

International Council for the
Exploration of the Sea

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Demersal Fish (Northern) Committee



REVIEW OF SAITHE, POLLACK, DOGFISHES AND SHARKS

WITHIN THE NEAFC CONVENTION AREA

This Report has not yet been approved by the International Council for the Exploration of the Sea; it has therefore at present the status of an internal document and does not represent advice given on behalf of the Council. The proviso that it shall not be cited without the consent of the Council should be strictly observed.

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1. SAITHE*

1.1 Saithe in Sub-Areas I and II

1.1.1 Life history

Saithe in the North-East Arctic region spawn chiefly in February-March at 150-200 m depth. The most important spawning grounds are Svinøy area, the Halten Bank and the Lofoten area.

Eggs, larvae and juveniles are transported to the north and east, and by the end of August the juveniles are distributed in the shore region from Svinøy to the Murman coast.

The young saithe gradually migrate away from shore towards deeper water. At 4-7 years of age they recruit to the spawning stock. A spawning migration to the southern spawning grounds starts in November-December. After spawning there is no clear migration pattern, but most of the individuals probably return to northern Norway during spring.

The North-East Arctic stock of saithe is restricted chiefly within the Norwegian 200-mile fisheries zone. Its distribution extends slightly into the Soviet fisheries zone. Mature individuals migrate to some extent to the North Sea to spawn and in recent years there has been a considerable migration of young saithe from the Svinøy area to the North Sea. Migration of adult saithe to Icelandic waters appears to have been extensive in some years. At present, however, the rate of recaptures from Iceland is not very high.

1.1.2 Fisheries and regulations

Except for Norwegian catches, practically all saithe in the North-East Arctic are caught by trawl, partly as by-catch in fisheries for cod and haddock. On the spawning grounds, trawling is conducted mainly by the German Democratic Republic, the Federal Republic of Germany and Norway. These countries also fish for young saithe in the Svinøy area during the rest of the year. The remaining trawl landings are mostly from northern Norway.

Purse seine, which chiefly exploits 2-4 year old fish, accounts for about 60% of the Norwegian catches. The rest is taken mainly by trawl, hand-line, gill-net and Danish seine.

In 1976 NEAFC introduced a minimum landing size for saithe of 35 cm in the whole North-East Arctic except in the area between 62°N and 64°N where the minimum landing size was set at 30 cm. The effects of the minimum size have so far been small. Previously, there was no international regulation of the saithe fisheries.

In Norway it has since 1965 been forbidden to land or catch saithe for other use than human consumption and bait.

1.2 Saithe in Division IIIa and Sub-Area IV

1.2.1 Life history

The North Sea saithe spawn in February-March at 150-200 m depth on the northern North Sea plateau north of about 61°N. The spawning is confined

* For saithe outside Sub-Areas VII and VIII, descriptions of exploitation and state of the stocks are given in the general part of the "Saithe (Coalfish) Working Group Report". Landings 1966-76 are given in Tables 2-6.

chiefly to areas near the slope of the shelf, and the spawning grounds are probably continuous, although spawning appears to be most intensive in the Tampen area and to the north and west of Shetland.

The distribution of eggs, larvae and juveniles is not known in detail. However, observations on the distribution of juvenile saithe pelagically and in the shore regions added to what is known about the prevailing water current system of the North Sea in winter and spring, indicate the following basic pattern: eggs, larvae and juveniles from spawning in the Shetland area are transported chiefly southwards along the eastern coasts of the British Isles and the juveniles are finally distributed in the shore region of Shetland, Orkney and the east coast of Scotland and northern England. From the Tampen area the transportation is basically southward along the western side of the Norwegian Deep which at some later stage is traversed. Most of the juveniles are finally distributed in the littoral region of the Norwegian west coast. Less regularly, and usually in relatively small numbers, 0-group saithe may occur on the Norwegian Skagerrak coast.

The saithe mainly stay in inshore waters until 2-3 years of age after which they migrate to areas of 100-200 m depth. Tagging experiments show that most of the young saithe from western Norway south of 62°N migrate to the eastern part of the North Sea plateau, especially to the area between 58°N and 61°N. There are indications that the saithe from the British coasts migrate basically to areas on the western side of the North Sea, although there is a considerable mixing at this stage with fish from the eastern side.

Recaptures of young saithe tagged in the North Sea area are occasionally made outside Sub-Areas III and IV, but migration of immature saithe away from the North Sea is probably not very extensive. However, tagging experiments from the Norwegian coast north of 62°N, i.e. in Division IIa, indicate that in recent years young saithe from the area between 62°N and about 65°N also chiefly migrate to the North Sea, mostly the northern and eastern parts, whereas 20 years ago their migration pattern was more northerly directed. This change, which seems to be connected with a decreasing age of migration away from inshore waters, may be an expression of long-term variations in the life history of saithe on the Norwegian coast, in which case the present migration pattern could be expected to be reversed sometime in the future.

In all probability, the young saithe in the North Sea are recruited mainly to the spawning stock on the northern part of the plateau. The migration pattern of the spawning stock is poorly known, but at least part of the stock remains on the plateau outside the spawning season. Apparently, most of the spawning stock return to the North Sea spawning grounds year after year. On the other hand, tagging experiments have shown that saithe from northern Norway also contribute to the spawning population in the northern North Sea, especially in the Tampen area.

The borderline between the Norwegian and EEC fisheries zones stretch across the Tampen spawning ground. Thus, probably about 2/3 of the spawning area is inside the EEC fisheries zone. On the other hand, the 0-group pelagic gadoid surveys have generally given higher numbers of 0-group saithe in the Norwegian zone. However, information on the detailed distribution of spawning grounds and of 0-group fish is at present very limited.

1.2.2 Fisheries and regulations

The saithe in the North Sea is caught chiefly by trawl which normally accounts for 90-95% of the landings. The rest is taken mainly by Norwegian purse-seine and gill-netters. In the trawl fisheries, more than 10 countries participate. The fleets operate generally all the year round, but some tend to concentrate on the spawning season.

There has also been reported considerable landings of saithe in industrial trawl fisheries, in 1976 about 20% of the total, which are chiefly taken in the southeastern part of Division IVa and the north-eastern part of Division IVb.

The saithe landings from the North Sea have increased from about 30 000 tons (not including industrial trawl) around 1960 to 340 000 tons in 1976.

From 1976 an international minimum landing size of 30 cm is applied to saithe in the North Sea region.

1.3 Saithe in Division Va

1.3.1 Life history

The distribution of saithe is restricted to the shelf all around the coast of Iceland. Spawning takes place in the warmer waters off the SW-coast in early spring starting in February with a peak in March and the spawning is over by the beginning of April.

Eggs and larvae drift with the current system clockwise around the island. In May and June the fingerlings of 4-6 cm length seek the inshore areas and are often found in shoals in very shallow waters close to the shore. The next 2-3 years the saithe stay in these waters more or less pelagically. At the age of 3-4 years they move to deeper waters but are still pelagic in their behaviour. Saithe become mature at the age 5-6. The saithe which have grown up in the cold water area off the north and east coasts of the island migrate to the spawning places off the SW-coast in late autumn and early winter. After the spawning the adults migrate mainly along the west coast to the feeding grounds off the NW-coast of Iceland. During summer the mature part of the stock feeds there. A part of the mature stock also feeds off the SE-coast. The immature part of the stock has feeding grounds off the NW-, N-, SE-, and SW-coasts of the island.

The main food of the younger immature saithe are euphausiids and other pelagic crustaceans whereas the older saithe also feed on fish like capelin, herring, cod, etc.

Tagging experiments at Norway have shown that saithe have migrated from Norway to Iceland, sometimes on a large scale. This view has been supported by comparison of age composition data. Emigration from Iceland to other areas is known, but according to tagging experiments at Iceland only 1% of the recaptures came from other areas. Comparison of age composition data from Iceland and the Faroes suggest that emigration from Iceland to Faroe may take place at least among the oldest age groups. No detailed information on the rate of these migrations to or from Iceland is yet available.

1.3.2 Fisheries and regulations

In Iceland saithe is caught with different gears, but most of the catches come from the trawl fishery, which takes place all the year round off the southeastern, southern, western and northwestern coasts of Iceland. During autumn and early winter gill-net fishery for saithe takes place off the south coast. During summer some fishing with hand-lines is carried out off the southwestern coast (2-3% of the total landings).

During the period 1960-71 catches increased from 50 000 to 137 000 tons, but have since then declined to 80 000 tons in 1976 due to low recruitment in recent years. The fishing intensity on the younger age groups is, in comparison to other stocks of saithe, relatively low.

Fishery on saithe in Icelandic waters is regulated by heavy restrictions on purse-seining, closure of a nursery area off the southeast coast of the island, and a minimum landing size of 50 cm.

Since 1 February 1977, 155 mm cod end mesh size has been in force inside the Icelandic 200-mile fishery jurisdiction zone.

1.4 Saithe in Division Vb

1.4.1 Life history

The Faroese saithe is the largest stock of commercially important species in the area, and is found on the plateau, on the offshore banks and also feeding pelagically over deep water.

Spawning starts in February especially at depths between 100 and 200 m, reaches its maximum in late March and ends in April/May. The main spawning areas are the banks to the east of Faroe, especially Sandøy Bank.

The pelagic eggs and larvae are distributed all around the islands by the dominant anti-clockwise current system. During May the larvae start a migration towards inshore areas and by July all the 0-group saithe are concentrated in the littoral zone. Here they remain during the first year, but after that they migrate out of the fjords and in their 3rd and 4th years they migrate to more offshore areas. As they mature (5-7 years), they enter the spawning stock. The spawning migration is not very well defined but there seems, from the fishery, to be a migration starting in January from deeper water to the northeast of the islands to the spawning grounds east of the islands.

Tagging of 2 year old saithe in the early 1960s showed some migration from the Faroe area to Iceland, and saithe tagged in Norway, and north of Britain have been recaptured in the Faroe area, but the tagging experiments do not allow for a quantification of the migration to and from the Faroese waters.

1.4.2 Fisheries and regulations

The main saithe fisheries have in recent years been the French trawl fishery, the United Kingdom trawl fishery and the trawl fishery of the Federal Republic of Germany. Norway has a small gill-net fishery. In Faroes the main gear has been hand-line.

The French and German fishery takes place mainly in deeper waters, while the others are closer to the shore. The main season is from November to June.

The inshore distribution of the younger age groups has a great conservational value and protects the stock from growth overfishing. The stock seems to have been fully exploited only in more recent years (1972-74), and in 1975 and 1976 catches have gone down again, due to reduced effort.

The "Arrangement relating to Fisheries in the Waters around the Faroes" was designed to limit the expansion of fishing for saithe in the Faroe area.

1.5 Saithe in Sub-Area VI

1.5.1 Life history

The saithe stock west of Scotland (Sub-area VI) is one of the smaller saithe stocks and currently yields around 30 000 tons per annum. The stock is distributed over the whole of the continental shelf area to the north and west of Scotland with only minor parts of the stock occurring beyond the shelf on the oceanic banks.

Saithe spawn extensively off the north coast of Scotland and to the northwest of the Hebrides. The Clyde estuary forms a small separate spawning area, but the saithe probably do not form a distinct stock. After spawning the saithe disperse over the area to the west of Scotland, the adult saithe occurring in the deeper water towards the edge of the shelf west of the Hebrides whilst the juvenile fish have a more inshore distribution.

There is probably some mixing between the various saithe stocks but there is no evidence on the extent of mixing of the west of Scotland saithe with stocks in other areas. It is thought that the saithe west of Scotland can be regarded as a distinct stock, although there is no clear division between the West of Scotland and North Sea stocks.

1.5.2 Fisheries and regulations

Reported landings of saithe from this area were low (around 10 000 tons) prior to the early 1960s after which landings increased to around 18 000 tons per annum, with increased landings by France and Scotland. There was a further marked increase in landings in the 1970s to over 30 000 tons, as a result of expansion of the French fishery. The French fishery exploits mainly the adult stock on the spawning and feeding grounds to the north and west of the Hebrides whilst the Scottish fishery exploits both the adult and the inshore juvenile stocks.

1.6 Saithe in Sub-Areas VII and VIII

Saithe is caught west of Ireland and in decreasing quantities southwards to the Bay of Biscay. 0-group saithe have been observed on the west coast of Ireland and spawning probably takes place in the banks west of Ireland.

The total catches of saithe from Sub-areas VII and VIII have averaged about 10 000 tons, but have declined in recent years (Appendix Tables 1-2).

2. POLLACK

2.1 Life history

The pollack spawn chiefly in February-May in coastal waters at about 100 m depth. Spawning grounds are found in the Bay of Biscay, along the western coasts of the British Isles, at Faroe, in the northern and central North Sea, in Skagerrak and off the Norwegian west coast.

Drift of eggs and larvae is poorly known. Juveniles seem to be distributed chiefly in the shore regions near the spawning grounds. On the Norwegian coast 0-group pollack have been found in large numbers as far north as Lofoten.

The general distribution of the species coincides with the spawning areas except for extensions to the south and north.

2.2 Fisheries and regulations

The pollack are caught chiefly as a by-catch in trawl fisheries. On the Norwegian southwest coast there is a small trap-net fishery for pollack. Pollack does not usually form schools and seem to prefer rocky ground. This makes the species less vulnerable to most gears than e.g. saithe, and it may therefore be more numerous than the landings indicate.

Landings of pollack are small. The highest catch figures are from the North Sea and Skagerrak, where catches at present are at a level of about 60% of the catches in 1966-68. Catches in other areas show no clear trends (Appendix Tables 4-7).

No regulations have been applied to the pollack fisheries.

3. DOGFISHES AND SHARKS*

3.1 Spurdog (*Squalus acanthias*)

3.1.1 Life history

The spurdogs give birth to their young in winter in relatively shallow water, apparently with no other preference for area. Mating takes place shortly after.

The spurdog is distributed round the world in sub-tropical and boreal waters. In the North-East Atlantic Ocean its distribution is from Senegal to the Barents Sea and Iceland. In European waters the spurdog is most numerous in the North Sea and around the British Isles.

The spurdog is a gregarious fish. Schools may be composed of 1) large mature females, 2) medium-sized fish, mainly one sex, 3) immature fish of both sexes.

Tagging experiments show several long-distance migrations. Spurdogs tagged on the Norway coast and on the banks north of Scotland have been recaptured in the Barents Sea, at Faroe, at Iceland, in the North Sea, in Kattegat, in Irish waters and in the Bay of Biscay. Migration patterns seem to have changed over the years.

A transatlantic migration from north of Scotland has been reported from Newfoundland, and a Canadian tag was recaptured at Shetland. A few recaptures from both North America and western Europe have been reported from Iceland.

English and Norwegian scientists have held different opinions on whether the spurdog in western European waters is comprised of several stocks or not. The English view has been that there are three main stocks: a Scottish-Norwegian stock (western Norway south of 64°N - Shetland/Hebrides), a Channel stock (southern North Sea - English Channel - south coast of Brittany), and an Atlantic stock (Brittany - Land's End - southern Ireland - Norway coast north of 64°N). A fourth stock south and west of Ireland and several coastal stocks have also been suggested. The Norwegian view has been that all these should be considered as one stock.

The spurdog is ovoviviparous. The gestation period is nearly two years. Ripe eggs are ready for fertilization soon after the young are born. A litter consists of 4-10 pups of 25-30 cm length. The sex ratio in the litter is about 1:1.

Sexual maturity is reached at 60-65 cm (9-11 years) for males and at 75-80 cm (12-14 years) for females. One female will give birth to 40-50 young during a normal life span. Females may grow to a length

* Except for spurdog, catches of dogfishes are generally merged with catches of hounds in official landing statistics, which are given in Appendix Tables 15-24. Catches of porbeagle, Greenland shark and basking sharks are given as various non-teleosts which may also include other species (Appendix Tables 25-32).

of 130 cm, but individuals over 110 cm are scarce. Few males exceed 100 cm. The maximum age is probably 25-30 years.

3.1.2 Fisheries and regulations

The Norwegian fishery for spurdog is chiefly a long-line fishery. For several years it was conducted as a summer fishery at Shetland and a winter fishery on the Norway coast. In recent years there have been important fisheries for spurdog in late summer and autumn in the western North Sea from Dogger Bank to the Scottish east coast.

The Scottish and English landings of spurdog are, to a large extent, by-catches in trawl fisheries, but there are also specialist line fisheries.

Total landings of spurdog have shown periodic variations over the years (Appendix Tables 8-14). High catches in the early 1960s were followed by a period with lower catches around 1965-67. After a period of fairly high catches from 1968 to 1973, the landings at present appear to be declining. The catch statistics are, however, not very accurate and the apparent trends may not be real. Evidence suggests that the main stocks have been overexploited and are suffering from recruitment over-fishing.

The spurdog fishery has up to now not been restricted by international regulations. In Norway the minimum landing size of spurdog has been 70 cm during the last 10 years.

3.2 Porbeagle

3.2.1 Life history

The porbeagle is found chiefly in boreal waters of the North Atlantic Ocean. In the eastern part of the area it is most common from the Mediterranean to Faroe and western Norway, but may occasionally be found as far north as the Barents Sea. The porbeagle lives pelagically occurring from the surface and down to at least 250 m depth.

The porbeagle is ovoviviparous. Mating and birth seem to take place all over the area of distribution, probably once per year. The litter is composed of 1-5 young.

3.2.2 Fisheries and regulations

Long-line is the dominating gear in porbeagle fisheries. Landings have declined in recent years. For Norwegian fishermen there seems to have been a decline in catch per effort in the period 1950-70. No regulations have been applied to the porbeagle fisheries.

3.3 Greenland Shark (Somniosus microcephalus)

3.3.1 Life history

The Greenland shark is generally found in deep waters, 200 - 600 m. The European distribution is from Brittany to Iceland and Greenland, Spitsbergen and the Barents Sea.

The Greenland shark is ovoviviparous, but details of mating and birth are not known.

3.3.2 Fisheries and regulations

At present only Iceland has a small fishery for Greenland shark, using long-lines. However, most of the Icelandic landings of Greenland shark are by-catch in trawl fisheries. The fishery for this species is unregulated.

3.4 Basking Sharks (Cetorhinus maximus)

3.4.1 Life history

The basking shark is found in temperate waters all over the world. In the North-East Atlantic Ocean basking shark is found from Morocco to Iceland and North Cape. It appears to be most common from Ireland to Iceland and western Norway. It lives pelagically and prefers the upper water layers.

The basking shark is ovoviviparous. Details of mating and birth are poorly known. The gestation period has been given as $3\frac{1}{2}$ year.

3.4.2 Fisheries and regulations

The basking shark is caught with harpoon and whale guns. Only Norway has a fishery of any importance. Norwegian fishermen start catching the basking shark west of Ireland in March-April and follow it northwards to the Norwegian west coast where it is caught until September.

No regulations have been applied to the fishery.

Appendix Table 1

Nominal catch (metric tons) of Saithe in Sub-area VII, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976*
Belgium	102	91	35	51	35	30	43	21	53	34	29
Denmark	-	-	-	-	-	-	-	-	-	1	
France	7 789	9 615	7 209	10 123	10 640	9 200	10 917	4 968	4 249	3 648	2 406
German Dem. Rep.	-	8	-	-	78	-	-	5	-	-	
Germany, Fed. Rep.	-	-	4	1	4	2	-	+	-	4	-
Netherlands	306	252	298	198	502	98	117	74	75	106	
Poland	-	-	-	-	-	3	4	101	1	78	43
Spain	-	-	-	-	-	-	-	-	490	603	
U.K. (England & Wales)	288	334	287	397	476	420	359	308	299	204	
U.K. (N. Ireland)	168	179	204	438	604	383	356	608	432	319	292
U.K. (Scotland)	1	4	3	13	16	14	9	7	8	61	7
U.S.S.R.	-	-	-	58	-	67	55	54	49	68	63
Total	8 654	10 483	8 040	11 279	12 355	10 217	11 860	6 146	5 656	5 126	

* Preliminary.

Appendix Table 2.

Nominal catch (metric tons) of Saithe in Sub-area VIII, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976*
Belgium	-	-	-	-	-	-	-	-	-	-	1
France	1 363	1 620	619	397	941	-	1 011	1 204	5	25	
Spain	-	-	-	-	-	-	-	220	230	120	
Total	1 363	1 620	619	397	941	-	1 011	1 424	235	145	

* Preliminary.

Appendix Table 3.

Nominal catch (metric tons) of Saithe in Sub-area XIV, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976*
German Dem. Rep.	-	101	-	-	-	-	8	-	149	204	
Germany, Fed. Rep.	107	209	136	542	-	90	26	22	15	4	+
Iceland	2	13	-	8	5	-	2	-	4	+	1
Norway	-	-	-	-	-	-	-	-	-	2	-
Poland	-	-	-	-	-	-	2	1	-	-	
U.K. (England & Wales)	7	45	-	-	+	2	22	5	2	+	
U.K. (Scotland)	-	-	-	-	-	-	-	-	-	-	2
Total	116	267	136	550	5	92	52	28	170	210	

* Preliminary.

Appendix Table 4.

Nominal catch (metric tons) of Pollack in Division IIa, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Germany, Fed. Rep.	1	+	+	-	+	-	+	+	1	+	
Norway	432	395	324	390	488	450	260	455	700	661	
Sweden	-	-	-	-	-	-	-	-	-	+a)	
U.K. (England & Wales)	-	-	-	+	+	1	+	+	+	+	
U.K. (Scotland)	-	-	-	-	-	-	-	-	+	-	
Total	433	395	324	390	488	451	260	455	701	661	

a) IIa includes smaller quantities taken in other areas than IIa, IV and IIIa,b,c,d.

Appendix Table 5.

Nominal catch (metric tons) of Pollack in Sub-area IV and Division IIIa, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976*
Belgium	4	12	22	8	3	6	4	12	76	170	5
German Dem. Rep.	-	-	-	-	-	-	-	-	2	-	
Germany, Fed. Rep.	47	69	90	101	86	59	151	94	115	123	
Netherlands	-	-	-	-	-	-	-	10	55	34	
Norway	1 912	2 265	1 693	1 482	1 202	1 006	710	960	1 185	796	
Poland											
Sweden	1 193	1 106	1 012	1 224	756	750	779	626	708	592	
U.K. (England & Wales)	83	221	185	65	177	177	161	131	195	136	
U.K. (Scotland)	111	97	156	111	138	113	144	158	271	186	
Total	3 350	3 770	3 158	2 991	2 362	2 111	1 949	1 991	2 607	2 037	

* Preliminary

Appendix Table 6.

Nominal catch (metric tons) of Pollack in Sub-area VI, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	2	1	5	1	2	1	1	2	6	+	
German Dem. Rep.	-	-	-	-	-	-	-	-	-	1	
Germany, Fed. Rep.	-	1	2	4	1	5	1	-	-	+	
Ireland	200	263	214	282	398	75	127	160	290	312	
Netherlands	-	-	-	-	-	-	-	-	3	1	
Norway	-	-	148	-	-	-	-	-	-	4	
U.K. (England & Wales)	161	126	184	303	148	82	101	113	97	102	
U.K. (Scotland)	267	287	316	364	299	174	216	390	262	291	
Total	630	678	869	954	848	337	446	665	658	711	

Appendix Table 7.

Nominal catch (metric tons) of Pollack in Sub-area VII, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	456	417	214	142	165	114	142	89	299	295	
Germany, Fed. Rep.	-	-	-	-	1	+	-	+	-	-	
Ireland	438	474	508	794	724	673	1 073	893	785	1 045	
Netherlands	-	-	-	-	-	-	-	3	13	17	
U.K. (England & Wales)	174	196	167	159	119	115	123	127	218	288	
U.K. (Scotland)	1	6	+	2	1	1	+	+	5	2	
Total	1 069	1 093	889	1 097	1 010	903	1 338	1 112	1 320	1 647	

Appendix Table 8.

Nominal catch (metric tons) of Picked Dogfish in Sub-area I and Divisions IIa and IIb, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Germany, Fed. Rep.	41	13	4	-	2	+	+	+	+	1	
Norway	1 540	1 350	1 120	854	324	142	304	789	1 187	555	
U.K. (Scotland)	-	-	-	-	-	-	-	1	-	-	
Total	1 581	1 363	1 124	854	326	142	304	790	1 187	556	

Appendix Table 9.

Nominal catch (metric tons) of Picked Dogfish in Sub-area IV and Division IIIa, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	816	906	1 251	1 295	969	1 222	968	1 704	947	893	
Denmark	1 363	1 131	1 076	1 659	1 661	2 034	2 656	2 361	2 141	2 705	
Faroe Islands	-	-	-	-	-	-	-	122	42	41	
German Dem. Rep.	-	-	-	-	-	-	-	-	6	-	
Germany, Fed. Rep.	483	700	576	674	564	346	483	270	231	195	
Iceland	-	-	2	2	2	2	1	4	4	+	
Netherlands	220	320	451	369	331	624	581	534	691	339	
Norway	16 134	15 821	21 936	24 590	16 454	9 987	22 062	16 669	16 064	14 817	
Sweden	-	-	-	-	290	426	400	286	277	235	
U.K. (Scotland)	1 829	3 492	4 420	3 051	2 804	3 949	4 378	5 097	4 980	4 790	
Total	20 845	22 370	29 712	31 640	23 075	18 590	31 529	27 047	25 383	24 015	

Appendix Table 10.
Nominal catch (metric tons) of Picked Dogfish in Division Va, 1966 - 1976.
(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	54	16	30	10	48	26	127	129	20	14	
Germany, Fed. Rep.	134	99	168	131	192	141	118	72	81	20	
Iceland	-	22	29	12	17	32	19	27	12	10	
U.K. (Scotland)	6	2	11	2	4	6	5	1	5	4	
Total	194	139	238	155	261	205	269	229	118	48	

Appendix Table 11.
Nominal catch (metric tons) of Picked Dogfish in Division Vb, 1966 - 1976.
(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Faroe Islands	-	-	-	-	-	-	-	3	-	-	
Germany, Fed. Rep.	13	4	23	4	+	-	6	2	1	1	
Netherlands	-	-	-	-	-	+	-	-	-	1	
Norway	-	-	-	-	-	-	-	506	91	2	
U.K. (Scotland)	46	37	45	73	64	22	19	28	71	18	
Total	59	41	68	77	64	22	25	539	163	22	

Appendix Table 12.

Nominal catch (metric tons) of Picked Dogfish in Sub-area VI, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	300	225	195	31	23	90	66	6	88	24	
Denmark	-	-	-	-	-	+	-	-	-	-	
Germany, Fed. Rep.	3	10	5	27	14	2	24	13	2	1	
Iceland	-	-	-	-	+	+	-	-	-	-	
Netherlands	1	1	2	-	-	5	31	9	4	1	
Norway	-	-	33	-	6 321	10 170	702	668	397	73	
Poland	-	-	-	-	-	-	-	18	-	-	
U.K. (Scotland)	3 745	3 687	3 113	2 868	3 051	3 708	3 932	4 054	4 331	5 373	
Total	4 049	3 923	3 348	2 926	9 409	13 975	4 755	4 768	4 822	5 472	

Appendix Table 13.

Nominal catch (metric tons) of Picked Dogfish in Sub-area VII, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	106	175	59	58	61	370	32	49	80	106	
Germany, Fed. Rep.	-	-	-	+	1	+	-	-	1	-	
Netherlands	5	8	10	15	6	4	16	18	2	1	
Norway	-	-	-	-	-	-	-	991	-	-	
U.K. (N. Ireland)	-	-	-	-	-	-	-	38	10	-	
U.K. (Scotland)	8	16	4	7	6	41	22	5	96	33	
Total	119	199	73	80	74	415	70	1 101	189	140	

Appendix Table 14.

Nominal catch (metric tons) of Picked Dogfish in Sub-area XIV, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Germany, Fed. Rep. (Total)	22	5	1	11	+	5	6	2	+	-	

Appendix Table 15.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area I and Divisions IIa and IIb, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
France	-	-	47	-	-	-	-	-	-	-	
Germany, Fed. Rep.	4	1	1	+	+	-	-	8	-	14	
U.K. (England & Wales)	10	5	2	5	7	14	2	17	1	1	
U.S.S.R.	-	-	908	821	-	-	526	676	805	-	
Total	14	6	958	826	7	14	528	701	806	15	

Appendix Table 16.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area IV and Division IIIa, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	208	203	190	156	113	-	-	133	73	91	
France	-	-	3 354	-	-	-	-	-	-	-	
German Dem. Rep.	-	-	-	-	-	-	-	4	-	-	
Germany, Fed. Rep.	28	51	27	27	14	-	-	183	-	6	
Netherlands	+	-	-	-	-	-	-	-	-	-	
Poland	-	-	-	-	-	-	-	31	-	-	
Sweden	-	-	-	-	8	-	-	3	3	-	
U.K. (England & Wales)	3 165	3 181	3 188	3 796	4 717	6 030	6 331	6 548	5 300	6 622	
U.S.S.R.	-	1 213	320	2 740	11	41	-	-	20	-	
Total	3 401	4 648	7 079	6 719	4 863	6 071	6 331	6 902	5 396	6 719	

Appendix Table 17.

Nominal catch (metric tons) of Dogfishes and Hounds in Division Va, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	2	+	2	1	1	-	-	1	+	+	
France	-	-	13	-	-	-	-	-	-	-	
Germany, Fed. Rep.	308	289	208	147	177	-	-	81	-	74	
Iceland	58	-	-	-	-	-	-	-	-	-	
U.K. (England & Wales)	214	138	195	48	118	158	196	45	126	74	
Total	582	427	418	196	296	158	196	127	126	148	

Appendix Table 18.

Nominal catch (metric tons) of Dogfishes and Hounds in Division Vb, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
France	-	-	13	-	-	-	-	-	-	-	
Germany, Fed. Rep.	45	30	45	12	3	-	-	19	-	26	
U.K. (England & Wales)	272	288	204	311	107	131	72	125	39	89	
Total	317	318	262	323	110	131	72	144	39	115	

Appendix Table 19.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area VI, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	4	5	10	9	10	-	-	5	6	1	
France	-	-	1 422	-	-	-	-	-	-	-	
Germany, Fed. Rep.	-	8	3	+	+	-	-	1	-	3	
U.K. (England & Wales)	1 438	1 736	1 551	1 259	1 004	1 048	923	868	851	966	
Total	1 442	1 749	2 986	1 268	1 014	1 048	923	874	857	970	

Appendix Table 20.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area VII, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	192	205	234	253	335	-	-	379	406	388	
France	-	-	5 988	-	-	-	-	-	-	-	
Germany, Fed. Rep.	-	-	-	+	+	-	-	-	-	-	
U.K. (England & Wales)	322	302	273	286	277	301	315	347	540	762	
U.K. (N. Ireland)	174	43	52	92	34	6	7	-	-	29	
Total	688	550	6 547	631	646	307	322	726	946	1 179	

Appendix Table 21.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area VIII, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
France	-	-	1 351	-	-	-	-	-	-	-	
Spain	1 375	1 258	1 879	1 602	1 612	-	-	-	-	-	
Total	1 375	1 258	3 230	1 602	1 612	-	-	-	-	-	

Appendix Table 22.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area IX, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Portugal	295	308	279	284	576	740	409	435	313	927	
Spain	1 176	1 492	1 241	1 168	2 151	-	-	-	-	-	
Total	1 471	1 800	1 520	1 452	2 727	740	409	435	313	927	

Appendix Table 23.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area X, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Portugal	27	28	31	24	40	9	3	316	280	270	
Total	27	28	31	24	40	9	3	316	280	270	

Appendix Table 24.

Nominal catch (metric tons) of Dogfishes and Hounds in Sub-area XIV, 1966 - 1976

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Germany, Fed. Rep.	171	158	134	180	125	-	-	91	-	53	
U.K. (England & Wales)	-	-	-	-	-	-	5	+	3	-	
Total	171	158	134	180	125	-	5	91	3	53	

Appendix Table 25.

Nominal catch (metric tons) of Various Non-Teleost in Sub-area I and Divisions IIa and IIb, 1966 - 1976.
(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
France	406	717	-	450	-	-	-	-	-	-	
German Dem. Rep. ^{a)}	12	9	-	-	-	-	3	-	-	-	
Germany, Fed. Rep.	-	3	+	-	-	-	-	-	6	-	
Norway ^{b)}	8 208	20 727	16 207	10 764	11 902	4 622	5 750	9 425	8 003	13 900	
Sweden	-	-	-	-	-	-	-	-	-	+ ^{c)}	
Total	8 626	21 456	16 207	11 214	11 902	4 622	5 753	9 425	8 009	13 900	

a) 1966, 1967 and 1972 include skates.

b) Includes basking shark and relatively small quantities of porbeagle.

c) IIa includes smaller quantities taken in other areas than IIa, IV and IIIa,b,c,d.

Appendix Table 26.

Nominal catch (metric tons) of Various Non-Teleost in Sub-area IV and Division IIIa, 1966 - 1976.
(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	1	1	2	+	1	2	141	-	-	-	
Denmark	174	192	147	137	165	399	523	157	170	265	
Faroe Islands	-	-	-	-	-	-	-	1	-	-	
France	1 636	2 510	-	5 005	2 426	2 900	3 427	3 173	2 365	2 104	
German Dem. Rep. ^{a)}	147	20	-	-	-	20	-	-	-	-	
Germany, Fed. Rep.	-	3	5	5	2	22	22	4	11	3	
Iceland	-	-	+	+	-	-	-	-	-	-	
Norway ^{b)}	56	231	338	5 265	3 097	2 789	1 633	925	187	2 505	
Poland	-	-	-	-	-	-	-	-	124	-	
Sweden	-	-	-	-	-	1	1	+	-	1	
U.K. (England & Wales)	-	-	-	-	-	-	4	4	4	5	
U.K. (Scotland)	3	4	5	2	4	6	11	9	...	-	
U.S.S.R.	17	-	-	-	-	-	-	-	-	-	
Total	2 034	2 961	497	10 414	5 695	6 139	5 762	4 273	2 861	4 883	

a) 1966, 1967 and 1971 includes skates

b) Includes basking shark and porbeagle

Appendix Table 27.

Nominal catch (metric tons) of Various Non-Teleost in Division Va, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	+	+	+	+	-	-	6	-	-	-	
France	300	825	-	709	13	16	289	-	-	5	
German Dem. Rep. ^{a)}	26	-	-	-	1	-	-	-	-	-	
Germany, Fed. Rep.	-	1	-	-	1	128	67	+	74	-	
Iceland ^{b)}	6	17	20	14	18	16	19	44	3	17	
U.K. (England & Wales)	-	-	-	-	-	-	-	+	-	-	
U.K. (Scotland)	-	+	-	-	-	-	+	-	...	-	
Total	326	843	20	723	33	160	381	44	77	22	

a) 1966 and 1970 includes skates

b) Predominantly Greenland shark

Appendix Table 28.

Nominal catch (metric tons) of Various Non-Teleost in Division Vb, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Faroe Islands	-	-	-	-	-	-	-	4	-	-	
France	590	392	-	945	93	120	487	66	88	7	
German Dem. Rep.	66 ^{a)}	-	-	-	-	-	-	-	-	-	
Germany, Fed. Rep.	-	-	+	-	+	8	12	+	32	+	
Norway	-	-	-	-	-	-	40 ^{b)}	-	1 000 ^{c)}	-	
Poland	-	-	-	-	-	-	-	-	6	-	
U.K. (England & Wales)	-	-	-	-	-	-	-	2	+	-	
U.K. (Scotland)	1	1	1	1	1	1	2	1	...	-	
Total	657	393	1	946	94	129	541	73	1 126	7	

a) Includes skates

b) Porbeagle

c) Basking shark

Appendix Table 29.

Nominal catch (metric tons) of Various Non-Teleost in Sub-area VI, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	+	-	-	-	-	-	6	-	-	-	
Denmark	-	-	-	-	-	14	-	-	-	-	
France	2 557	2 942	-	5 842	1 549	770	347	2 637	3 546	2 221	
Germany, Fed. Rep.	-	+	+	-	+	+	-	-	-	-	
Norway a)	-	-	-	-	4 000	340	-	-	-	2 250	
U.K. (England & Wales)	-	-	-	-	-	-	+	+	5		
U.K. (Scotland)	2	1	2	1	1	1	2	1	...	-	
Total	2 559	2 943	2	5 843	5 550	1 125	355	2 638	3 551	4 471	

a) Predominantly basking shark

Appendix Table 30.

Nominal catch (metric tons) of Various Non-Teleost in Sub-area VII, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Belgium	1	+	+	+	+	1	312	-	-	-	
Denmark	-	-	-	-	-	-	-	1	-	-	
France	8 218	8 743	-	9 010	9 427	5 006	5 724	5 100	6 172	6 333	
Germany, Fed. Rep.	-	-	-	-	+	+	-	-	-	-	
Norway a)	-	-	135	130	-	1 000	60	800	1 750	-	
Poland	-	-	-	-	-	-	-	-	184	-	
U.K. (England & Wales)	-	-	-	-	-	-	+	4	4	8	
Total	8 218	8 743	135	9 140	9 427	6 007	6 096	5 905	8 110	6 341	

a) Predominantly basking shark

Appendix Table 31.

Nominal catch (metric tons) of Various Non-Teleost in Sub-area VIII, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
France (Total)	1 564	1 326	-	1 066	640	2 300	2 155	2 466	797	1 086	

Appendix Table 32.

Nominal catch (metric tons) of Various Non-Teleost in Sub-area XIV, 1966 - 1976.

(Data for 1966-1975 from Bulletin Statistique)

Country	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976*
Germany, Fed. Rep.	10	+	-	-	-	105	95	-	28	-	
Greenland	-	-	-	-	-	66	-	-	-	-	
Iceland a)	-	9	12	9	15	37	37	35	88	47	90
Total	10	9	12	9	15	208	132	35	116	47	

* Preliminary

a) Predominantly Greenland shark