

**R/V Dana**

**Cruise 01/2011**

**"IBTS 1Q 2011"**



Vessel: R/V DANA  
Cruise number: 01/11

Cruise dates (planned): 27/1 – 13/2 2011  
Cruise name: IBTS 1Q 2011

<b>Port of departure:</b>	Hirtshals	<b>Date:</b>	27 Jan
<b>Port of return:</b>	Hirtshals	<b>Date:</b>	13 Feb
<b>Other ports:</b>	Esbjerg	<b>Date and justification:</b>	30 Jan Emergency exchange of one crew member 4 Feb Scheduled exchange of scientific staff and crew

## Participants

<b>Leg 1: Hirtshals - Esbjerg</b>		
<b>Name</b>	<b>Institute</b>	<b>Function and main tasks</b>
Kai Wieland	DTU Aqua, Monitoring	Cruise leader, Fish lab
Helle Rasmussen	DTU Aqua, Monitoring	Technician, Fish lab
Gert Holst	DTU Aqua, Monitoring	Technician, Herring larvae
Tom Svoldgaard	DTU Aqua, Monitoring	Technician, Fish lab
Maria Jarnum	DTU Aqua, Monitoring	Technician, Fish lab
Reinhardt Jensen	DTU Aqua, Monitoring	Technician, Fish lab
Thyge Dyrnesli	DTU Aqua, Marine Services	Technician, CTD, Maintenance

<b>Leg 2: Esbjerg - Hirtshals</b>		
<b>Name</b>	<b>Institute</b>	<b>Function and main tasks</b>
Helle Rasmussen	DTU Aqua, Monitoring	Cruise leader, Fish lab
Aage Thaarup	DTU Aqua, Monitoring	Technician, Fish lab
Gert Holst	DTU Aqua, Monitoring	Technician, Herring larvae
Tom Svoldgaard	DTU Aqua, Monitoring	Technician, Fish lab
Lise Sindahl	DTU Aqua, Monitoring	Technician, Fish lab
Jan Jensen	DTU Aqua, Monitoring	Technician, Fish lab
Thyge Dyrnesli	DTU Aqua, Marine Services	Technician, CTD, Maintenance
Frank Knudsen	DTU Aqua, Marine Services	Technician, CTD, Maintenance

## Objectives

The survey is part of the 1<sup>st</sup> quarter International Bottom Trawl Survey (IBTS) in the North Sea, which is coordinated by the ICES International Bottom Trawl Survey Working Group and has been conducted with standard fishing gear in the 1<sup>st</sup> quarter since 1983.

The IBTS aims to provide ICES assessment and science groups with consistent and standardised data for examining spatial and temporal changes in (a) the distribution and relative abundance of fish and fish assemblages; and (b) of the biological parameters of

commercial fish species for stock assessment purposes. The main objectives in the 1<sup>st</sup> quarter IBTS are to:

- To determine the distribution and relative abundance of pre-recruits of the main commercial species (cod, haddock, whiting, Norway pout, saithe, herring, sprat, and mackerel) with a view of deriving recruitment indices;
- To monitor changes in the stocks of commercial fish species independently of commercial fisheries data;
- To monitor the distribution and relative abundance of all fish species and selected invertebrates;
- To collect data for the determination of biological parameters for selected species;
- To collect hydrographical and environmental information;
- To determine the distribution of in particular herring and sprat larvae;

The area to be covered by Denmark with RV Dana in the 1<sup>st</sup> quarter 2011 was allocated during the most recent IBTS Working Group meeting. Technical details are described in the current version of the survey manual (ICES 2010: Addendum 1, IBTS Manual – Revision VIII. <http://datras.ices.dk/Documents/Manuals/>).

## **Itinerary**

R/V Dana left Hirtshals on Wednesday 27 January at 17:15 local time and began with the scientific work the next morning. The scientific program was interrupted for an emergency exchange of one crew member on 30 January in the early evening. The vessel stayed again in the port of Esbjerg on 4 February from 12:00 to 16:00 for the scheduled exchange of scientific staff and crew. Poor weather conditions caused a delay in the sampling the MIK during some nights on the 1<sup>st</sup> cruise leg and prevented any scientific work during the first night and day of the 2<sup>nd</sup> cruise leg. R/V Dana returned to Hirtshals on Sunday 13 February at 7:30 local time after all the planned work had been accomplished.

## **Achievements**

The working area consisted of 40 ICES statistical rectangles located in IBTS roundfish areas 4, 6 and 7. The following activities were carried out (Fig. 1):

40 valid trawl hauls with GOV 36/47 (chalut á Grande Overture Verticale), 37 hauls with standard groundgear A and 3 hauls with rockhopper groundgear B (see IBTS Manual for specifications)

40 CTD profiles

80 hauls with Methot Isaac Kidd (MIK) net (see IBTS manual for specification) and additional 2 stations for flowmeter calibration.

## **Results**

Sorting and analyses of the trawl catches were conducted as specified according to the IBTS manual. About 70 different species of fish and selected invertebrates were found (Tab. 1). Length measurements were made for all of the listed species. Sharks, skates and rays and the listed shellfish species were measured separately by sex (length com-

position and weight). Single fish data (length, weight, sex and maturity) and otoliths were collected for the main commercial species (cod, haddock, whiting, Norway pout, saithe, herring, sprat and mackerel) as well as for plaice, turbot and lemon sole (Tab. 2). The preliminary abundance indices for the main commercial species (Tab. 3) were reported to the coordinator of the 1<sup>st</sup> quarter IBTS.

As usual, no sorting of the MIK samples were performed on board. The samples were conserved in 96% ethanol for analysis in laboratory and hence no preliminary results on the catches of clupeid larvae have been reported to the coordinator of the 1<sup>st</sup> quarter IBTS.

## **Others**

A cruise summary report has been delivered online to

[http://seadata.bsh.de/csr/online/V1\\_index.html](http://seadata.bsh.de/csr/online/V1_index.html).

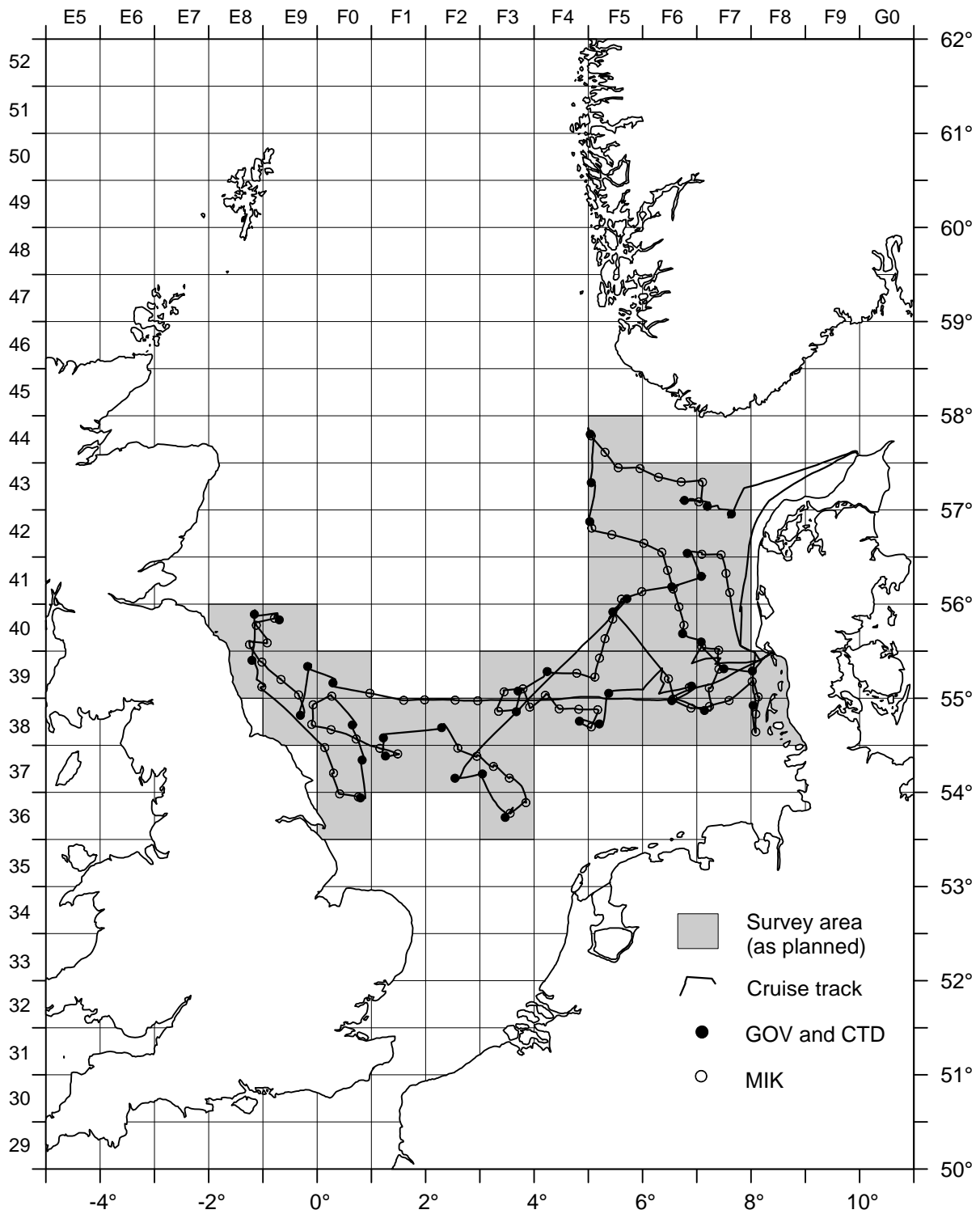


Fig. 1: Survey map with cruise track and sampling locations, Dana 1Q IBTS 2011.

Tab. 1: Species list, Dana 1Q 2011.

Fish		Invertebrates			
Danish name	Latin name		Danish name	Latin name	
Ansjos	Engraulis encrasicolus	*	Hummer (alm.)	Homarus gammarus	**
Brisling	Sprattus sprattus	***	Jomfruummer	Nephrops norvegicus	**
Fjæsing	Trachinus draco	*	Taskekrabbe	Cancer pagurus	**
Fjæsing lille	Trachinus vipera	*	Troldkrabbe	Lithodes maja	**
Fløjfisk (pl)	Callionymus maculatus	*	Hestereje	Crangon crangon	-
Fløjfisk (str)	Callionymus lyra	*	Lyskrebs	Euphausiidae sp.	-
Glastunge	Buglossidium luteum	*	Reje konge	Pandalus montagui	-
Glyse	Trisopterus minutus	*			
Håising	Hippoglossoides platessoides	*	Alloteuthis	Alloteuthis subulata	*
Havbars	Dicentrarchus labrax	*	Eledone Blæksprutte	Eledone cirrhosa	*
Havkvabbe (4tr)	Enchelyopus cimbrius	*	Loligo forbesi	Loligo forbesii	*
Havrude	Spondyliosoma cantha	*	Rossia macrosoma	Rossia macrosoma	-
Havtaske	Lophius piscatorius	***			
Hundestejle 3 p	Gasterosteus aculeatus	*	Almindelig søstjerne	Asterias rubens	-
Hvilling	Merlangius merlangus	***			
Ising	Limanda limanda	*			
Knurhane (grå)	Eutrigla gurnardus	*		-: not measured	
Knurhane (rød)	Trigla lucerna	*		*: Length	
Knurhane (tvst)	Aspitrigla cuculus	*		** : Length by sex	
Kuller	Melanogrammus aeglefinus	***		***: single fish data (length, weight, sex, maturity and age samples)	
Kulmule	Merluccius merluccius	***			
Kutling-sand	Pomatoschistus minutus	*			
Laksesild	Maurolicus muelleri	*			
Langebarn sph.	Lumpenus lumpretaeformis	*			
Makrel	Scomber scombrus	***			
Pighvarre	Psetta maxima	***			
Ringbug(finnebr)	Liparis liparis	*			
Rødspætte	Pleuronectes platessa	***			
Rødtunge	Microstomus kitt	***			
Sct. peter fisk	Zeus faber	*			
Sild	Clupea harengus	***			
Skægtorsk	Trisopterus luscus	*			
Skærising	Glyptocephalus cynoglossus	***			
Skrubbe	Platichthys flesus	*			
Slethvarre	Scophthalmus rhombus	*			
Slimål	Myxine glutinosa	*			
Smelt	Osmerus eperlanus	*			
Snippe	Entelurus aequoreus	*			
Sperling	Trisopterus esmarkii	***			
Stavsild	Alosa fallax	*			
Stenbider	Cyclopterus lumpus	*			
Stribet Mulle	Mullus surmuletus	***			
Strømsild	Argentina sphyraena	*			
Tobis-hav	Ammodytes marinus	*			
Tobiskonge	Hyperoplus lanceolatus	*			
Torsk	Gadus morhua	***			
Tunge	Solea solea	***			
Tungehvarre	Arnoglossus laterna	*			
Ulk	Myoxocephalus scorpius	*			
Ulk-panserulk	Agonus cataphractus	*			
Glathaj	Mustelus mustelus	**			
Rødhaj (smp)	Scyliorhinus canicula	**			
Stjernehaj	Mustelus asterias	**			
Pletrokke	Leucoraja naevus	**			
Sømrrokke	Raja clavata	**			
Storplettet Rokke	Raja montagui	**			
Tærbe	Amblyraja radiata	**			

Tab. 2: Number of single fish data (length, weight, sex and maturity) and samples for ageing, Dana 1Q 2011.

Species	IBTS Roundfish area			Total
	4	6	7	
Herring ( <i>Clupea harengus</i> )	251	271	278	800
Sprat ( <i>Sprattus sprattus</i> )	143	211	180	534
Cod ( <i>Gadus morhua</i> )	43	22	68	133
Haddock ( <i>Melanogrammus aeglefinus</i> )	155	2	108	265
Whiting ( <i>Merlangius merlangus</i> )	211	178	173	562
Norway pout ( <i>Trisopterus ermarkii</i> )	69	0	56	125
Mackerel ( <i>Scomber scombrus</i> )	4	0	1	5
Hake ( <i>Merluccius merluccius</i> )	5	0	1	6
Saithe ( <i>Pollachius virens</i> )	0	0	0	0
Monkfish ( <i>Lophius piscatorius</i> )	2	0	5	7
Striped red mullet ( <i>Mullus surmuletus</i> )	29	0	0	29
Plaice ( <i>Pleuronectes platessa</i> )	135	235	191	561
Sole ( <i>Solea solea</i> )	1	0	1	2
Turbot ( <i>Psetta maxima</i> )	0	3	3	6
Witch flounder ( <i>Glyptocephalus cynnoglossus</i> )	7	0	1	8
Lemon sole ( <i>Microstomus kitt</i> )	53	14	24	91
			Sum:	3134

Tab. 3: Preliminary abundance indices (number per hour trawling) for commercial IBTS species, Dana 1Q 2011.

haul	rect	her < 20cm	cod < 25 cm	had < 20cm	whi < 20cm	Npout < 15cm	sprat < 10cm	mack < 25cm
1	42F7	4	0	0	2	0	0	0
2	43F7	4	2	0	6	0	0	0
3	43F6	2342	4	0	138	0	0	0
4	44F5	0	14	146	36	33654	0	2
5	43F5	0	0	0	0	0	0	0
6	42F5	114	8	368	304	54	0	0
7	40F6	7704	4	0	52	0	62	0
8	40F7	41778	0	0	34	0	483	0
9	39F7	0	0	0	14	0	0	0
10	39F8	1035	6	0	2	0	763	0
11	42F6	455	23	0	374	0	0	0
12	41F7	2582	2	0	288	0	0	0
13	42F7	8239	8	0	242	0	2	0
14	39F4	2	0	2	78	0	2	0
15	39F3	4002	0	0	158	0	369	0
16	38F3	8450	2	2	290	0	226	0
17	38F4	11102	0	0	307	0	348	0
18	38F5	41937	0	0	468	0	4587	0
19	39F5	10117	0	0	132		1043	0
20	39F6	3204	0	0	35	0	85	0
21	38F6	20806	2	0	267	0	4405	0
22	38F7	1177	0	0	4	0	25	0
23	39F0	152	0	0	116	68	0	0
24	39E9	66	2	110	7	150	0	6
25	38E9	17	0	0	2	195	0	0
26	40E9	0	0	85	174	16	0	0
27	40E8	2	2	0	3094	90	0	0
28	39E8	0	0	0	31	0	2238	0
29	36F0	12521	6	0	3556	0	0	2
30	37F0	0	0	0	6	0	0	0
31	38F0	222	2	0	5082	30	0	0
32	37F1	990	0	0	215	0	150	0
33	38F1	36	0	0	0	0	4	0
34	38F2	897	0	0	12	0	58	0
35	36F3	1663	0	0	240		32540	0
36	37F3	512	2	0	48	0	14420	0
37	37F2	30737	2	0	4500	0	7832	0
38	41F5	4175	0	0	322	4	40	0
39	40F5	7794	0	0	238	0	18	0
40	38F8	36	0	0	0	0	83	0