DTU Aqua

Cruise Report

R/V Dana

Cruise 07/2012

”Danish IBTS 3Q 2012”

Vessel: R/V DANA

Cruise dates (planned): 23/7 – 9/8 2012

Cruise number: 07/12

Cruise name: Danish IBTS 3Q 2012

Port of departure:	Hirtshals	**Date:**	23 July
Port of return:	Hirtshals	**Date:**	8 Aug
Other ports:	Esbjerg	**Date and justification:**	31 July / 1 Aug Scheduled exchange of scientific staff and crew

Participants

Leg 1: Hirtshals - Esbjerg		
Name	**Institute**	**Function and main tasks**
Helle Rasmussen	DTU Aqua, Monitoring Hirtshals	Cruise leader, Fish lab
Kai Wieland	DTU Aqua, Monitoring Hirtshals	Scientist, Fish lab
Søren L. Grønby	DTU Aqua, Monitoring Hirtshals	Technician, Deck work, Fish lab
Tommy Henriksen	DTU Aqua, Monitoring Hirtshals	Technician, Fish lab
Ronny Sørensen	DTU Aqua, Marin Services Hirtshals	Technician, CTD, Maintenance
Sofie R. Jeremiassen	GINR, Section for fish and shellfish, Nuuk	Technician, Fish Lab
Willem Brugge		Guest, Fish Lab
Leg 2: Esbjerg - Hirtshals		
Name	**Institute**	**Function and main tasks**
Kai Wieland	DTU Aqua, Monitoring Hirtshals	Cruise leader, Fish lab, CTD
Stina Hansen	DTU Aqua, Monitoring Charlottenlund	Technician, Fish lab
Reinhardt Jensen	DTU Aqua, Monitoring Hirtshals	Technician, Fish Lab
Sofie R. Jeremiassen	GINR, Section for fish and shellfish, Nuuk	Technician, Fish lab
Willem Brugge		Guest, Fish lab
Bjarne Stage	DTU Aqua, Charlotten-lund	Scientist, Video Benthos Mapping System and Side Scan Sonar

Objectives

The survey is part of the 3rd 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 3rd quarter since 1991.

The IBTS aims to provide ICES assessment and science groups with consistent and standardized 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 3rd 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;

The area to be covered by Denmark with RV Dana in the 3rd quarter 2012 was allocated during the most recent IBTS Working Group meeting. Technical details are described in the current version of the survey manual (ICES 2012: IBTS Manual – Revision VIII (http://www.ices.dk/products/surveyprotocols.asp).

Itinerary

R/V Dana left Hirtshals on 23 July at 15:00 local time and began with the scientific work the next morning. The scientific program was interrupted on 31 July in the evening for the scheduled exchange of scientific staff and crew in Esbjerg the next morning. Good weather conditions prevailed during both legs of the survey, and R/V Dana returned to Hirtshals on 8 August at 7:15 local time after the planned work had been accomplished.

Achievements

The working area consisted of 47 ICES statistical rectangles located in IBTS roundfish areas 2, 3, 4, 5, 6 and 7. The following activities were carried out (Fig. 1):

49 valid trawl hauls with GOV 36/47 (chalut á Grande Overture Verticale), all with standard groundgear A (see IBTS Manual for specifications)

49 CTD profiles (with oxygen, fluorescence and turbidity)

Continuous recording of surface temperature, salinity and fluorescence along cruise track

Continuous recording of standard meteorological data

Tests of a High Resolution Video Benthos Mapping at 3 different locations

4 tracks with a Side Scan Sonar

Results

The trawl parameters (Net opening and door spread) as monitoring with a Scanmar system were within or close to in the range specified by the IBTS manual, but relative high net openings were recorded in some cases although larger warp length than specified in the manual were used (Fig. 2).
Sorting and analyses of the trawl catches were conducted as specified according to the IBTS manual. About 65 different species of fish and selected invertebrates were recorded in detail (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 gender (length composition and weight). Single fish data (length, weight, gender) and otoliths were collected for the main commercial species (cod, haddock, whiting, Norway pout, herring, sprat, saithe and mackerel) as well as for plaice, turbot, anglerfish and witch flounder (Tab. 2). The preliminary abundance indices for the main commercial species (Tab. 3) were reported to the coordinator of the 3rd quarter IBTS.

Others

A cruise summary report has been delivered online to

http://seadata.bsh.de/csr/online/V1_index.html.

Date: 11/8-2012

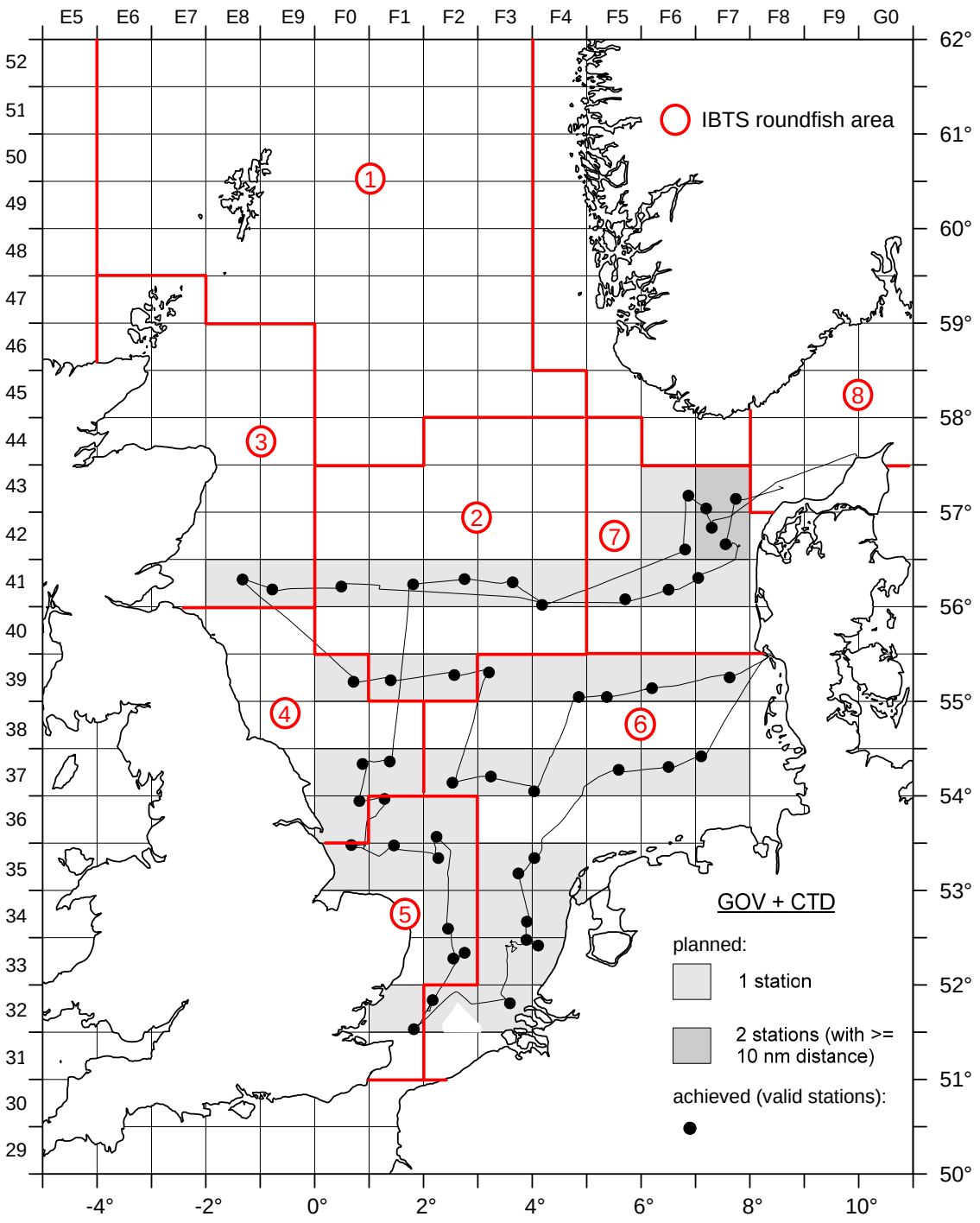

Fig. 1: Survey map with cruise track and sampling locations, Dana 3Q IBTS 2012 (Note: western GOV track in 33F2 and eastern GOV track in 43F7 aborted after 14 and 21 min, respectively, due to adverse bottom conditions.

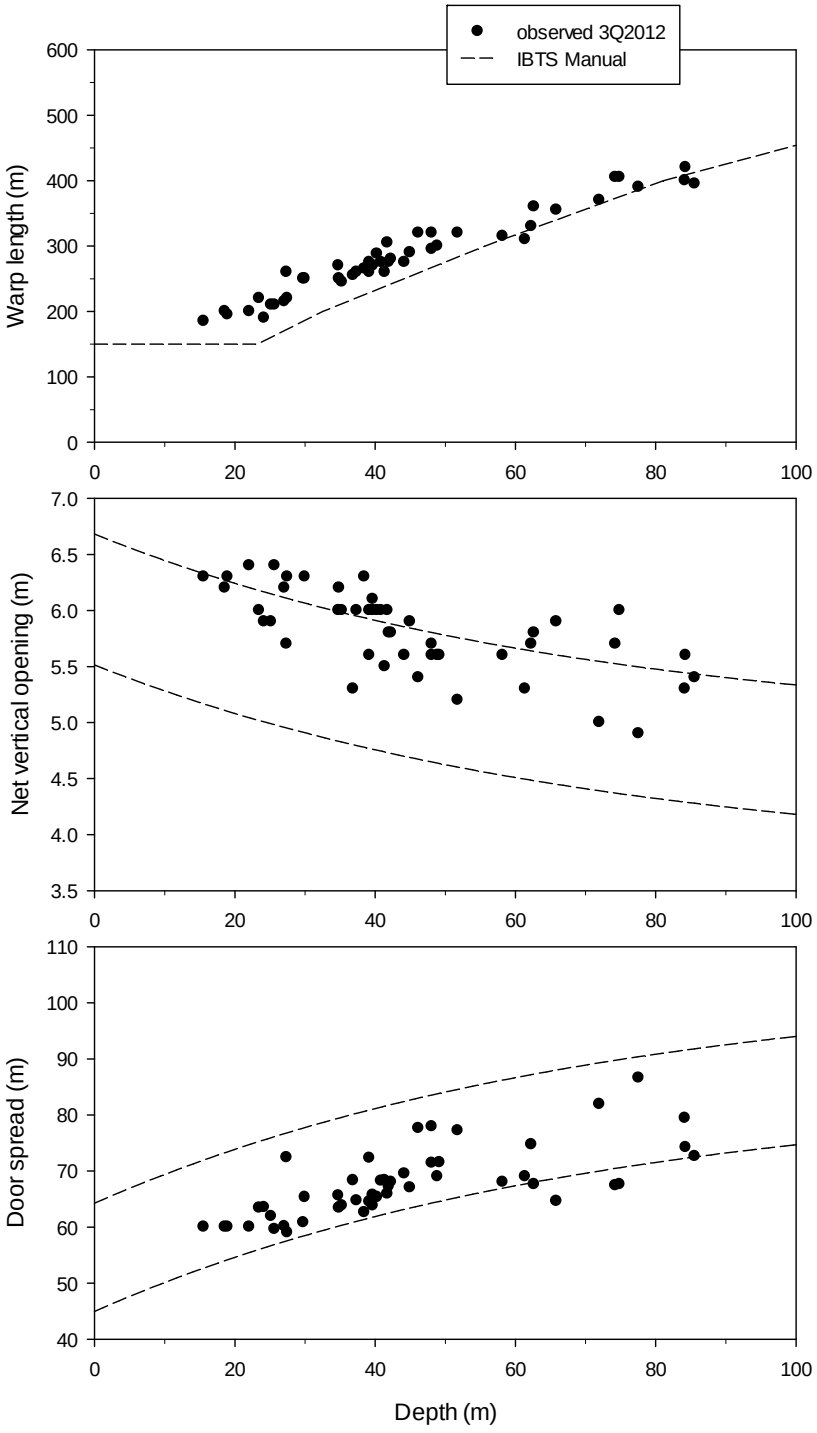

Fig. 2: Warp length, vertical net opening and door spread in relation to depth and warp length, Dana 3Q IBTS 2012.

Tab. 1: Species list, Dana 3Q 2012.

Fish			Invertebrates		
Danish name	Latin name		Danish name	Latin name	
Ansjos	Engraulis encrasicolus	*	Hummer (alm.)	Homarus gammarus	**
Bandet tunge	Microchirus variegatus	*	Jomfruhummer	Nephrops norvegicus	**
Brisling	Sprattus sprattus	***	Taskekrabbe	Cancer pagurus	**
Fjæsing lille	Trachinus vipera	*	Troldkrabbe	Lithodes maja	*
Fløjfisk (pl)	Callionymus maculatus	*	Hestereje	Crangon crangon	-
Flodlampret	Lampetra fluviatilis	*	Reje konge	Pandalus montagui	-
Glastunge	Buglossidium luteum	*			
Glyse	Trisopterus minutus	*		Alloteuthis subulata	*
Håising	Hippoglossoides platessoides	*		Loligo forbesii	*
Havbars	Dicentrarchus labrax	*		Loligo vulgaris	*
Havkvabbe (4tr)	Enchelyopus cimbrius	*		Todaropsis eblanae	*
Havbrassen, højfin-net	Taractes asper	*		Illex coindetii	*
Havtaske	Lophius piscatorius	***+		Sepiola atlantica	-
Hvilling	Merlangius merlangus	***			
Ising	Limanda limanda	*			
Knurhane (grå)	Eutrigla gurnardus	*	Stor kammusling	Pecten Maximus	-
Knurhane (rød)	Trigla lucerna	*	Jomfru øster	Aquipecten opercularis	-
Knurhane (tvst)	Aspitrigla cuculus	*			
Kuller	Melanogrammus aeglefinus	***			
Kulmule	Merluccius merluccius	***+			
Makrel	Scomber scombrus	***	-:	not measured	
Mørksej	Polachius virens	***	*:	Length	
Multe, tyklæbet	Chelon labrosus	*	**:	Length by sex	
Pighvarre	Psetta maxima	***	***:	single fish data (length, weight,	
Rødspætte	Pleuronectes platessa	***		sex) and age samples	
Rødtunge	Microstomus kitt	***+	+:	maturity	
Sardin	Sardina pilchardus	*			
Sct. peter fisk	Zeus faber	*			
Sild	Clupea harengus	***			
Skægtorsk	Trisopterus luscus	*			
Skærising	Glyptocephalus cynoglossus	***			
Skrubbe	Platichthys flesus	*			
Slethvarre	Scophthalmus rhombus	*			
Sperling	Trisopterus esmarkii	***			
Stavsild	Alosa fallax	*			
Stribet Mulle	Mullus surmuletus	***			
Tangspræl	Pholis gunnellus	*			
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	**			
Pighaj	Squalus acanthias	**			
Rødhaj (smpl)	Scyliorhinus canicula	**			
Stjernehaj	Mustelus asterias	**			
Plettrokke	Raja naevus	**			
Småplettet rokke	Raja brachyura	**			
Storplettet rokke	Raja montagui	**			
Tærbe	Amblyraja radiata	**			

Tab. 2: Number of samples taken for ageing (*: all individuals below size limit, -: caught but no sampling required), Dana 3Q 2012.

	IBTS roundfish area						
Species	2	3	4	5	6	7	Total
Herring	121	78	18	40	237	90	584
Sprat	19	59	41	122	169	96	506
Cod	60	1	9	21	60	67	218
Haddock	101	71	45	0	0	38	255
Whiting	139	58	98	123	153	102	673
Norway pout	0	0	0	*	*	0	0
Saithe	0	0	0	0	0	1	1
Mackerel	52	30	49	106	108	69	414
Plaice	150	86	111	167	215	173	902
Anglerfish	1	1	3	0	1	3	9
Turbot	0	0	0	0	5	0	5
Witch flounder	65	-	-	-	5	-	70
						Sum:	3637

Tab. 3: Preliminary abundance indices (number per hour trawling) for IBTS main species, Dana 3Q 2012.

HL:	ST	COD			HADDOCK			WHITING			NORWAY POUT			HERRING				SPRAT		MACKEREL			SAITHE			PLAICE		
NO:	SQ																											
		0	1	2+	0	1	2+	0	1	2+	0	1	2+	0	1	2+	0	1	2+	0	1	2+	0	1	2+	0	1	2+
		<18	18-37	≥38	<17	17-29	≥30	<17	17-23	≥24	<13	13-15	≥16	<15.5	15.5-22.5	≥23	-	<13	≥13	<17	17-29	≥30	<22	22-32	≥33	<10	10-18	≥19
1	42F7	0	2	17	2	0	0	0	2	0	0	0	0	0	0	0		0	0	0	227	7	0	0	0	0	0	48
2	43F7	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0		0	0	0	48	2	0	0	0	0	0	58
3	43F6	0	216	6	128	921	963	0	92	158	78	0	0	0	2	0		0	0	0	0	0	0	2	0	0	0	30
4	42F6	0	2	4	14	0	0	4	62	14	10	0	0	612	11752	0		3501	231	0	48	0	0	0	0	0	0	254
5	41F4	0	12	2	0	0	0	118	5233	1160	0	0	0	0	0	0		0	0	0	10	0	0	0	0	0	0	225
6	41F3	0	16	4	6	0	52	4	48	26	2	0	0	5	1411	0		0	0	0	0	0	0	0	0	0	0	226
7	41F2	0	60	12	4	63	531	0	420	594	8	0	0	0	4	0		0	0	0	3445	0	0	0	0	0	0	166
8	41F1	0	20	12	0	40	920	0	42	502	18	0	0	0	10	10		0	0	0	826	25	0	0	0	0	0	38
9	37F1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0		12	19	0	77	2	0	0	0	0	12	364
10	37F0	0	0	0	0	0	10	0	27811	4239	0	0	0	0	20	2		0	60	0	123	91	0	0	0	0	2	64
11	36F0	0	0	0	0	0	0	0	2747	695	0	0	0	0	10	2		4	6	0	956	104	0	0	0	0	12	44
12	36F1	0	0	0	0	0	0	0	48	20	0	0	0	0	2	0		248	54	0	184	46	0	0	0	0	8	102
13	35F0	0	0	12	0	0	0	0	1445	8591	0	0	0	0	6	15		1299	23	0	6	15	0	0	0	0	0	0
14	35F1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	7798	0	0	0	0	0	64	403
15	35F2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		24	4	0	210	2	0	0	0	0	210	240
16	36F2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		219	44	0	130	10	0	0	0	0	31	431
17	34F2	0	2	12	0	0	0	0	3566	1693	4	0	0	575	238	0		16890	4490	0	74	50	0	0	0	0	0	64
18	33F2	0	0	9	0	0	0	0	34	9	0	0	0	0	0	0		0	0	0	69	9	0	0	0	0	0	39
19	33F2	0	4	12	0	0	0	0	461	352	40	0	0	0	0	4		2	4	0	232	11	0	0	0	0	2	34
20	32F2	0	6	6	0	0	0	0	373	802	24	0	0	0	0	152		4	14	0	16	48	0	0	0	0	0	46
21	32F1	0	0	0	0	0	0	0	915	527	229	0	0	2	0	0		1017	35	0	99	21	0	0	0	0	2	39
22	32F3	2	0	0	0	0	0	4927	232	0	0	0	0	0	417	42		6	6	0	242	8	0	0	0	6	48	6
23	33F3	-	-	-	-	-	-	-	-	-	-	-	-	invalid	-	-		-	-	-	-	-	-	-	-	-	-	-
24	33F4	0	0	0	0	0	0	0	4	0	0	0	0	0	4	2		0	0	0	481	100	0	0	0	2	10	16
25	33F3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2		0	0	0	8	8	0	0	0	0	35	41
26	34F3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0		0	0	0	1475	10	0	0	0	0	36	64
27	35F3	0	0	0	0	0	0	2	26	2	0	0	0	0	0	0		0	0	0	350	19	0	0	0	0	18	60
28	35F4	0	0	0	0	0	0	19	33	0	0	0	0	469	11	0		143718	0		170	2	0	0	0	0	46	166
	34F4	-	-	-	-	-	-	-	-	-	-	-	-	cancelled	-	-		-	-	-	-	-	-	-	-	-	-	-
29	37F5	0	0	0	0	0	0	300	110	6	0	0	0	178	2	0		3281	0	0	21	4	0	0	0	0	14	161
30	37F6	0	0	0	0	0	0	26	20	2	0	0	0	0	0	0		0	0	0	1002	0	0	0	0	0	12	140
31	37F7	0	0	0	0	0	0	36	94	0	0	0	0	79004	8	0		72711	5784	0	104	26	0	0	0	0	48	148
32	39F7	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0		0	0	0	682	13	0	0	0	0	64	2
33	39F6	0	0	0	0	0	0	534	485	21	0	0	0	247	367	0		374	14	0	0	0	0	0	0	0	6	140
34	39F5	0	0	0	0	0	0	78	32	0	0	0	0	130	12	0		7441	2196	0	10	0	0	0	0	0	0	561
35	39F4	0	0	2	0	0	0	60	17	2	0	0	0	0	0	0		2757	1071	0	166	0	0	0	0	0	8	451
36	37F4	0	0	0	0	0	0	176	302	14	0	0	0	8	4	0		121799	649	0	4	2	0	0	0	0	18	114
37	37F3	0	82	56	0	0	0	455	7228	1596	0	0	0	0	0	0		11	2	0	64	2	0	0	0	0	4	207
38	37F2	0	0	0	0	0	0	1132	302	28	0	0	0	0	0	0		595	113	0	0	0	0	0	0	0	0	16
39	39F3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	731	0	0	0	0	0	0	348
40	39F2	0	0	0	0	0	0	0	26	0	0	0	0	0	0	2		48	38	0	166	0	0	0	0	0	0	236
41	39F1	0	0	0	0	0	10	0	2	2	0	0	0	0	0	0		0	6	0	0	0	0	0	0	0	2	134
42	39F0	0	8	10	0	84	776	0	11699	8190	0	0	0	0	0	4		2	2	0	399	68	0	0	0	0	0	84
43	41E8	0	0	0	4	1590	74	4	92	8	0	0	0	0	6	34		18	8	0	0	4	0	0	0	0	14	122
44	41E9	0	0	2	2	148	673	0	310	2043	0	0	0	0	22	436		2065	608	0	380	711	0	0	0	0	0	230
45	41F0	0	0	0	0	21	453	10	100	1094	0	0	0	0	1306	501		0	0	0	4119	79	0	0	0	0	0	28
46	41F5	0	2	2	0	0	0	1746	102	20	0	0	0	344	11314	0		48944	6606	0	0	0	0	0	0	0	0	0
47	41F6	0	0	2	0	0	0	4	16	2	0	0	0	0	0	0		0	0	0	82	4	0	0	0	0	4	336
48	41F7	0	2	0	2	0	0	2	32	4	0	0	0	96	60	0		80	20	0	1121	6	0	0	0	0	4	385
49	42F7	0	0	6	0	0	0	0	16	2	0	0	0	0	0	0		0	0	0	1366	4	0	0	0	0	15	363
50	43F7	0	3	29	479	0	0	0	3	0	0	0	0	0	3	0		0	0	0	3	6	0	0	0	0	0	0