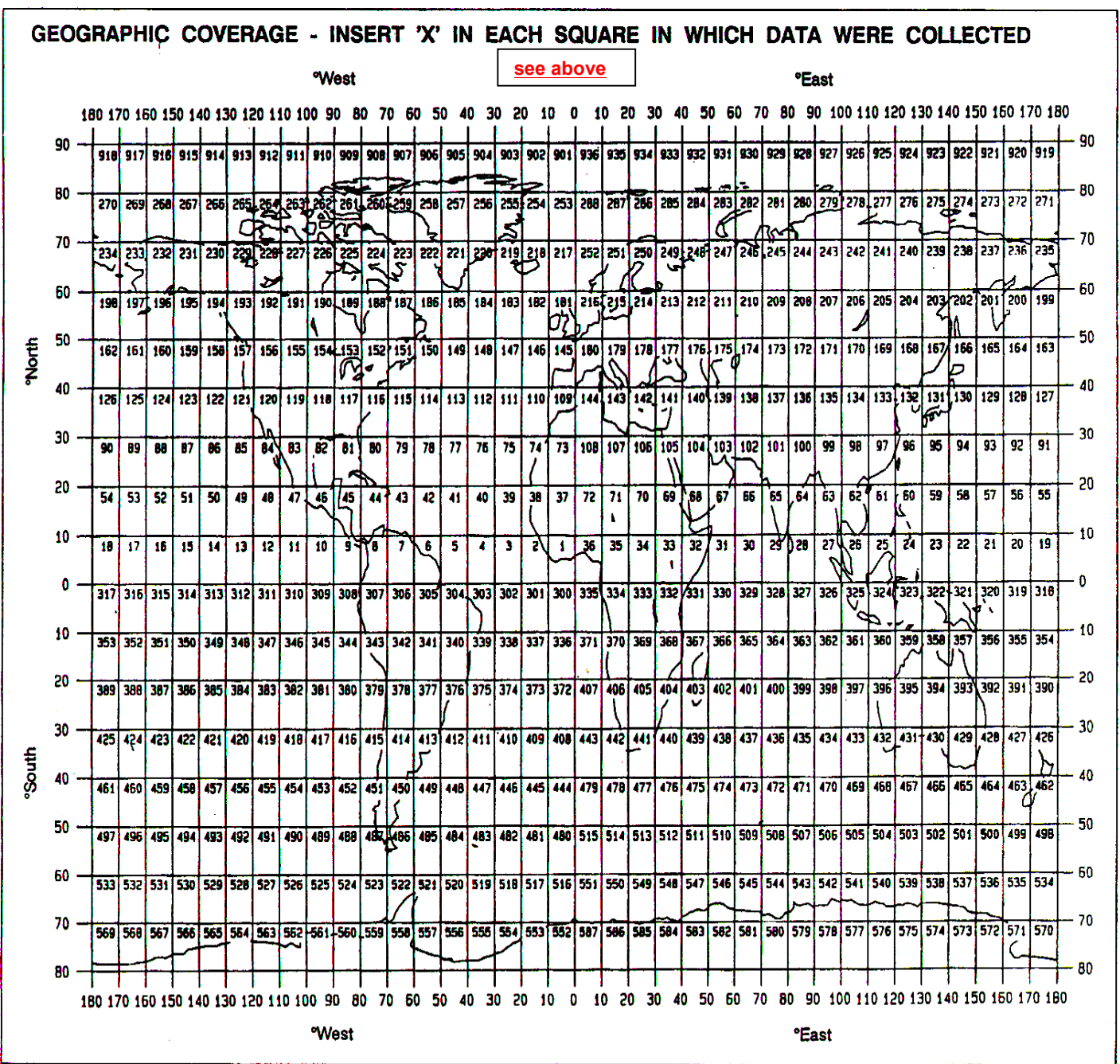
**GENERAL OCEAN AREA(S):** Enter the names of the oceans and/or seas in which data were collected during the cruise – please use commonly recognised names (see, for example, International Hydrographic Bureau Special Publication No. 23, 'Limits of Oceans and Seas').

**North Sea, Baltic Sea**

**SPECIFIC AREAS:** If the cruise activities were concentrated in a specific area(s) of an ocean or sea, then enter a description of the area(s). Such descriptions may include references to local geographic areas, to sea floor features, or to geographic coordinates.

**Please insert here the number of each square in which data were collected from the below given chart**

215,216



**THANK YOU FOR YOUR COOPERATION**  
 Please send your completed report without delay to the collating centre indicated on the cover page