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The By-catch in the Shrimp Fishery of Iceland at Flemish Cap in 1996 and 1997

by

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Introduction

The bycatch in the shrimp fishery at Flemish Cap has become less serious when the distance between bars in the Nordmoor grate were reduced from 28 mm to 22 mm. The Icelandic observer scheme was initiated in January 1996. Since then there have been one observer per each Icelandic shrimp vessel observing the catch. The data here are only preliminary data as only small amount of the bycatch data have been worked up as yet for the year 1996. All the data available for 1997 have been worked up, but these are also preliminary as it is known that 6-7 Icelandic vessels are now fishing at Flemish Cap but have not been fishing long enough to be able to send the data to Iceland.

Material and methods

In the shrimp fishery all vessels use a trawl with mesh size 40 mm (open mesh) in the codend. The use of sorting grid so-called Nordmoor grate is compulsory. There is distance of 22 mm between bars thus allowing only a few fish of the smallest fish to enter the codend.

Apart from doing shrimp samples a large sample (ca 60 kgs) is taken from the unsorted catch. From this the number of redfish, greenland halibut and wolffish were counted and weighed. The catch of shrimp from the same sample was then weighed. From this sample and the total catch of shrimp in the haul the total number and weight of each species was then calculated.

Observer data

The redfish was not divided into species as the observers were not capable of carrying out such a difficult task. No cod was seen in 1996 nor 1997. The american plaice was only looked for in 1997. So far no american plaice has been detected.

Redfish was present in almost every haul in 1996 or from 0.8 % to 3.3 % per month (Table 1), but in 1997 there were many hauls without any redfish, the occurrence being 0.4 % to 0.6 % of the total catch (Table 2). Figure 1 shows the length distributions of redfish by every three months in the years 1996 through 1997. It appears that there is a prominent yearclass of redfish all species mixed together which is about 7 cm in January - March 1996 and 10.5 cm in January -February 1997.

Greenland halibut was rare as bycatch, ranging from 0.1-0.4% in 1996 and from 0-0.1% in 1997 (Tables 3 and 4). Wolffish was more prevalent than greenland halibut, being 0.3-1.6% in 1996 (Table 5). In 1997 wolffish was about 0.3% (Table 6).

As the data are here scanty the overall for the whole year is more descriptive, namely 1.6% for redfish in 1996, 0.3 % for greenland halibut and 1.1% for wolffish. The data for year 1997 are too few as yet but there appears to be less bycatch than in 1996.

Table 1. Redfish bycatch by months in 1996.

Month	Hauls Number	Redfish		Shrimp	Redfish	
		Weight kg	Number	Weight kg	Weight %	Number per 1000 kg shrimp
January	23	860	21427	56295	1.50	381
February	37	534	11687	68902	0.77	170
March	164	3707	158908	443692	0.83	358
April	509	11735	355778	1044326	1.11	341
May	405	13027	244844	751997	1.70	326
June	336	13291	235498	711976	1.83	331
July	151	7212	102344	254945	2.75	401
August	81	3331	46951	122611	2.64	383
September	41	1051	35516	37374	2.74	950
October	39	627	12208	32391	1.90	377
November	48	1565	18756	45784	3.31	410
December	53	1056	13667	48598	2.13	281
Σ 1996	1887	57996	1257584	3618871	1.58	348

Table 2. Redfish bycatch by months in 1997.

Month	Hauls Number	Redfish		Shrimp	Redfish	
		Weight kg	Number	Weight kg	Weight %	Number per 1000 kg shrimp
January	29	213	7971	33263	0.64	240
February	37	154	8802	40467	0.38	218
March						
April	18	139	6870	37945	0.36	181
May	20	220	5770	40342	0.54	143
Σ 1996	104	726	29413	152017	0.48	193

Table 3. Greenland halibut bycatch by months in 1996.

Month	Hauls Number	Greenland halibut		Shrimp	Greenland halibut	
		Weight kg	Number	Weight kg	Weight %	Number per 1000 kg shrimp
January	4	33	680	8198	0.40	83
February	5	32	964	11977	0.27	80
March	27	330	8074	76164	0.43	106
April	225	1709	30729	457809	0.37	67
May	207	1318	15658	347196	0.38	45
June	142	738	8264	287199	0.26	29
July	113	310	3551	167539	0.18	21
August	70	104	22876	125734	0.08	182
September	114	415	4921	166546	0.25	30
October	61	134	1028	78762	0.17	13
November	40	35	363	46669	0.07	8
December	32	40	518	44103	0.09	12
Σ 1996	1040	5198	97626	1817696	0.29	54

Table 4. Greenland halibut bycatch by months in 1997.

Month	Hauls Number	Greenland halibut		Shrimp	Greenland halibut	
		Weight kg	Number	Weight kg	Weight %	Number per 1000 kg shrimp
January	27	25	175	32598	0.08	5
February	37	2	43	43004	0.00	1
March						
April	18	49	511	37948	0.13	13
May	21	31	953	40342	0.08	24
Σ 1996	103	107	1682	153892	0.07	11

Table 5. Wolffish bycatch by months in 1996.

Month	Hauls Number	Wolffish		Shrimp	Wolffish	
		Weight kg	Number	Weight kg	Weight %	Number per 1000 kg shrimp
March	42	2707	75197	127542	2.08	590
April	112	5067	128630	306320	1.63	420
May	48	727	20976	110660	0.85	190
June	63	811	24621	131120	0.61	188
July	62	995	28892	124242	0.79	233
August	31	838	17680	50161	1.64	352
September	47	557	8284	93449	0.59	89
October	42	286	15987	61600	0.46	260
November	25	76	1243	29093	0.26	43
December	26	220	3052	29013	0.75	105
Σ 1996	498	12284	324562	1063200	1.14	305

Table 6. Wolffish bycatch by months in 1997.

Month	Hauls Number	Wolffish		Shrimp	Wolffish	
		Weight kg	Number	Weight kg	Weight %	Number per 1000 kg shrimp
January	27	83	1522	32598	0.25	47
February	37	133	2986	44111	0.30	68
March						
April	18	136	3300	37947	0.36	87
May	20	106	2674	40342	0.26	66
Σ 1996	102	458	10482	154998	0.29	68

Redfish 3M

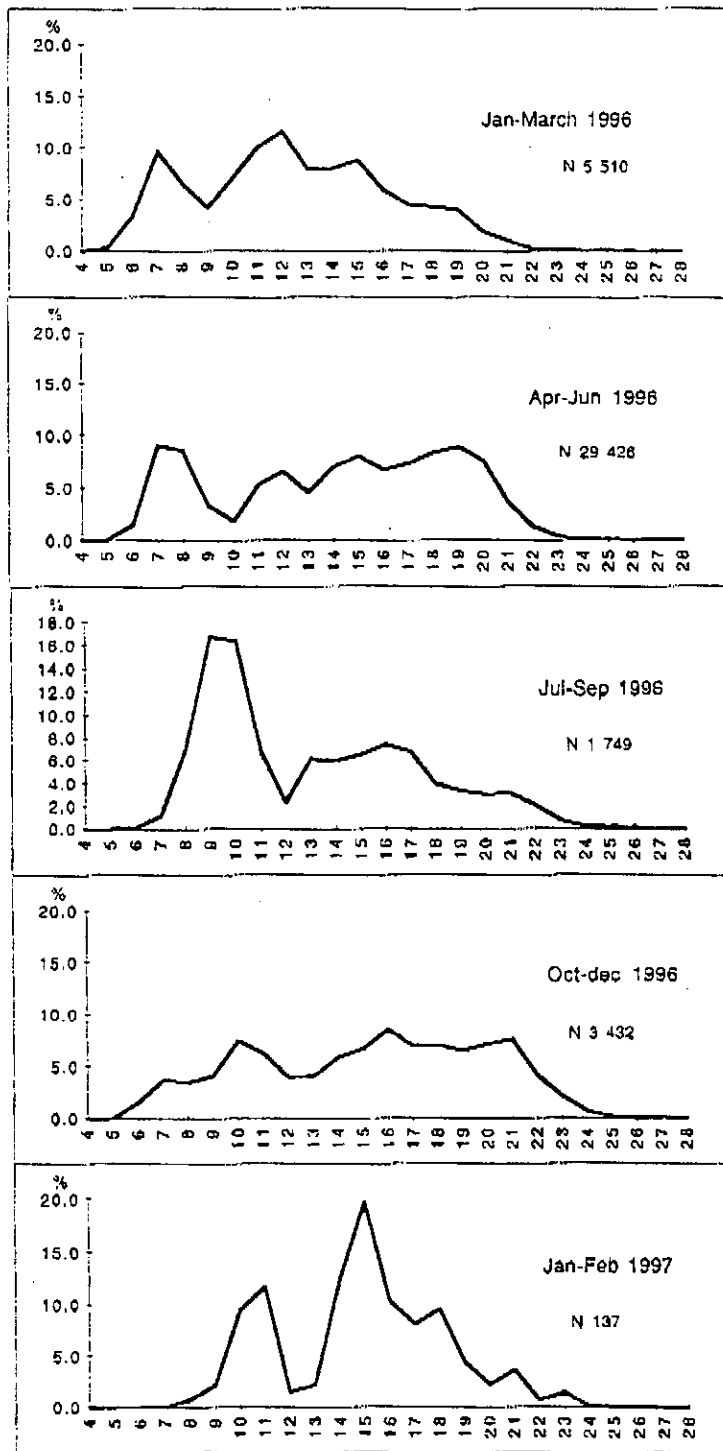


Fig. 1. Length distributions of redfish caught in a shrimp trawl after passing through a 22 mm sorting grate.