FISHERIES SCIENCE PARTNERSHIP

Report of an investigation into the potential whitefish by-catch in the North Sea Norway Pout fishery

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CEFAS, Lowestoft
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Introduction

The DEFRA-funded Fisheries Science Partnership was established between DEFRA[1], CEFAS[2] and NFFO[3] for the duration of financial year 2003/4. The objective was to enable the fishing industry to demonstrate the results of commercial fishing in a number of priority fishing areas nominated by the NFFO. Fishing vessels were chartered to fish commercially, usually under dispensation from the quota regulations, to obtain new data on the catch rate and size distribution of target species, and in some cases by-catch species. Ten projects were scheduled and completed. The charter of suitable fishing vessels was arranged by the NFFO, and work plans were developed between NFFO, CEFAS and the vessel skippers. CEFAS deployed sea-going staff to record raw data that were subsequently returned to the laboratory at Lowestoft for input and analysis.

CEFAS acknowledges the help of the NFFO and skippers during the conduct of these studies. The data and results are the intellectual property of the vessel skippers, CEFAS and NFFO.

1. Department of Environment, Food and Rural Affairs
2. Centre for Environment, Fisheries and Aquaculture Science
3. National Federation of Fishermen's Organisations

Whitefish By-catch in the North Sea Norway Pout Fishery

This report summarises the results of FSP Project 6, which fished in December 2003 with a small-meshed net on Norway pout grounds on the perimeter of the Norway pout box in the northern North Sea.

The aim of this project was to quantify and record the catch of Norway pout and other fish by-catches caught in an industrial Norway pout trawl. The conditions under which the sea trials were conducted were designed to closely replicate those of the commercial fishery.

Norway pout (*Trisopterus esmarkii*) is a small species of fish belonging to the cod family (Gadoids). They rarely exceed 25cm in length and most are below 20cm. Norway pout are caught in a directed fishery using small meshed demersal trawls (16mm). The catches are processed in industrial plants to produce fishmeal.

In a directed Norway pout fishery in the North Sea, the relevant EU Technical Conservation Regulation (850/98) stipulates that the catch composition weights should contain a minimum of 60% Norway pout and less than 5% of cod, haddock and saithe (combined). Catches of whiting should also not exceed 15%.

This report presents

- Percentage catch compositions caught using an industrial Norway pout trawl.
- Percentage catch compositions caught using a whitefish trawl fitted with the 20mm cod end liner
- Length distributions of Norway pout and by-catch species caught.

Methods

The fishing grounds

The fishing grounds chosen for this project were in the Northern North Sea, on the perimeter of the 'pout box' (Figure 1), which were known commercial fishing grounds for Norway pout. The trials were conducted throughout a two-week period in December 2003, which was the peak period for landings from this fishery. Some fishing time was lost due to adverse weather conditions.

The vessel and fishing gear

The commercial fishing vessel chartered for this project was the 45-metre stern ramp freezer trawler 'Swanella' (H 1065). The trawl used was a commercial design used for industrial fishing for Norway pout, supplied by a Danish trawl maker. Some initial minor modifications were made to the trawl (lifting strops) to adapt it for use on the stern trawler as the net supplied was originally rigged for side trawling.

The hauls

The haul durations varied between 60 – 205 minutes (average 125 minutes) in depths ranging from 110 – 140 metres (average 133 metres). The average speed of the hauls was 3.6 knots (over the ground). The choice of haul direction was made regardless of tidal flow, and fishing was conducted across, with and against the tide.

A total of 15 hauls were made with the industrial pout trawl, of which 11 were successful. Damage to the trawl (torn belly meshes) was experienced during a number of hauls, and on-board repairs were made. The industrial pout trawl was light by design and was fished on soft clean grounds where it was deployed to lightly skim over the seabed.

During haul 15, the trawl caught a large quantity of mackerel (estimated circa >50 tonnes) resulting in the loss of the cod end when hauling up the stern ramp. Onboard repairs could not be made to the trawl due to the severity of the damage and a lack of replacement cod end material. Trials with the industrial pout trawl were therefore discontinued at this point in time.

A whitefish trawl was subsequently rigged up onboard and fitted with a 20mm cod end liner[1] and a further four successful hauls were made with this gear. The purpose of these hauls was to ascertain if such a trawl would give comparable catch data to the industrial pout trawl.

Catch and by-catch estimation

One fish basket (circa 40kg) of representative unsorted catch was sampled from each successful haul and the fish were separated out by species. Each portion was weighed to the nearest kilogram. The full body lengths of all the fish from each portion were measured and recorded to 1cm below. Estimates of the total catch volume and the associated raising factors, were obtained by two methods:

[1] Whitefish trawl: mesh size 135mm throughout, with 120mm cod end and rock hopper ground gear fitted with 5m long 20mm cod end liner

a) For smaller catch volumes: By directly counting the number of fish baskets filled by the total catch.

b) For larger catches: By directly counting the number of fish baskets filled by one particular species (usually haddock) from the total catch.

Results

Data summary
This FSP project details the catch composition data from an industrial Norway pout trawl deployed from a UK registered fishing vessel during sea trials conducted in December 2003.

Overall, Norway pout constituted an average of 25% (median 19%) of the catch (by weight) and 57% (median 72%) (by number). Catch rates were highest in ICES statistical rectangles 47 E9, 47 F0 and 49 F0.

Haddock was the most prevalent by-catch species (38% by weight on average), the majority of which was above the legal minimum landing size. Whiting and herring were also caught in relatively large numbers.

The combined by-catch level of haddock, whiting, herring and other minor species was estimated to be on average 75% by weight (43% by number) of the total catch, although there was large between-haul variation.

Trials with the industrial pout trawl
Norway pout catches
Norway pout was the most abundant species caught in the trawl, but catch rates were highly variable between hauls. Overall, Norway pout constituted an average of 25% (median 19%) of the catch (by weight) and 57% (median 72%) of the catch (by number). Catch rates were highest in ICES statistical rectangles 47 E9, 47 F0 and 49 F0. Two cohorts of Norway pout appeared to be caught, both of which fell within the body length range of between 6 – 21cm. Further details are presented in Figure 2, Figure 3, Figure 4 and Figure 6 and Table 1 to Table 2.

Haddock (Melanogrammus aeglefinus) by-catch
Of all of the by-caught species, haddock was the most prolific with an average of 38% (median 27%) of the catch (by weight) and 21% (median 9%) of the catch (by number). Catch rates of haddock varied considerably between hauls but was highest in ICES statistical rectangles 47 F0 and 47 F1. Most of the haddock caught were above the legal minimum landing size and appeared to be primarily composed of a single cohort. Haddock were caught as a by-catch in every haul conducted throughout the sea trials. Further details are presented in Figure 2, Figure 3, Figure 5 and Figure 7 and Table 1 to Table 2.

*Whiting (*Merlanigus merlangus*) by-catch*
Whiting was caught as a by-catch in the industrial trawl all but one of the hauls conducted, although catch rates were variable. This species was present at levels of an average of 19% (median 13%) of the catch (by weight) and 11% (median 4%) of the catch (by number). It was most abundant in the catches ICES rectangle 49 E8. The whiting caught ranged in length from 20 – 42 cm. Further details are presented in Figure 2, Figure 3, Figure 5 and Figure 8 and Table 1 to Table 2.

*Herring (*Clupea harengus*) by-catch*
Herring was caught regularly, but intermittently, as a by-catch species in the industrial pout trawl. Herring represented 15% (median 5%) of the catch (by weight) and 10% by number (median 5%). The herring caught all appeared to belong to a single cohort displaying a narrow length range of 24 – 31 cm. Further details are presented in Figure 2, Figure 3, Figure 5 and Figure 9 and Table 1 to Table 2.

Other species
A variety of other species were caught intermittently in low numbers and contributed a negligible component of the by-catch in terms of numbers and weight. These included fish species such as cod (*Gadus morrhua*), saithe (*Pollachus virens*), blue whiting (*Micromesistius poutassou*), lesser argentine (*Argentia sphyraena*), thick back sole (*Microchirus variegatus*), dab (*Limanda limanda*) and grey gurnard (*Eutrigla gurnardus*). Two main crustacea species were also caught; *Nephrops norwegicus and Pandalus borealis.*

During one haul (haul 15) a large quantity (circa .50 tonnes) of mackerel (*Scomber scombrus*) was caught, probably whilst hauling to the surface. This event was however unusual and should be considered atypical.

Trials with the whitefish trawl fitted with the 20mm cod end liner
The catch compositions of the four hauls conducted with the whitefish trawl fitted with the 20mm cod end liner appeared to be considerably different from those obtained with the industrial pout trawl. In the whitefish trawl, catches of Norway pout were lower and herring was absent in all hauls, whereas saithe, flatfish and in particular cod were much more abundant than was found in the industrial trawl.

Further details on the hauls conducted with this gear are given in Figure 10, Figure 11 and Table 3.

Conclusions

Catches from the industrial Norway Pout trawl
The catch compositions obtained from the eleven successful hauls conducted during these trials with the industrial pout trawl may be reasonably representative of the industrial pout directed fishery which operated in these waters during this period. One Danish industrial vessel (Esbjerg registered E630) was observed fishing in the same waters during the sea trials.

The weights of Norway pout in the catch averaged at 25% and rarely exceeded the minimum level of legal requirement of 60%.

Haddock was the most prevalent by-catch species (38% by weight on average), the majority of which was above the legal minimum landing size. The maximum by-catch limit for this species of 5% was exceeded in every haul except one.

The maximum permissible whiting by-catch in this fishery of 15% was exceeded in four of the 11 hauls.

The combined by-catch level of haddock, whiting, herring and other minor species was estimated to be on average 75% by weight (43% by number) of the total catch.

There was large between-haul variation in the catch compositions.

Catches from the whitefish trawl with cod end liner

The four hauls undertaken with the whitefish trawl fitted with the 20mm cod end liner, proved to be unsatisfactory and must be considered as *not* representative of industrial pout fishing.

The whitefish trawl was fitted with heavy ground gear (rock-hoppers), larger meshes throughout the wings and body of the trawl and also had an upper square mesh panel fitted. Despite the presence of the 20mm cod end liner in the trawl, these factors almost certainly contributed to the differences in catch compositions obtained when compared to the industrial Norway Pout trawl.

% of catch (by weight)					
Haul	Norway pout	Haddock	Whiting	Herring	Others
1	45	23	13	19	0
2	60	5	13	23	0
3	19	37	27	1	16
4	0	95	0	5	0
5	25	55	10	8	3
8	17	7	9	58	9
9	73	12	12	2	0
10	3	25	67	0	6
11	0	95	5	0	0
12	5	27	21	45	1
13	33	33	35	0	0
Median	19	27	13	5	0
Mean	25	38	19	15	3

% of catch (by number)					
Haul	Norway pout	Haddock	Whiting	Herring	Others
1	84	2	3	11	0
2	90	1	4	5	0
3	74	9	13	2	1
4	5	81	0	13	0
5	72	15	4	6	4
8	68	1	2	27	1
9	94	2	3	1	0
10	21	13	54	1	10
11	4	89	6	0	0
12	31	9	13	47	0
13	80	7	13	0	0
Median	72	9	4	5	0
Mean	57	21	11	10	2

Table 1. Catch composition from hauls with industrial Norway pout trawl

Numbers caught / hour						
Haul	ICES Rectangle	Norway pout	Haddock	Whiting	Herring	Others
3	46 F0	2,905	358	514	67	56
2	47 E9	14,550	210	690	750	0
4	47 F0	433	6,798	0	1,112	0
12	47 F0	1,562	454	638	2,318	0
13	47 F0	13,039	1,062	2,125	0	0
11	47 F1	330	6,732	462	0	0
1	47 E9	8,708	223	324	1,094	0
10	49 E8	2,214	1,353	5,576	123	1,066
5	49 F0	796	164	48	63	40
9	49 F0	4,943	108	150	66	0
8	50 F1	284	4	10	113	6

Table 2. Numbers of fish caught / fishing hour with industrial Norway pout trawl

% of catch (by weight)					
Haul	Norway pout	Haddock	Whiting	Herring	Others
14	8	14	59	0	28
16	1	51	41	0	0
17	1	51	20	0	25
18	0	39	11	0	50
Median	1	45	30	0	27
Mean	2	39	33	0	26

% of catch (by number)					
Haul	Norway pout	Haddock	Whiting	Herring	Others
14	46	14	66	0	8
16	12	49	33	0	0
17	15	22	32	0	5
18	4	56	25	0	15
Median	13	35	32	0	6
Mean	19	35	39	0	7

Table 3. Catch composition from hauls with whitefish trawl fitted with 20mm liner

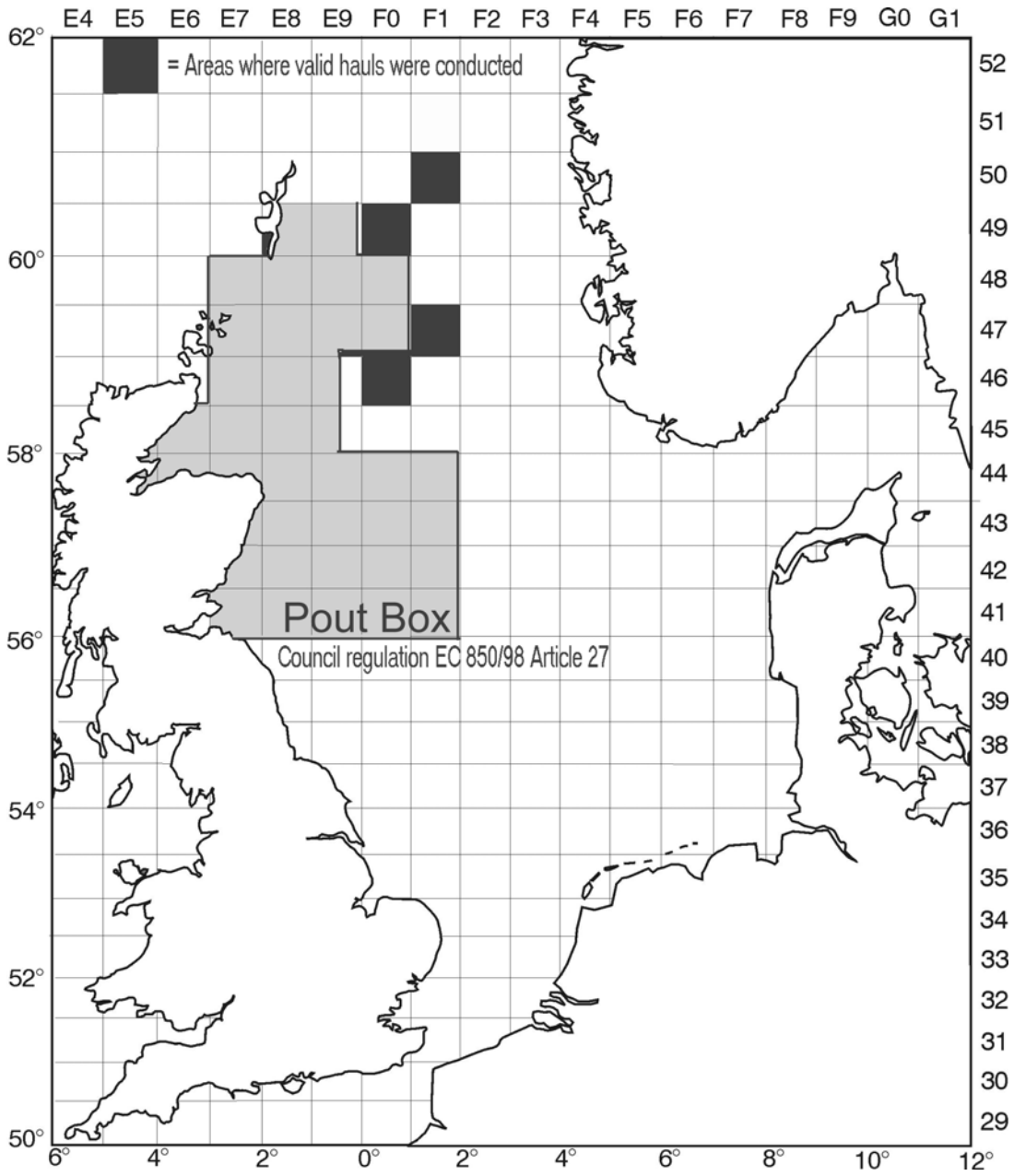


Figure 1. Location of sea trials

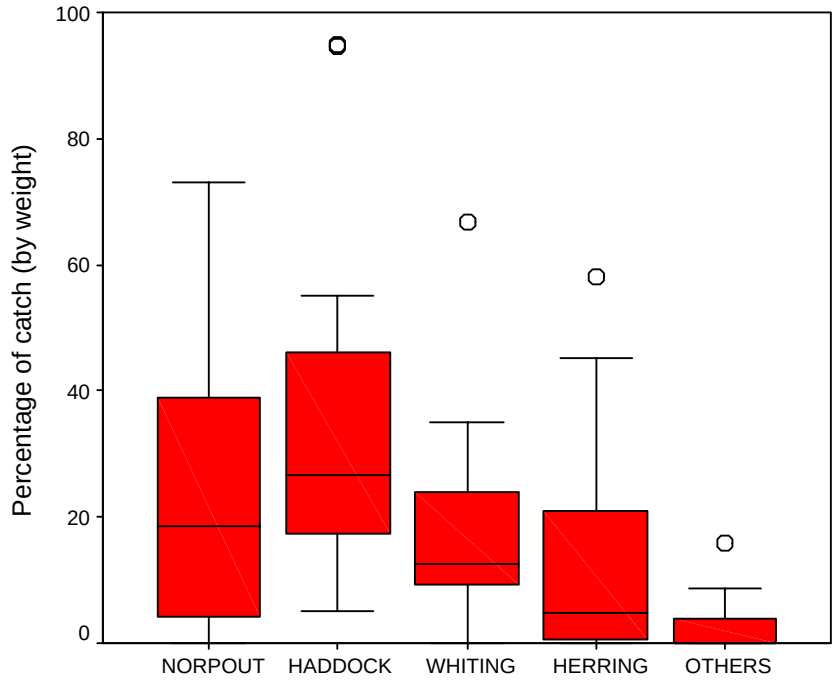


Figure 2. Catch composition (by weight) from hauls with industrial Norway pout trawl

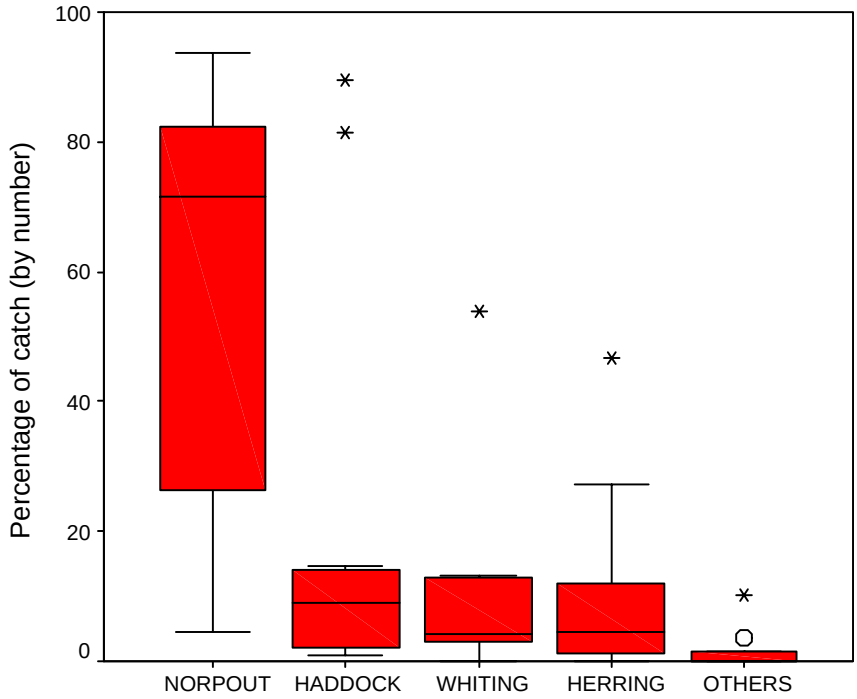


Figure 3. Catch composition (by number) from hauls with industrial Norway pout trawl

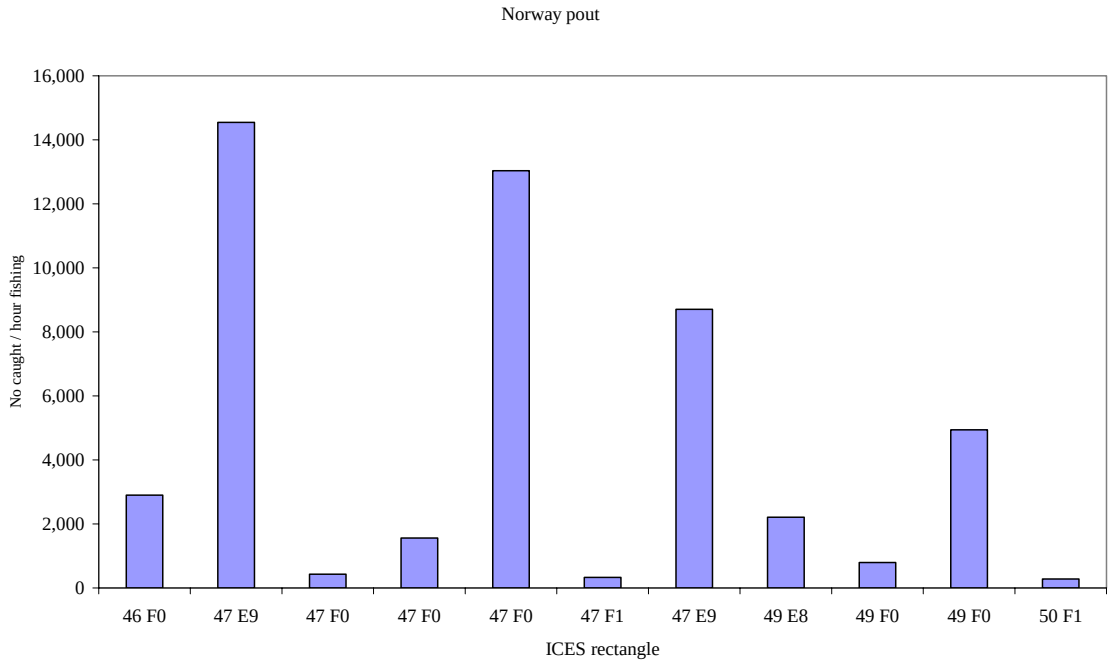


Figure 4. Catch rates of Norway pout per ICES rectangles during the 11 successful hauls conducted with the industrial Norway pout trawl

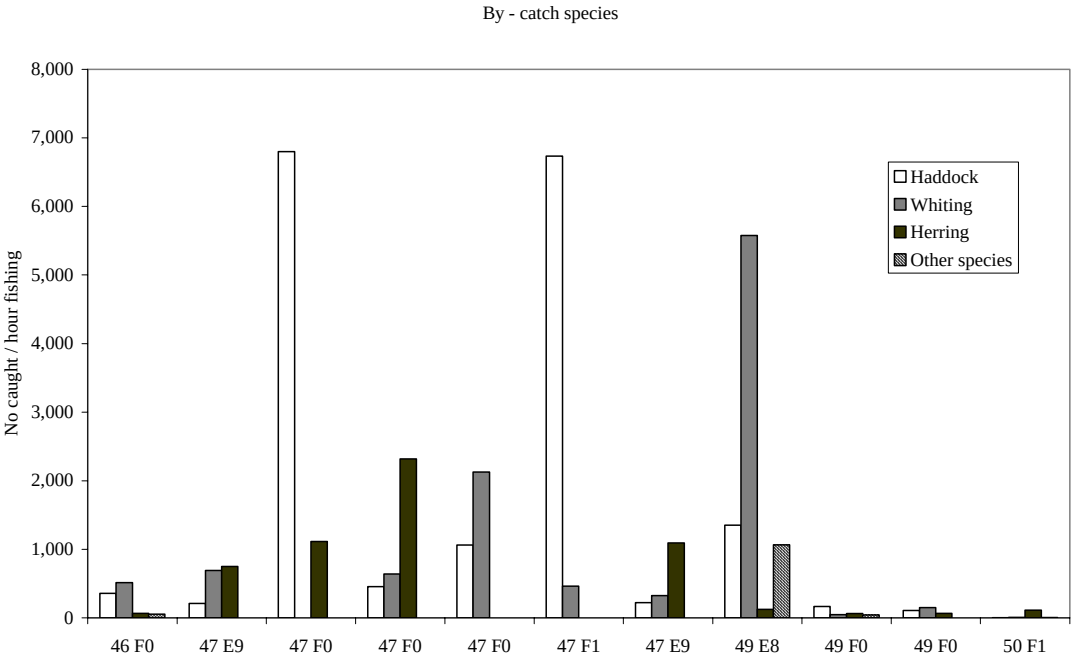


Figure 5. Catch rates of by-catch species per ICES rectangles during the 11 successful hauls conducted with the industrial Norway pout trawl

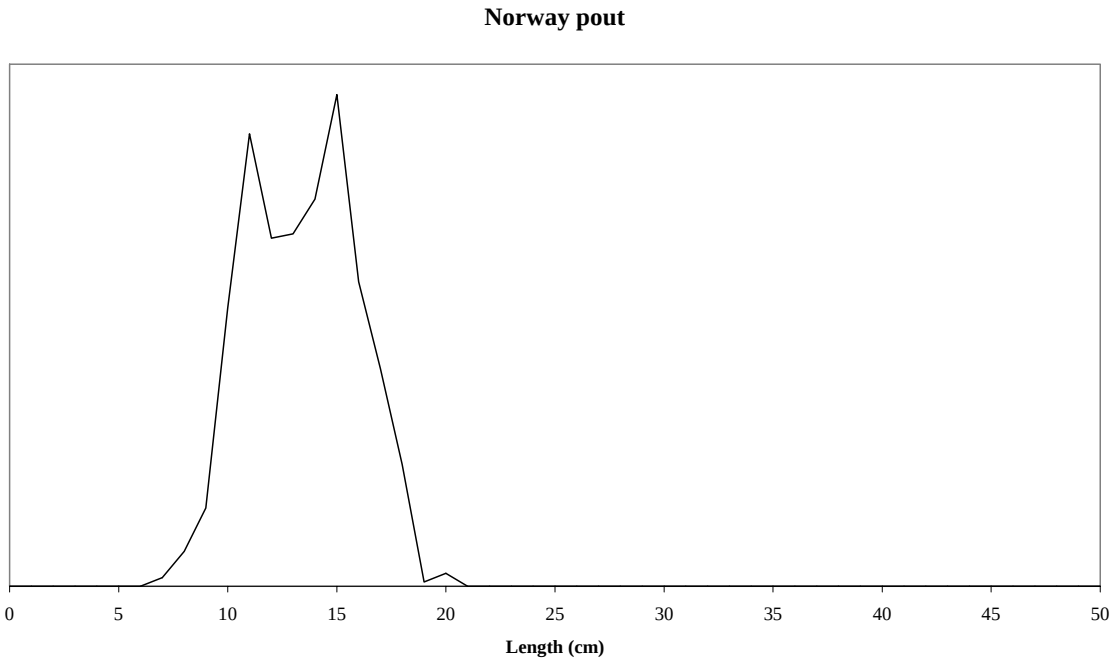


Figure 6. Pooled length – frequency distributions of Norway pout taken from hauls using industrial Norway pout trawl

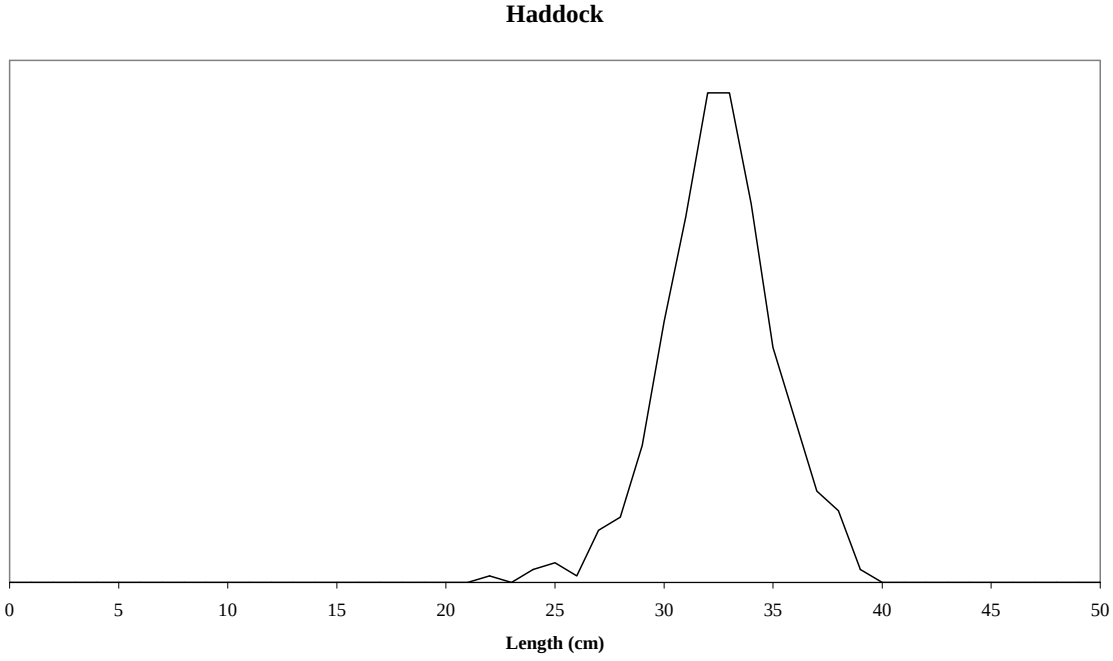


Figure 7. Pooled length – frequency distributions of Haddock taken from hauls using industrial Norway pout trawl

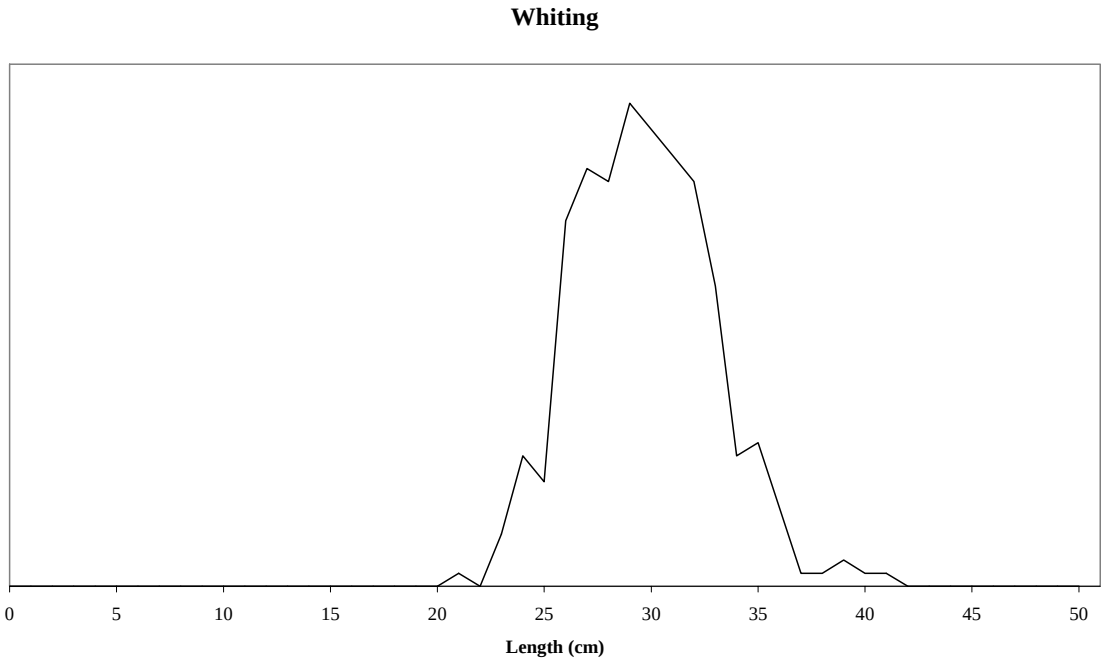


Figure 8. Pooled length – frequency distributions of whiting taken from hauls using industrial Norway pout trawl

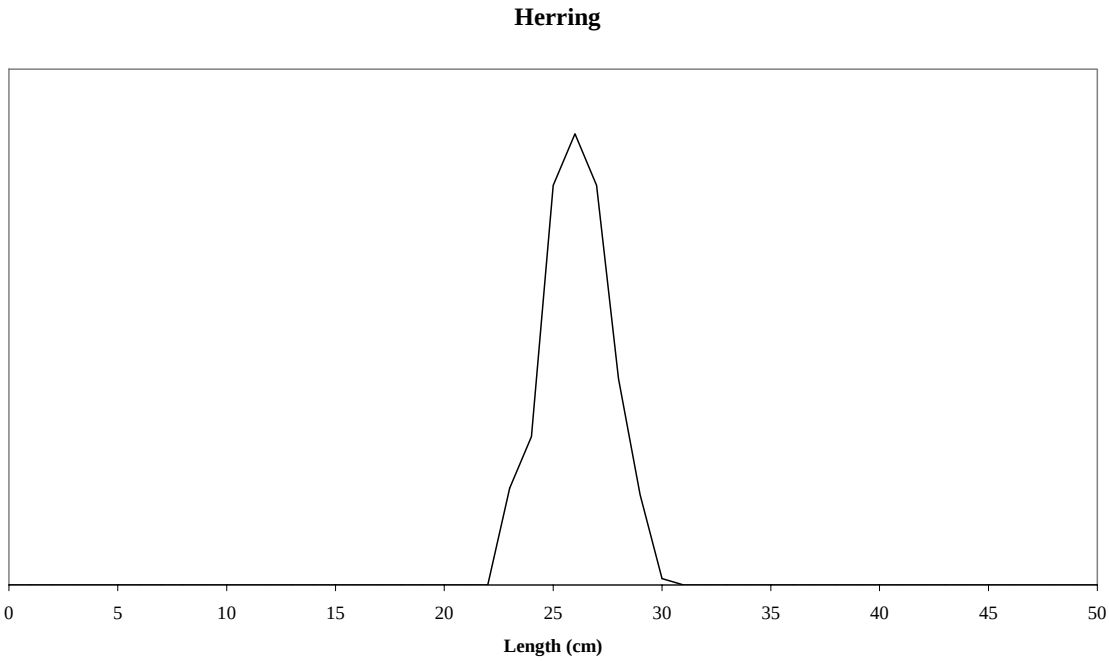


Figure 9. Pooled length – frequency distributions of herring taken from hauls using industrial Norway pout trawl

Sea trials with the whitefish trawl fitted with a 20mm cod end liner

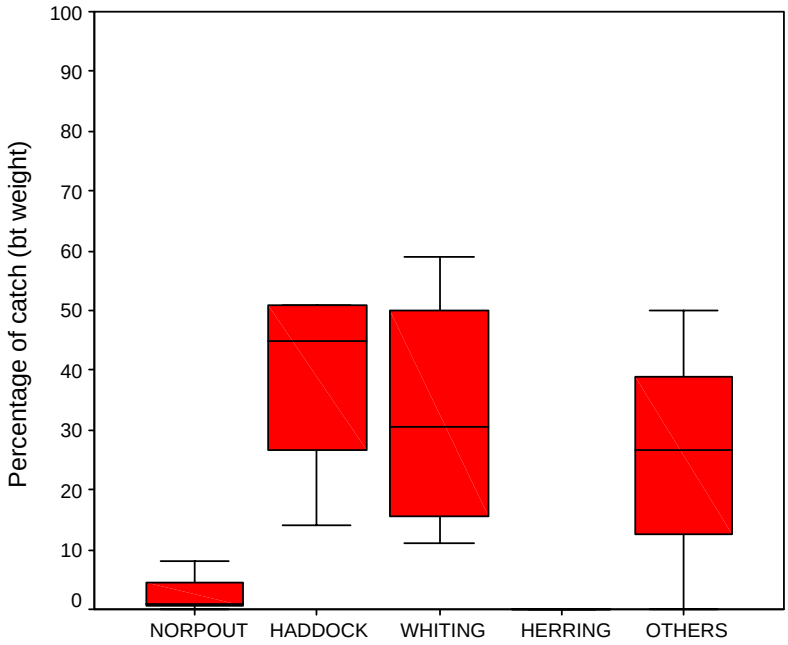


Figure 10. Catch composition (by weight) from hauls with whitefish trawl fitted with 20mm cod end liner

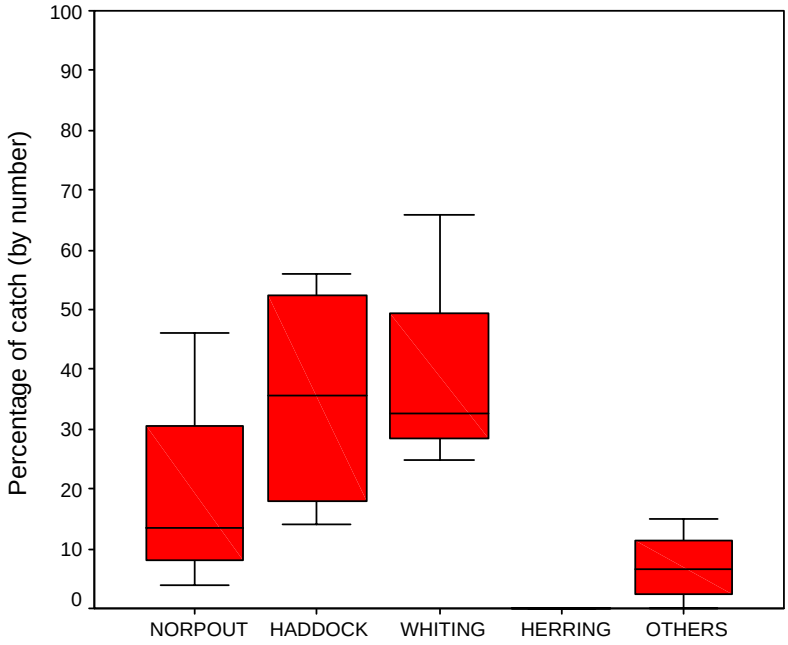


Figure 11. Catch composition (by number) from hauls with whitefish trawl fitted with 20mm cod end liner

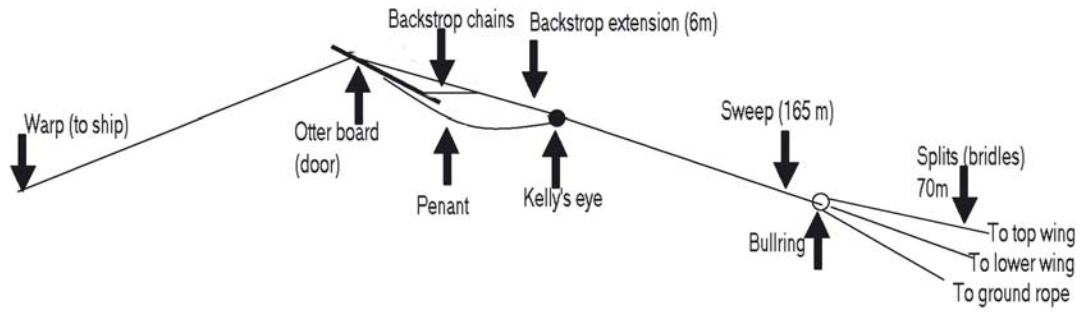
Appendix 1. Fishing vessel details

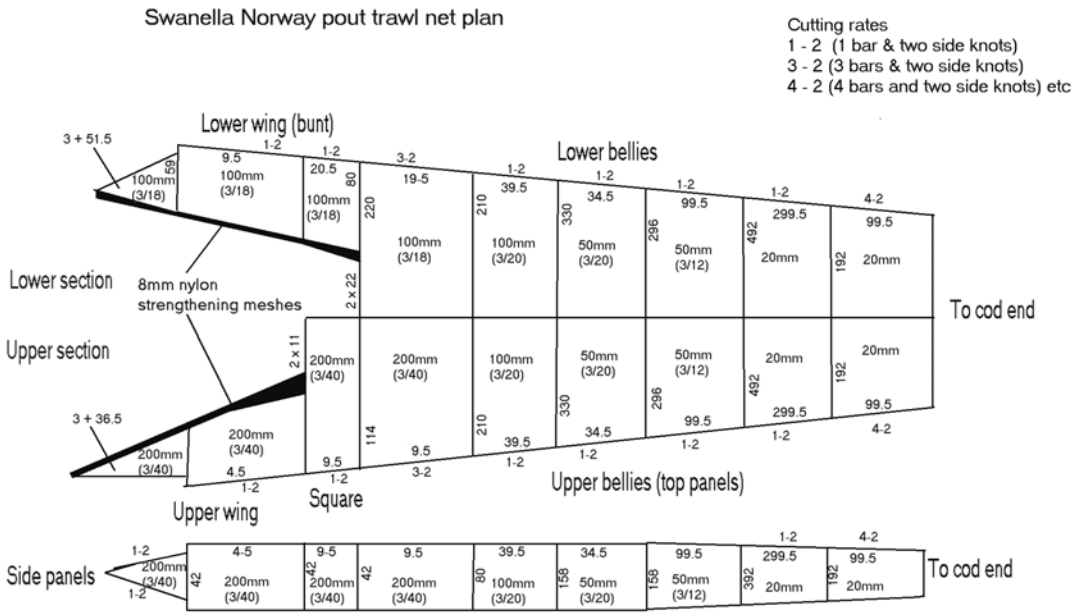
Item	Detail
RSS No	B 14074
Port registration No	H 1065
Port of registration	Hull, England
Vessel name	Swanella
Year of build	1989
Owner	J. Marr Limited, St Andrews Dock, Hull
Registered length	45.45 m
Length over all	53.10 m
Breadth	12.02 m
Gross tonnage	1,195 tonnes
Net tonnage	358 tonnes
Depth	6.5 m
Type of vessel	Stern ramp freezer / fresh trawler
Main engine power	1980 kW
Main engine power take offs	Shaft generator
Auxiliary engines	2 x 400 HP Mitsubishi engines
Propeller details	4 blade, 3.3m diameter propeller housed in Kort nozzle
Bow thruster	1 x bow thruster
Gear box reduction ratio	4.5: 1
Factory	Plate freezing fish factory
Crew No	Skipper, 1st Mate, 2nd Mate, Chief Engineer, 2nd Engineer, 5 crew, 1 cook, 1 trainee
Crew nationality	British
Usual fishing grounds	Northern North sea Icelandic waters Greenland waters Norwegian waters
Usual fishing patterns	5 – 10 weeks at sea 1 day in port for each week at sea
Usual target species	Cod Saithe Redfish
Bridge equipment	2 radars 2 plotters Depth sounder / fish finder Fish safe oil industry pipeline and rig plotter Scanmar gear sensors VHF /MF communications Autopilot Automatic winch control system V.M.S.
Fuel storage	300 m^3
Fuel consumption	6.5 m^3 per day when fishing
Fresh water storage	46 m^3

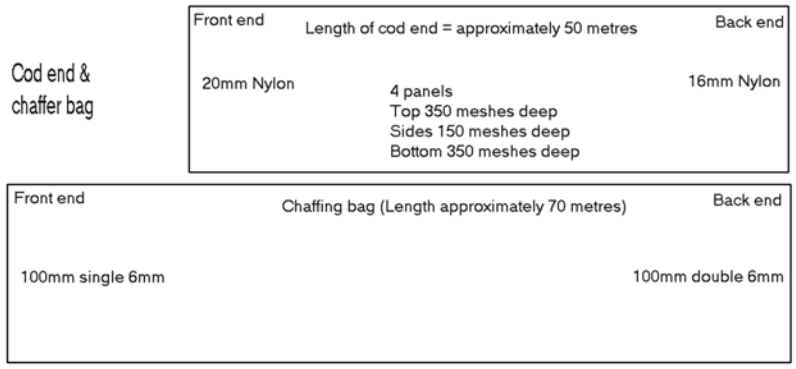
Appendix 2. Fishing gear details

Item	Detail
Type of trawl	Danish industrial demersal pout trawl
Sweeps	2 x 165 metres combination rope 24mm diameter
Bridles	6 x 70 metre bridles combination rope 28mm diameter
Head line	22mm combination stainless 6 groups of 8 floats (11 litres each)
Foot rope	22mm combination stainless
Ground rope	11mm wire stainless Length 21.5 metres
Rubber discs on ground rope	130mm diameter rubber discs separated by rubber spacers of 40mm diameter
Doors	2 x Perfect Multipatent 140 inch doors Manufactured by Perfect Trawlskovle, Esbjerg, Denmark Weight of single door (1,700 Kg)
Trawl sections (Full mesh size)	Front sections 200mm Mid sections 100 mm Mid sections 50 mm Mid sections 20mm Cod end 20mm
Chaffer bag	100mm 6mm single at front end / 100mm 6mm double at back end
Comments	Minor adjustments were made to the trawl rings on the cod end to adapt the trawl for stern ramp trawling as opposed to side trawling

Warp, door, sweep and bridle arrangement used with the Norway pout industrial trawl







Appendix 3. Haul details

Swanella (H1065) Norway Pout trip

Haul No	1		2		3		4	
Fishing Gear used								
Industrial demersal pout trawl	**X**		**X**		**X**		**X**	
Whitefish demersal trawl								
	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED
Date:	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/12/2003	06/12/2003	06/12/2003
Time:	3:15	4:45	5:40	7:30	12:15	14:40	7:45	6:00
Depth (Metres)		140		140		145		110
Speed over the ground (Knots)		3.5		5		3.5		3.7
Lat (Degrees):	59	59	59	59	58	58	59	59
Lat (Minutes):	14.4	14.3	14.4	11.5	32.9	31.6	20.5	26.3
North / South	N	N	N	N	N	N	N	N
Long (Degrees)	0	0	0	0	0	0	0	1
Long (Minutes)	22.7	13.0	14.5	21.9	9.6	26.8	6.3	9.3
East / West	W	W	W	W	E	E	E	E
Warp length (Metres)		490		490		490		410
Haul duration (Minutes)		80		110		145		100
Tow direction		E		W and SW		E		N
ICES statistical rectangle		47 E9		47 E9		46 F0		47 F0
Tide direction		S		W		SW		N
Tidal speed (Knots)		3		1.5		1.5		2.5
Wind force		5		5		6		5
Wind direction		W		W		W		N
Sea state		5		4		5		5
COMMENTS:								
	Outside pout box in recessed area		Outside pout box in recessed area		Outside pout box in recessed area. Gear skimming sea bed		Towing up Eastern edge outside of pout box going North	

Haul No	5		6		7		8	
Fishing Gear used								
Industrial demersal pout trawl	**X**		**X**		**X**		**X**	
Whitefish demersal trawl								
	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED
Date:	06/12/2003	06/12/2003	07/12/2003	07/12/2003	07/12/2003	07/12/2003	07/12/2003	07/12/2003
Time:	13:40	16:50	1:40	3:30	4:50	6:50	13:05	15:35
Depth (Metres)		135		150		153		130
Speed over the ground (Knots)		3.7		3.7		3.7		3.7
Lat (Degrees):	60	60	61	61	61	61	60	60
Lat (Minutes):	0.0	1.5	11.8	18.8	18.0	11.8	40.5	33.9
North / South	N	N	N	N	N	N	N	N
Long (Degrees)	0	0	1	1	1	1	1	1
Long (Minutes)	54.0	29.1	44.8	44.9	40.9	41.4	34.0	23.8
East / West	E	E	E	E	E	E	E	E
Warp length (Metres)		460		500		520		485
Haul duration (Minutes)		190		110		120		150
Tow direction		W		N		S		SW
ICES statistical rectangle		49 F0		51 F1		51 F1		50 F1
Tide direction		WSW		SW		S		SW
Tidal speed (Knots)		1.5		1.5		3		2
Wind force		5		5		5		5
Wind direction		Variable		SW		SW		SW
Sea state		5		4		4		4
COMMENTS:								
	Towing West on top edge outside of pout box		Catch less than 1 basket due to upturned and twisted sweeps		Damaged trawl - Nil fish			

Swanella (H1065) Norway Pout trip

Haul No	9		10		11		12	
Fishing Gear used								
Industrial demersal pout trawl	**X**		**X**		**X**		**X**	
Whitefish demersal trawl								
	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED
Date:	07/12/2003	07/12/2003	08/12/2003	08/12/2003	09/12/2003	09/12/2003	09/12/2003	09/12/2003
Time:	21:45	23:55	6:20	7:20	1:12	2:45	6:10	8:15
Depth (Metres)		140		125		110		135
Speed over the ground (Knots)		3.2		3.6		3.8		3.4
Lat (Degrees):	60	60	60	60	59	59	59	59
Lat (Minutes):	12.9	6.5	0.0	0.3	24.6	18.2	14.9	8.4
North / South	N	N	N	N	N	N	N	N
Long (Degrees)	0	0	1	1	1	1	0	0
Long (Minutes)	10.5	15.9	33.0	32.7	0.6	0.6	22.7	16.4
East / West	E	E	W	W	E	E	E	E
Warp length (Metres)		500		430		410		440
Haul duration (Minutes)		130		60		100		125
Tow direction		SE		N		S		SW
ICES statistical rectangle		49 F0		49 E8		47 F1		47 F0
Tide direction		SE		E		S		S
Tidal speed (Knots)		2.5		2.5		3.5		4
Wind force		5		4		4		6
Wind direction		SW		S		S		SSW
Sea state		4		3		3		5
COMMENTS:								
			West of Shetland on outside edge of pout box		Western perimeter of pout box		Outside pout box in recessed area	

Haul No	13		14		15		16	
Fishing Gear used								
Industrial demersal pout trawl	**X**				**X**			
Whitefish demersal trawl			**X**				**X**	
	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED	SHOT	HAULED
Date:	09/12/2003	09/12/2003	09/12/2003	09/12/2003	10/12/2003	10/12/2003	11/12/2003	11/12/2003
Time:	11:15	14:40	16:25	22:35	18:20	19:50	6:15	11:15
Depth (Metres)		130		135	125	130	135	220
Speed over the ground (Knots)		3.3		3.3		3.2		4
Lat (Degrees):	59	59	59	59	57	57	58	58
Lat (Minutes):	13.1	4.6	4.3	20.8	50.6	54.2	43.6	59.7
North / South	N	N	N	N	N	N	N	N
Long (Degrees)	0	0	0	0	0	0	0	0
Long (Minutes)	28.7	45.1	40.1	20.2	37.3	44.1	4.2	17.9
East / West	E	W	W	W	E	E	E	W
Warp length (Metres)		480		480		360		485
Haul duration (Minutes)		205		370		90		300
Tow direction		SW		NE		NE		NW
ICES statistical rectangle		47 F0		47 F0		44 F0		45 F0
Tide direction		SSE		S		NNE		SW
Tidal speed (Knots)		3		2		3		1.5
Wind force		6		7		6		4
Wind direction		SSW		SSW		SSW		NW
Sea state		5		6		5		3
COMMENTS:								
	Entered pout box at 1200 at 59.10N, 00.30W		Inside pout box. Towing over the same tow as haul No 13 using a whitefish trawl		Cod end detached and lost when hauling up stern ramp. Large catch of mackerel and ? pout in cod end. Mackerel probably caught during hauling		Trawled in deep trench (200 - 250 m)	

Swanella (H1065) Norway Pout trip

Haul No	17		18	
Fishing Gear used				
Industrial demersal pout trawl				
Whitefish demersal trawl	**X**		**X**	
	SHOT	HAULED	SHOT	HAULED
Date:	11/12/2003	11/12/2003	12/12/2003	12/12/2003
Time:	12:05	15:10	9:10	14:10
Depth (Metres)	260	142	140	138
Speed over the ground (Knots)		4		4.2
Lat (Degrees):	59	59	60	60
Lat (Minutes):	2.6	2.6	9.9	22.2
North / South	N	N	N	N
Long (Degrees)	0	0	0	0
Long (Minutes)	20.6	28.6	36.0	13.3
East / West	W	W	E	E
Warp length (Metres)		730/480		500
Haul duration (Minutes)		185		300
Tow direction		NW (2hr) SE (1hr)		SW
ICES statistical rectangle		47 E9		49 F0
Tide direction		S		SW
Tidal speed (Knots)		2.5		2.5
Wind force		3		3
Wind direction		NW		Variable
Sea state		2		3

COMMENTS:

In deep trench for first two hours then followed in the track of a Danish Industrial Pout trawler (E630)

Appendix 4: Plates

The Swanella (H1065)

Industrial Norway pout trawl with catch

Examples of catches obtained with the industrial Norway pout trawl

Haul 3

Haul 5

Haul 12

Haul 13

One basket of separated catch taken from hauls with the industrial Norway pout trawl

Haul 2

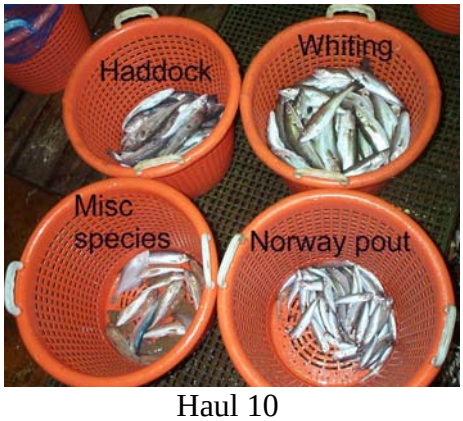
Haul 3

Haul 5

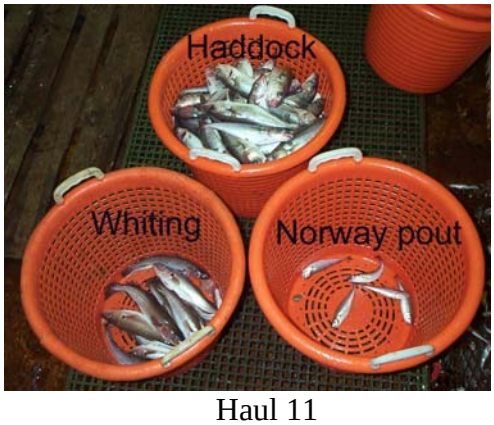
Haul 6

Haul 8

Haul 9



Haul 10



Haul 11