

**R/V Dana**

**Cruise 07/2013**

**"Danish IBTS 3Q 2013"**



Vessel: R/V DANA

Cruise dates (planned): 30/7 – 16/8 2013

Cruise number: 07/13

Cruise name: Danish IBTS 3Q 2013

<b>Port of departure:</b>	Hirtshals	<b>Date:</b>	30 July
<b>Port of return:</b>	Hirtshals	<b>Date:</b>	15 August
<b>Other ports:</b>	Esbjerg	<b>Date and justification:</b>	7 August 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
Stina B. S. Hansen	DTU Aqua, Monitoring	Technician, Fish lab, BIA
Tom Svoldgaard	DTU Aqua, Monitoring	Technician, Fish lab
Maria Jarnum	DTU Aqua, Monitoring	Technician, Fish lab
Ronny Sørensen	DTU Aqua, Marin Services	Technician, CTD, Maintenance
Christian Petersen *	DTU Aqua, Marin 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
Gert Holst	DTU Aqua, Monitoring	Technician, Fish lab
Susanne Hansen	DTU Aqua, Monitoring	Technician, Fish Lab, BIA
Tommy Henriksen	DTU Aqua, Monitoring	Technician, Fish lab
Lise Sindahl	DTU Aqua, Monitoring	Technician, Fish lab
Ronny Sørensen	DTU Aqua, Marin Services	Technician, CTD, Maintenance
Christian Petersen *	DTU Aqua, Marin Services	Technician, CTD, Maintenance

\*: Training (not covered by DCF project 39058-13)

## Objectives

The survey is part of the 3<sup>rd</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 3<sup>rd</sup> quarter since 1991.

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 3<sup>rd</sup> quarter 2013 was allocated during the IBTS Working Group meeting in April 2013. Technical details are described in the current version of the survey manual (ICES 2012: Manual for the International Bottom Trawl Surveys. Series of ICES Survey Protocols. SISP 1-IBTS. 68 pp. <http://datras.ices.dk/Documents/Manuals/>).

## Itinerary

R/V Dana left Hirtshals on Tuesday 30 July at 13:00 local time, and the field work started in the afternoon in the western Skagerrak (Fig. 1). The vessel stayed in the port of Esbjerg on Friday 7 August from 9:00 to 14:15 for the scheduled exchange of scientific staff and crew. Favorable weather condition prevailed during most of the survey (Fig. 2), and R/V Dana returned ahead schedule to Hirtshals on Thursday 15 August at 19:00 local time after all of the planned work had been accomplished.

## Achievements

The original working area consisted of 47 ICES statistical rectangles located in IBTS North Sea roundfish areas 2, 4, 5, 6 and 7 with two stations in rectangles 43F7 and 42F7, and one additional station in the Skagerrak roundfish area 8 (Fig. 1). The following activities were carried out:

53 trawl hauls with GOV 36/47 (chalut á Grande Overture Verticale) all with standard groundgear A, (see IBTS Manual for specifications), 3 of 53 hauls were invalid and were repeated

50 CTD profiles.

## Results

The trawl parameters (Net opening and door spread) as monitoring with a ScanMar system were in the range or close to the suggested limits specified in the IBTS manual in most cases (Fig. 3). The GOV trawl had to exchange after an invalid station at which the trawl was almost completely destroyed. The replacement trawl showed a too low vertical opening and was exchanged with another one during the 2<sup>nd</sup> leg of the cruise. Besides this, deviations from the theoretical values for door spread and net opening are likely due to the high sensibility of the GOV to current effects. The actual facilities on DANA, however, do not allow to measure adequately current strength and direction in the near bottom layer.

About 80 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 composition 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, mackerel and plaice) as well as for monkfish, turbot, witch flounder, sole and lemon sole (Tab. 2). For all of these species, a maximum of three individuals per cm length group were taken from a single haul. The preliminary abundance indices for the main commercial species (Tab. 3) were reported to the coordinator of the 3<sup>rd</sup> quarter IBTS.

339 stomachs of Grey gurnard (*Eutrigla gurnadus*), 126 stomachs of mackerel (*Scomber scombrus*) and 3 stomachs of hake (*Merluccius merluccius*) were collected stratified by ICES rectangle and size group.

Marine litter was recorded in each GOV catch using four main categories: plastic, glass, metals and miscellaneous, which were subdivided in several minor categories as specified in the IBTS Manual.

## 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).

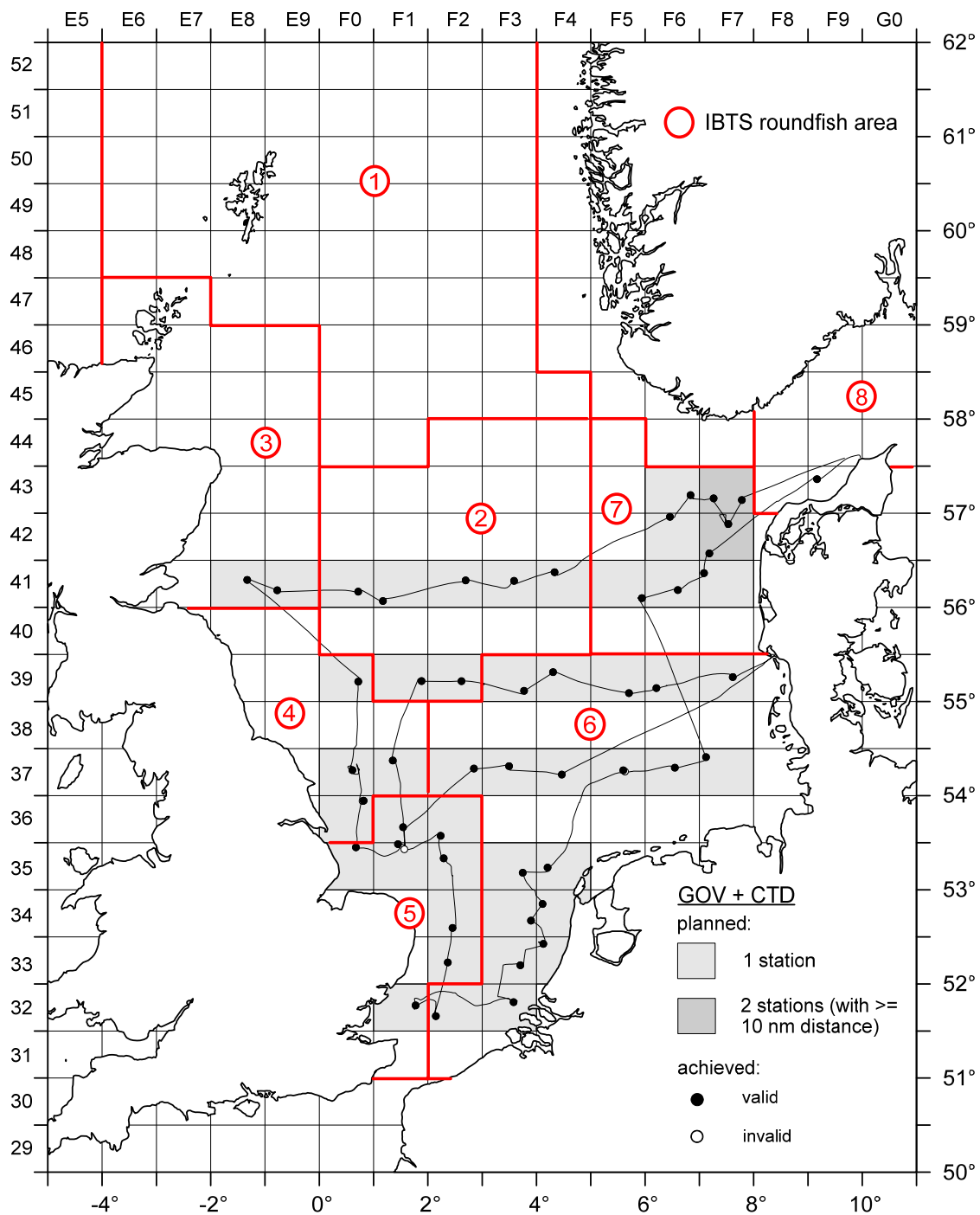


Fig. 1: Survey map with cruise track and sampling locations, Dana 3Q IBTS 2013.

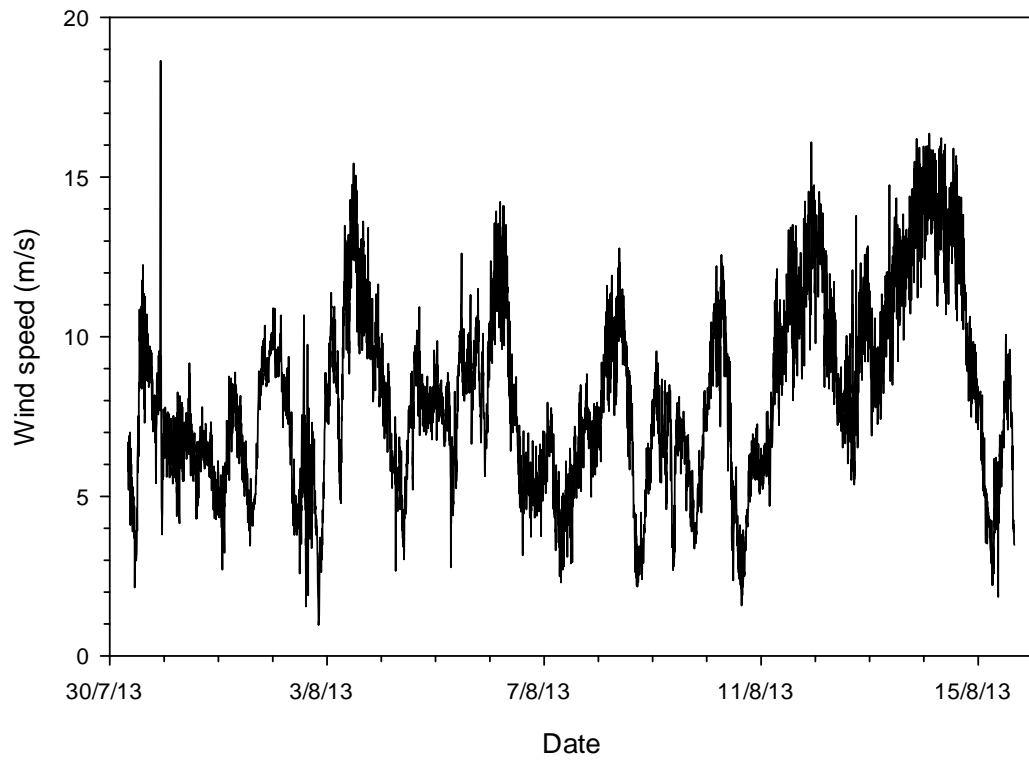


Fig. 2. Wind speed (m/s) recorded along the cruise track, Dana 3Q IBTS 2013.

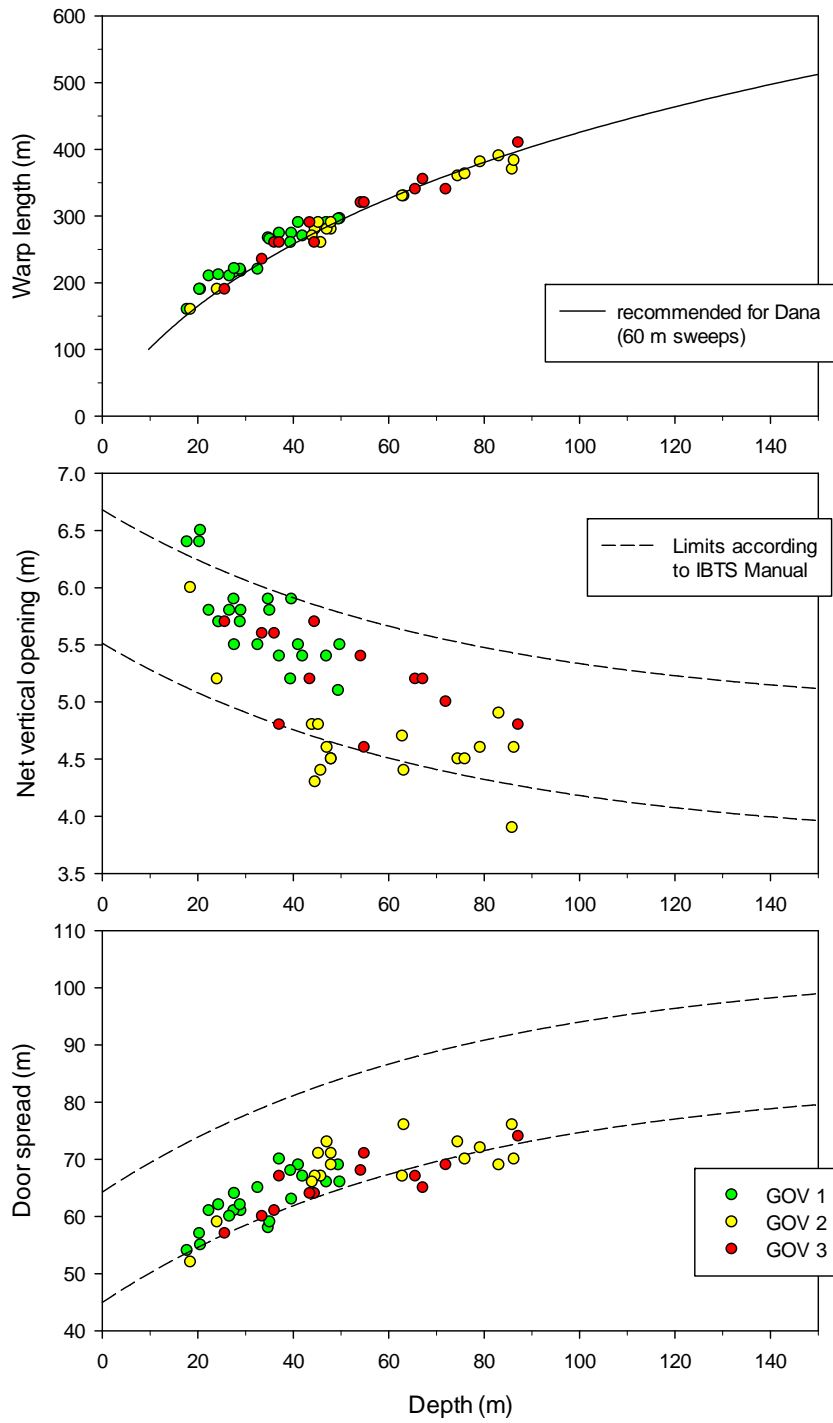


Fig. 3: Warp length, net opening and door spread in relation to depth, Dana 3Q IBTS 2013

Tab. 1: Species list, Dana 3Q 2013.

Fish			Invertebrates		
Danish name	Latin name		Danish name	Latin name	
Ansjos	<i>Engraulis encrasicolus</i>	*	Hummer (alm.)	<i>Homarus gammarus</i>	**
Brisling	<i>Sprattus sprattus</i>	***	Jomfruummer	<i>Nephrops norvegicus</i>	**
Fjæsing	<i>Trachinus draco</i>	*	Taskerkrabbe	<i>Cancer pagurus</i>	**
Fjæsing lille	<i>Trachinus vipera</i>	*	Troldkrabbe	<i>Lithodes maja</i>	*
Fløjfisk (str)	<i>Callionymus lyra</i>	*	Hestereje	<i>Crangon crangon</i>	-
Flodlampret	<i>Lampetra fluviatilis</i>	*	Reje konge	<i>Pandalus montagui</i>	-
Glastunge	<i>Buglossidium luteum</i>	*			
Glyse	<i>Trisopterus minutus</i>	*		<i>Alloteuthis subulata</i>	*
Havkat	<i>Anarhichas lupus</i>	*		<i>Loligo forbesii</i>	*
Havkvabbe (4tr)	<i>Enchelyopus cimbrius</i>	*		<i>Loligo vulgaris</i>	*
Havtaske	<i>Lophius piscatorius</i>	***+		<i>Eledone cirrhosa</i>	*
Hestemarkrel	<i>Trachurus trachurus</i>	*		<i>Rossia macrosoma</i>	-
Hornfisk	<i>Belone belone</i>	*			
Hvilling	<i>Merlangius merlangus</i>	***			
Havrude	<i>Spondyliosoma cantharus</i>	*	Jomfru øster	<i>Aquiptecten opercularis</i>	-
Håising	<i>Hippoglossoides platessoides</i>	*			
Ising	<i>Limanda limanda</i>	*			
Knurhane (grå)	<i>Eutrigla gurnardus</i>	*			
Knurhane (rød)	<i>Trigla lucerna</i>	*		-: not measured	
Knurhane (tvst)	<i>Aspitrigla cuculus</i>	*		*: Length	
Kuller	<i>Melanogrammus aeglefinus</i>	***		**: Length by sex	
Kulmule	<i>Merluccius merluccius</i>	***+		***: single fish data (length, weight, sex) and age samples	
Lange	<i>Molva molva</i>	*		+: maturity	
Makrel	<i>Scomber scombrus</i>	***			
Mørksej	<i>Polachius virens</i>	***			
Multe, tyklæbet	<i>Chelone labrosus</i>	*			
Pighvarre	<i>Psetta maxima</i>	***			
Rødspætte	<i>Pleuronectes platessa</i>	***			
Rødtunge	<i>Microstomus kitt</i>	*			
Sardin	<i>Sardina pilchardus</i>	*			
Sct. peter fisk	<i>Zeus faber</i>	*			
Sild	<i>Clupea harengus</i>	***			
Skægtorsk	<i>Trisopterus luscus</i>	*			
Skærising	<i>Glyptocephalus cynoglossus</i>	***			
Skrubbe	<i>Platichthys flesus</i>	*			
Slethvarre	<i>Scophthalmus rhombus</i>	*			
Slimål	<i>Myxine glutosa</i>	***			
Stribet mulle	<i>Mullus surmuletus</i>	***			
Sperling	<i>Trisopterus esmarkii</i>	***			
Strømsild	<i>Argentina sphyraena</i>	*			
Tangspræl	<i>Pholis gunnellus</i>	*			
Tobis-hav	<i>Ammodytes marinus</i>	*			
Tobis-nøgen	<i>Gymnammodytes semisquamatus</i>	*			
Tobiskonge	<i>Hyperoplus lanceolatus</i>	*			
Torsk	<i>Gadus morhua</i>	***			
Tunge	<i>Solea solea</i>	***+			
Tungevarre	<i>Arnoglossus laterna</i>	*			
Ulke	<i>Myoxocephalus scorpius</i>	*			
Ulke-panserulke	<i>Agonus cataphractus</i>	*			
Gråhaj	<i>Galeorhinus galeus</i>	**			
Glathaj	<i>Mustelus mustelus</i>	**			
Pighaj	<i>Squalus acanthias</i>	**			
Rødhaj (smpl)	<i>Scyliorhinus canicula</i>	**			
Stjernehaj	<i>Mustelus asterias</i>	**			
Plettrokke	<i>Raja naevus</i>	**			
Skade	<i>Raja batis</i>	**			
Sømrrokke	<i>Raja clavata</i>	**			
Storpletet rokke	<i>Raja montagui</i>	**			
Tærbe	<i>Amblyraja radiata</i>	**			



Tab. 2: Number of single fish data (length, weight, sex and maturity) and samples for ageing, Dana 3Q 2013.

Species	IBTS roundfish area							Total
	2	3	4	5	6	7	8	
Herring ( <i>Clupea harengus</i> )	194	52	25	22	321	163	0	777
Sprat ( <i>Sprattus sprattus</i> )	10	58	34	61	167	4	0	334
Cod ( <i>Gadus morhua</i> )	9	4	23	13	9	87	0	145
Haddock ( <i>Melanogrammus aeglefinus</i> )	103	46	39	0	0	57	0	245
Whiting ( <i>Merlangius merlangus</i> )	86	57	96	136	143	135	6	659
Norway pout ( <i>Trisopterus ermarkii</i> )	20	0	0	0	0	0	0	20
Mackerel ( <i>Scomber scombrus</i> )	27	25	18	103	92	24	25	314
Saithe ( <i>Pollachius virens</i> )	0	0	1	0	0	33	0	34
Plaice ( <i>Pleuronectes platessa</i> )	127	89	127	179	193	127	0	842
Monkfish ( <i>Lophius piscatorius</i> )	not							3
Hake ( <i>Merluccius merluccius</i> )								9
Turbot ( <i>Psetta maxima</i> )	stratified							15
Witch flounder ( <i>Glyptocephalus cynoglossus</i> )	by roundfish area							3
Sole ( <i>Solea solea</i> )								21
							Sum:	3421

