

8.3 Assessments and advice

8.3.1 Stock trends

Assessments are carried out for cod, herring, sprat, salmon, and trout stocks. Results of the assessments are presented in the subsequent sections of the report.

Cod in Subdivisions 22–24 (Western Baltic cod). The cod stock in the Western Baltic has historically been much smaller than the neighbouring Eastern Baltic stock, from which it is biologically distinct. It appears to be a highly productive stock, which has sustained a very high fishing mortality for many years. Recruitment is rather variable and the stock is highly dependent upon the strength of incoming year classes. Spawner biomass has been fluctuating around B_{pa} since 2002. In 2007 a multi-annual plan was introduced for both cod stocks in the Baltic.

Cod in Subdivisions 25–32 (Eastern Baltic cod). The Eastern Baltic cod stock is biologically distinct from the adjacent Western Baltic (Subdivisions 22–24) stock although there is some migration of fish between areas. Spawning is confined to the deep basins as egg survival depends on oxygen concentrations in the deep saline water layer where fertilized eggs are neutrally buoyant. The total and spawning-stock biomass increased by the end of the 1970s due to the extremely abundant year classes of 1976, 1977, and 1980 and the favourable reproduction conditions in the southern and central Baltic Sea. The spawning stock declined from the historically highest level during 1982–1983 to the lowest level on record in the most recent years. The decline of the stock was a result of an increase of effort in the traditional bottom trawl fishery, the introduction of gillnet fishery, and decreased egg and larval survival due to unfavourable oceanographic conditions (i.e., low oxygen concentrations impeding egg development and low food supply for larvae). Since the mid-1980s cod reproduction has only been successful in the southern spawning areas – Bornholm Basin and Slupsk Furrow. Although the present estimates of stock are uncertain due to misreporting of landings, discarding, and age-reading problems, all available information indicates that the SSB is at a historic low level although an increase in spawning-stock biomass has been observed since 2005. Recruitment since the late 1980s has continued to be at a low level, although the year classes 2003 and 2005 are above the recent average.

Flounder in Subdivisions 22–32. In the Baltic Sea there appear to be several distinct flounder stocks. Migration studies (Aro, 1989; Bagge and Steffensen, 1989) indicate that there are more than eight rather distinct flounder stocks (populations). However, a recent study (Florin and Höglund, 2005) using microsatellites suggested three major stocks of flounder: (i) Skagerrak/Kattegat (ICES Subdivisions 20–21), (ii) Southwestern Baltic Sea (ICES Subdivisions 22–25 and deeper areas of 26 and 28), and (iii) Eastern Baltic Sea (ICES Subdivisions 27, 29–32, and shallow areas of 26 and 28). These three groups (stocks) of flounders also correspond with known differences in spawning behaviour (Nissling *et al.*, 2000), with demersal eggs in the Eastern Baltic, and with buoyant pelagic eggs in the Southwestern Baltic. In the Southwestern Baltic, spawning takes place in the Arkona Deep, the Slupsk Furrow, and the Bornholm Deep at depths of 40–80 m in the period from February to May. This is followed by feeding migrations to shallow coastal areas in Germany, Poland, and southern Sweden. Most flounder landings come from bycatch in the cod fishery, although there are some directed flounder fisheries, particularly in Subdivisions 24 and 25. Preliminary analyses indicate that flounder discards in the cod fishery can be substantial. Recreational fishing on the Eastern Baltic Sea flounder is increasing, and recreational flatfish catches in Sweden and Finland exceed commercial catches.

Herring in Subdivisions 25–29&32, excluding the Gulf of Riga (Central Baltic herring) is the largest herring stock assessed for the Baltic and comprises a number of spawning components. This stock complex experienced a high biomass level in the early 1970s, but then declined until 2001. The proportion of the various spawning components has varied in both landings and in stock. The southern components which grow to a relatively large size have declined, and the more northerly components with individuals reaching a maximum length of only about 18–20 cm now dominate the landings. The recruitment has been below the long-term average since the beginning of the 1990s. The slight increase in SSB in 2007 is mainly driven by a low fishing mortality. Since 1990, mean weight-at-age has decreased by 15–45% across all age groups. In recent years mean weights have stabilized, and remain at a low level. Reported landings might be imprecise as this stock is caught together with sprat.

Gulf of Riga herring. The spawning-stock biomass of the Gulf of Riga herring has been increasing in the late 1980s, and is currently around 23% above the long-term average. The year-class strength of this stock is significantly influenced by hydro-meteorological conditions (by the severity of winter, in particular). Mild winters in the second half of the 1990s have supported the formation of a series of rich year-classes and an increase of SSB. Due to the low and only occasional presence of sprat in the Gulf, there is no mixed pelagic fishery in the Gulf of Riga.

Herring in Subdivision 30. There is no updated information on this stock. In 2007 the spawning stock of Bothnian Sea herring was assessed to be at a relatively low level of 100 000–150 000 t until the mid-1980s, after which the SSB more than tripled by 1994. Thereafter SSB has fluctuated between 340 000 t and 414 000 t in recent years. Favourable

environmental conditions (warm summers) have contributed to good recruitment. For example, in 2007, the 2002 year class was estimated to be more than twice the size of the second largest year class in the time-series.

Herring in Subdivision 31. There is no updated information on this stock. The stock is one of the smallest herring stocks in the Baltic. The dynamics of the stock appears to be largely influenced by the environmental factors. In the absence of an agreed assessment, the present stock status is unclear.

Sprat in Subdivisions 22–32 is the largest stock assessed in the Baltic. SSB is currently assessed to be above the long-term mean. Fishing mortality in recent years is above F_{pa} . The spawning-stock biomass has been low in the first half of the 1980s. In the beginning of the 1990s the stock started to increase rapidly and in 1996–1997 it reached the maximum observed spawning-stock biomass of 1.7 million tonnes. The stock size increased due to the combination of strong recruitment and declining natural mortality (effect of low cod biomass). Since 1998, the stock has been fluctuating between 700 000 t and 1 300 000 t. The main part of the sprat catches is taken for industrial purposes with bycatches of herring, and the species composition of these catches is imprecise in some fishing areas/periods.

Salmon in the Main Basin and the Gulf of Bothnia (Subdivisions 22–31) consists of stocks in 5 different assessment units with similar biological and genetic characteristics inside each assessment unit. Stocks of a particular unit are assumed to exhibit similar migration patterns. It can therefore be assumed that they are subjected to the same fisheries, experience the same exploitation rates, and could be managed in the same way (e.g. through the use of coastal management measures it might be possible to improve the status of stocks in a specific assessment unit). The total wild smolt production has increased about fourfold in the main assessment units since management action was taken in 1997. However, the post-smolt survival in recent years has been low. This leads to decreasing numbers of feeding and maturing salmon, and the advice to keep catches and effort low is recommended.

Salmon in the Gulf of Finland (Subdivision 32) consists of only a few small wild populations together with a number of mixed/reared stocks. The wild salmon populations are genetically distinct from each other, indicating that these are still original salmon stocks. Surveys show that rivers where the stock mainly depends on enhancement releases still support fractions of the original wild salmon populations.

Sea trout in the Baltic consists of approximately 1000 stocks, of which about half are wild. There are no estimates of the historical numbers of sea trout populations or quantitative estimates of the total natural smolt production in past years. The status of these populations is very variable – some appear to be in a good state whereas others appear to be in a poor state.

Mixed fisheries and fisheries interactions

Officially reported fish catches in the Baltic until 2007 are provided in Tables 8.3.2.1–8.3.2.5. These are the catches officially reported to ICES by national statistical offices for publication in the *ICES Fishery Statistics*. For use in the assessments, ICES estimates discards and landings which are not officially reported, as well as the composition of bycatches. These amounts are included in the estimates of total catch for each stock and are presented separately for each stock in the stock summaries in Section 8.4. These estimates vary considerably between different stocks and fisheries, being negligible in some cases and constituting important parts of the total removals from other stocks. Furthermore, the catches used in assessments are divided into subdivisions, whereas the officially reported catches by some countries are reported by the larger Divisions IIIb, c, and d. The trends in Table 8.3.2.1 may, therefore, not correspond to those on which assessments have been based, and are presented for information only.

Baltic cod is taken in a targeted fishery, in most areas with minimal bycatches of other commercially important fish. There are directed flatfish fisheries in some Baltic areas with bycatches of cod and non-commercial species.

There are indications of high removals by recreational fishing in the Baltic, especially of cod and salmonids. These are presently not included in the assessments.

Herring and sprat are taken in pelagic trawl fisheries, which include fisheries taking both species simultaneously. The actual composition of pelagic catches is poorly known for some fisheries because landings are assigned to species according to the target species in some landings statistics. In **Denmark** trawlers using mesh sizes smaller than 32 mm fish for industrial purposes, and the species composition is determined by logbooks/sale-slips and corroborated by samples. The landings not sampled are allocated to species according to a “dominant species” rule. When using meshes larger than 31 mm, trawlers are assumed to fish for human consumption and the species composition is then based on logbooks. The landings are allocated to fishing area according to information in logbooks. In **Estonia** species compositions are based on logbooks. Some (mostly visual) estimation by the Environmental Inspection is carried out. In **Finland** species compositions are by catch notifications and logbooks. Some inspections are made in harbours by regional Employment and Economic Development Centres. In **Germany** landings of herring from gillnets and trapnets with negligible amounts of sprat dominated the pelagic fishery until 2001, after which a substantial increase in trawling

pelagic fish has occurred. Species composition is determined by logbooks. In **Latvia** and **Lithuania** species composition is based on logbooks. In **Poland** species composition is based on logbooks and landing declarations. In **Russia** species composition is based on logbooks and sporadically checked by fishery inspectors in harbours. In **Sweden** species composition is based on logbooks. The samples taken by the Coast Guard for control purposes have so far not been used for the officially reported landings.

Overall, estimates of pelagic catch compositions are mainly based on logbooks and landing declarations, with limited supplementary sampling of catches. This means that the actual composition is uncertain. A comparison between the composition of pelagic landings and acoustic survey data indicates large discrepancies in the proportion of herring. This could mean that commercial fleets are fishing in a more discriminate manner than the research vessels, or that the reported proportions do not reflect the species composition particularly well.

Single-stock exploitation boundaries and critical stocks

The state of stocks and single-stock exploitation boundaries are summarized in the table below.

Species	State of the stock				ICES considerations in relation to single-stock exploitation boundaries			Upper limit corresponding to single-stock exploitation boundary. Tonnes or effort in 2008
	SSB in relation to precautionary limits	F in relation to precautionary limits	F in relation to high long-term yield	F in relation to high long-term target	In relation to agreed management plan	In relation to precautionary limits	In relation to target reference points / high long-term yield	
Cod in 22–24	Increased risk	Undefined	Overfished	Above target	2007 EU management plan: 16 337 t	Maintain SSB > B _{pa} in 2008; <13 700 t	F = 0.3–0.6; 6950 t–12 530 t	< 13 700 t
Cod in 25–32	Undefined	Harvested sustainably	Overfished	Above target	2007 EU management plan: 48 600 t	F below F _{pa} = 0.6 <100 400 t	F = 0.3; 56 400 t	48 600 t
Herring in IIIa and 22–24	Advice to be issued 27 June 2008							
Herring in 25–29 (excl GoR) and 32	Undefined	Harvested sustainably	Underfished	No target agreed	No management plan	F below F _{pa} 0.19; <147 000 t	No targets agreed	< 147 000 t
Herring in the Gulf of Riga	Undefined	Harvested sustainably	Overfished	No target agreed	No management plan	F below F _{pa} = 0.4; <31 500 t	No targets agreed / F is within the range of F _{0.1} –F _{pa}	< 31 500 t
Herring in 30	No new assessment				Same advice as last year			< 67 300 t
Herring in 31	No new assessment				Same advice as last year			< 3000 t
Sprat in 22–32	Undefined	Increased risk	Overfished	No target agreed	No management plan	F below F _{pa} = 0.4; <291 000 t	No targets agreed	< 291 000 t
Flounder	Unknown	Unknown	Unknown	No target agreed	No management plan	Unknown	No targets agreed	
Plaice	Unknown	Unknown	Unknown	No target agreed	No management plan	Unknown	No targets agreed	
Dab	Unknown	Unknown	Unknown	No target agreed	No management plan	Unknown	No targets agreed	
Turbot in 22–32	Unknown	Unknown	Unknown	No target agreed	No management plan	Unknown	No targets agreed	
Brill in 22–32	Unknown	Unknown	Unknown	No target agreed	No management plan	Unknown	No targets agreed	
Salmon in Main Basin and Gulf of Bothnia	Low at-sea (post-smolt) survival in recent years threatens stock recoveries			No target agreed	In order to ensure recovery of the salmon stocks ICES recommends for 2009 that landings do not exceed the reduced catches expected for 2008.			
Salmon in Gulf of Finland	The condition of the wild stocks is poor			No target agreed	No catch of wild salmon in the Gulf of Finland. Fisheries should only be permitted at sites where there is virtually no chance of taking wild salmon from the Gulf of Finland stocks along with reared salmon.			

Species	State of the stock				ICES considerations in relation to single-stock exploitation boundaries			Upper limit corresponding to single-stock exploitation boundary. Tonnes or effort in 2008
	SSB in relation to precautionary limits	F in relation to precautionary limits	F in relation to high long-term yield	F in relation to high long-term target	In relation to agreed management plan	In relation to precautionary limits	In relation to target reference points / high long-term yield	
Sea trout	Some populations appear to be in a good state whereas the majority appears to be in a poor state			No target agreed	<p>In the Gulf of Bothnia and Gulf of Finland spatial fishing restrictions, minimum mesh size for gillnets, and effort limitations should be implemented for the fisheries in the sea and in rivers carrying wild sea trout populations in order to decrease the exploitation rate. The restoration of rearing habitats and building of new fish ways should be carried out on many rivers.</p> <p>In the Main Basin, sea trout densities are in general below the potential levels in the area. Habitat improvements by restoration are needed and accessibility to spawning and rearing areas should be improved in many rivers. Also fishing restrictions should take place in some regions in the area.</p>			

This table was last updated 26 May '08

8.3.2 ICES advice for fisheries management

Fisheries in the Baltic should in 2009 be managed according to the following rules:

- for Baltic Cod:
 - eastern Baltic cod (Subdivisions 25–32): landings should not exceed 48 600t;
 - western Baltic cod (Subdivisions 22–24): landings should not exceed 13 700 t.
- for Herring in Division IIIa and Subdivisions 22–24: advice will be available in June 2008.
- for Herring in Subdivisions 25–29+32 (excl. Gulf of Riga): catches should be less than 147 000 t.
- for Sprat in Subdivisions 22–32: catches should be less than 291 000 t.
- for Salmon in 22–31: Because of the low at-sea survival of salmon in recent years in combination with the past high harvest rate, the spawning populations of salmon are estimated to be low. Due to the ban on the driftnet fishery as of January 2008, the catches for 2008 are expected to be lower than in 2007. This will likely result in an increased number of spawners during the next few years. However, the impact of this increased number of spawners will be offset by continued low rates of at-sea survival. In order to ensure recovery of the salmon stocks ICES recommends for 2009 that landings do not exceed the reduced catches expected for 2008.
- for Salmon in the Gulf of Finland: There should be no catch of wild salmon. Fisheries should only be permitted at sites where there is virtually no chance of taking wild salmon. To improve selectivity of harvesting, coastal fisheries at sites likely to be on migration paths of wild salmon from Estonian rivers should be prohibited. Poaching occurs in these rivers and must be stopped. Fishing in rivers and river mouths supporting wild stocks should be prevented.
- for Sea trout: In the Gulf of Bothnia and Gulf of Finland spatial fishing restrictions, minimum mesh size for gillnets, and effort limitations should be implemented for the fisheries in the sea and in rivers carrying wild sea trout populations in order to decrease the exploitation rate. The restoration of rearing habitats and building of new fish ways should be carried out on many rivers. In the Main Basin, sea trout densities are in general below the potential levels in the area. Habitat improvements by restoration are needed and accessibility to spawning and rearing areas should be improved in many rivers. Also fishing restrictions should take place in some regions in the area.
- for other stocks (herring in the Gulf of Riga, in the Bothnian Sea, and in the Bothnian Bay) fisheries should be managed according to the precautionary limits stated in the table of individual stock limits above.

Information from the fishing industry

Information from the fishing industry and inspectors has been obtained in relation to estimates of unreported landings of cod.

Quality of assessments and uncertainties

There are considerable problems with the quality of recent catch data for several stocks. For herring and sprat the estimates of catch compositions of some pelagic fisheries remain imprecise. For cod there have been significant unreported landings in recent years similar to the situation in the early 1990s. Age readings of cod and flounder are considered uncertain. Commercial fishing effort data for some species is poorly resolved due to unknown and variable levels of targeting, affecting the data quality of tuning fleet data series. Details of data quality and uncertainties are provided for each stock in the stock summaries in Section 8.4.

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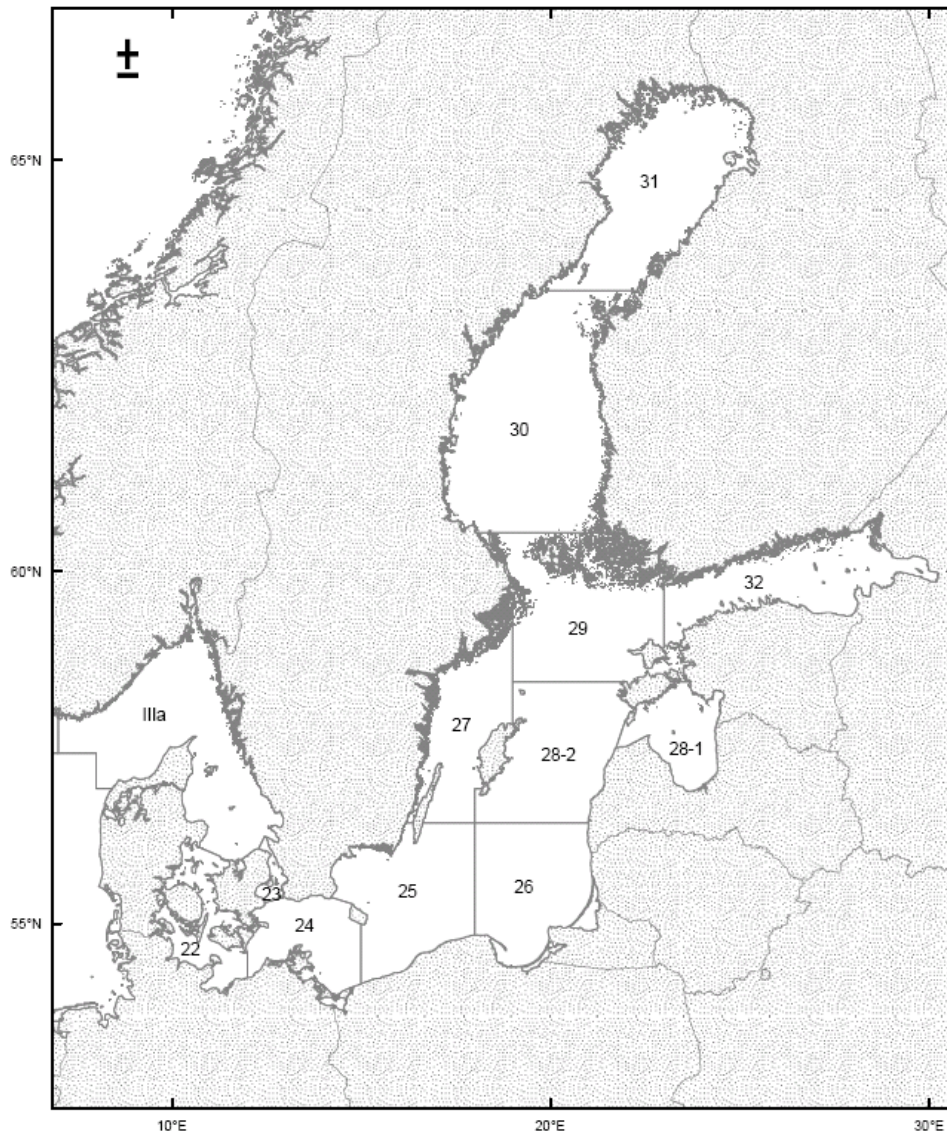


Figure 8.3.2.1 Subdivisions in the Baltic Sea.

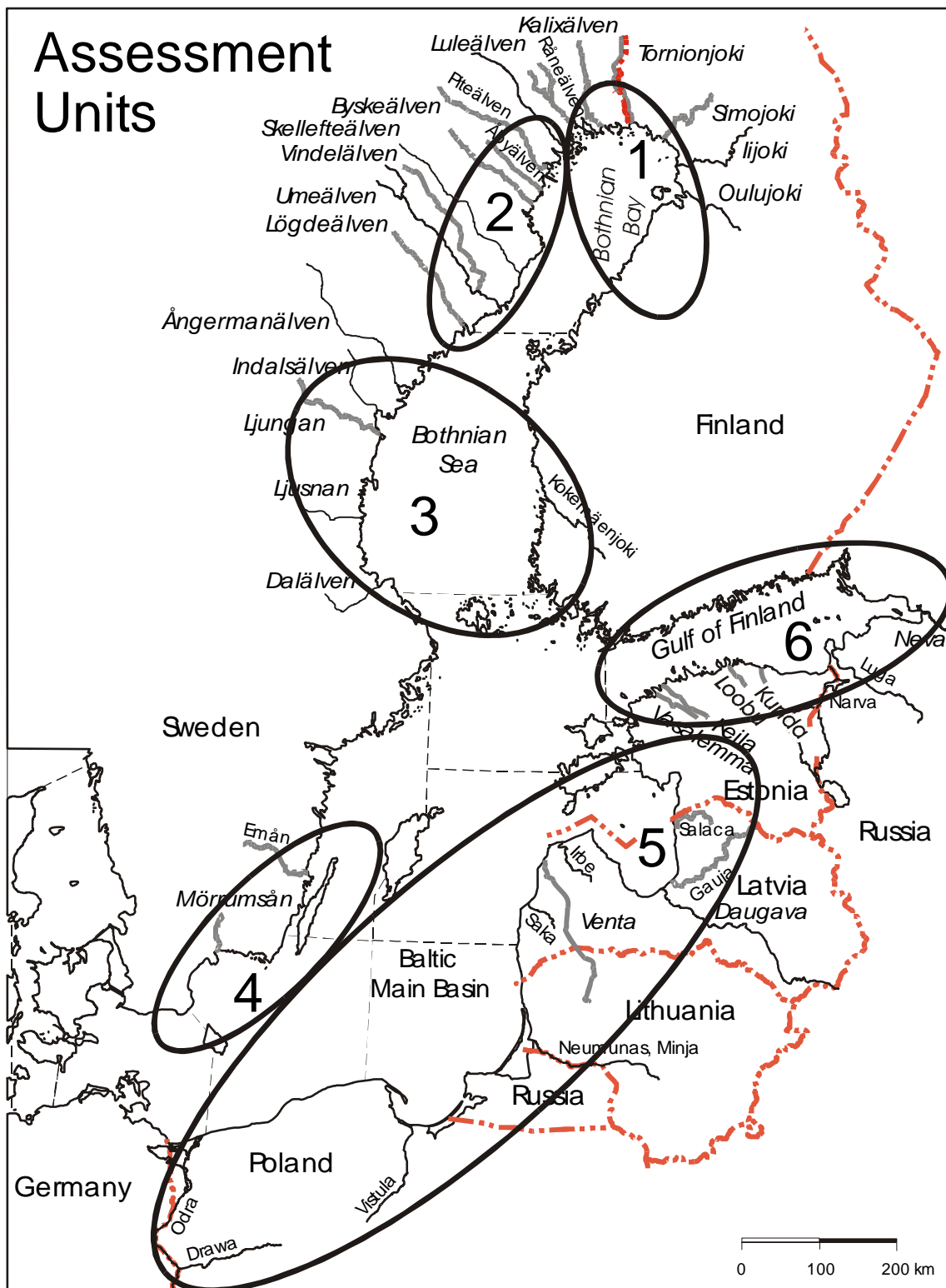


Figure 8.3.2.2 Grouping of salmon stocks in 6 assessment units in the Baltic Sea. The genetic variability between stocks of an assessment unit is smaller than the genetic variability between stocks of different units. In addition, the stocks within an assessment unit exhibit similar migration patterns.

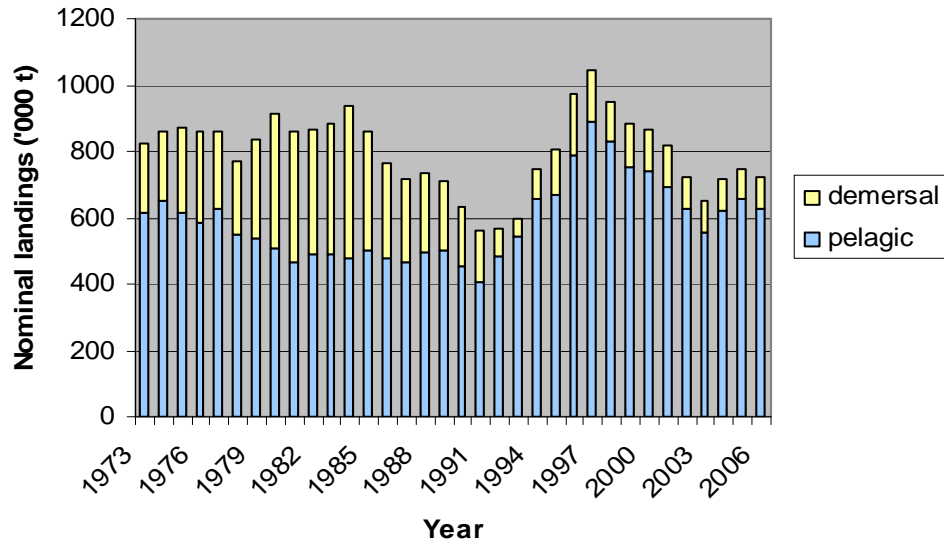


Figure 8.3.2.3 Baltic Sea nominal catches.

Table 8.3.2.1

Nominal fish catches in the Baltic (in '000 t). Anadromous species, except salmon, are not included. (Data as officially reported to ICES.) Note: This table will be updated in Autumn 2008.

Year	Species							Total
	Cod	Herring	Sprat	Flatfish	Salmon	Freshwater species	Others	
1973	189	404	213	18	2.7	23	55	905
1974	189	407	242	21	2.9	21	54	937
1975	234	415	201	24	2.9	20	60	957
1976	255	393	195	19	3.1	21	46	932
1977	213	413	211	22	2.4	22	42	925
1978	196	420	132	23	2.0	22	44	839
1979	273	459	78	24	2.3	20	47	903
1980	388	453	57	18	2.4	14	29	961
1981	380	419	47	16	2.4	13	31	908
1982	361	442	45	17	2.2	13	30	910
1983	376	459	31	16	2.4	13	20	917
1984	442	426	52	15	3.7	13	17	969
1985	344	431	69	17	4.0	11	16	892
1986	271	401	75	18	3.5	12	19	800
1987	238	373	91	16	3.8	13	24	759
1988	225	407	86	14	3.2	13	31	779
1989	192	414	89	14	4.2	14	18	745
1990	167	360	92	12	5.6	11	18	666
1991	139	295	111	14	4.6	17	19	600
1992	72	339	146	12	4.7	8	13	595
1993	41	352	194	12	3.4	10	7	619
1994	75	353	301	18	2.9	9	8	767
1995	117	343	326	22	2.7	9	17	837
1996	164	326	464	22	2.6	9	6	994
1997	134	370	520	20	2.6	12	7	1,066
1998	103	383	446	18	2.1	11	3	966
1999	117	343	408	18	1.7	11	4	903
2000 ¹	105	371	369	20	2.0	20	4	891
2001 ¹	103	339	354	23	1.7	20	4	845
2002 ¹	74	281	345	24	1.5	20	4	750
2003	74	232	325	20	1.3	-	-	-
2004	73	233	388	23	1.8	-	-	-
2005	63	222	434	25	1.5	-	-	-
2006	71	243	386	21	1.1	-	-	-

¹Includes recreational catches from Finland.

Table 8.3.2.2 Nominal catch (tonnes) of HERRING in Divisions IIIb,c,d. (Data as officially reported to ICES.).
Note: This table will be updated in Autumn 2008.

Year	Denmark	Finland	German Dem.Rep.	Germany, Fed.Rep.	Poland	Sweden	USSR	Total
1963	14,991	48,632	10,900	16,588	28,370	27,691	78,580 ¹	225,752
1964	29,329	34,904	7,600	16,355	19,160	31,297	84,956	223,601
1965	20,058	44,916	11,300	14,971	20,724	31,082 ²	83,265	226,216
1966	22,950	41,141	18,600	18,252	27,743	30,511	92,112	251,309
1967	23,550	42,931	42,900	23,546	32,143	36,900	108,154	310,124
1968	21,516	58,700	39,300	16,367	41,186	53,256	124,627	354,952
1969	18,508	56,252	19,100	15,116	37,085	30,167	118,974	295,202
1970	16,682	51,205	38,000	18,392	46,018	31,757	110,040	312,094
1971	23,087	57,188	41,800	16,509	43,022	32,351	120,728	334,685
1972	16,081	53,758	58,100	10,793	45,343	41,721	118,860	344,656
1973	24,834	67,071	65,605	8,779	51,213	59,546	127,124	404,172
1974	19,509	73,066	70,855	9,446	55,957	60,352	117,896	407,081
1975	18,295	69,581	71,726	10,147	68,533	62,791	113,684	414,757
1976	23,087	75,581	58,077	6,573	63,850	41,841	124,479	393,488
1977	25,467	78,051	62,450	7,660	60,212	52,871	126,000	412,711
1978	26,620	89,792	46,261	7,808	63,850	54,629	130,642	419,602
1979	33,761	83,130	50,241	7,786	79,168	86,078	118,655	458,819
1980	29,350	74,852	59,187	9,873	68,614	92,923	118,074	452,873
1981	28,424	65,389	56,643	9,124	64,005	84,500	110,782	418,867
1982	40,289	73,501	50,868	8,928	76,329	92,675	99,175	441,765
1983	32,657	83,679	51,991	9,273	82,329	86,561	112,370	458,860
1984	32,272	86,545	50,073	8,166	78,326	65,519	105,577	426,478
1985	27,847	88,702	51,607	9,079	85,865	57,554	110,783	431,437
1986	21,598	83,800	53,061	9,382	77,109	39,909	115,665	400,524
1987	23,283	82,522 ³	50,037	6,199	60,616	36,446	113,844	372,947
1988	29,950	92,824 ³	53,539	5,699	60,624	41,828	122,849	407,313
1989	26,654	81,122 ³	54,828	5,777	58,328	65,032	121,784	413,525
1990	16,237	66,078 ³	40,187 ⁷	5,152	60,919	55,174	116,478	360,225

Year	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Sweden	Russia	Total
1991	23,995	27,034 ⁴	51,546 ³	16,022	33,270	6,468 ⁵	45,991	59,176	31,755	295,257
1992	33,855	29,556	72,171 ³	17,746	25,965	3,237	52,864	75,907	27,979	339,280
1993	34,945	32,982	77,353 ³	20,143	21,949	3,912	50,833	86,497	23,545	352,159
1994	45,190	34,493	97,674 ³	12,367	22,676	4,988	49,111	70,886	15,904	353,411 ⁶
1995	37,762	43,482	94,613 ³	7,898	24,972	3,706	45,676	68,019	16,970	343,099
1996	34,340	45,296	93,337 ³	7,737	27,523	4,257	31,246	67,116	14,780	325,632
1997	30,876	52,436	90,334 ³	12,755	29,330	3,321	28,939	110,463	11,801	370,255
1998	38,800	42,721	85,545 ³	9,514	24,417	2,368	21,873	147,706	10,544	383,488
1999	37,974	44,039	82,237 ³	10,115	27,163	1,313	19,229	108,316	12,756	343,142
2000	49,727	41,735	81,648 ³	9,475	26,768	1,198	24,516	120,887	15,063	371,017
2001	46,297	41,737	82,867 ³	11,447	26,652	1,639	37,611	75,194	15,797	339,241
2002	18,406	36,251	76,242 ³	22,661	25,284	1,539	35,512	51,194	14,168	281,257
2003	8,254	27,359	64,021	22,637	24,187	2,109	30,703	39,350	13,363	231,983
2004	8,572	27,358	71,073	22,244	23,559	1,845	27,764	43,922	6,585	232,922
2005	7,175	22,099	66,978	24,754	22,202	748	21,766	48,940	7,016	221,678
2006	6,989	23,192	79,955	26,206	21,762	1,172	20,544	53,166	9,780	242,766

¹Including Division IIIa.

²Large quantity of herring used for industrial purposes is included with "Unsorted and Unidentified Fish".

³Includes some bycatch of sprat.

⁴As reported by Estonian authorities; 32,683 t reported by Russian authorities.

⁵As reported by Lithuanian authorities; 6,456 t reported by Russian authorities.

⁶Includes catches from the Faroe Islands of 122 t.

⁷The 1990 catches listed under the Federal Republic of Germany and the German Democratic Republic refer to catches by vessels from the respective former territories during the whole of 1990, before and after the political union. Thus, catches taken by vessels registered in the former German Democratic Republic in the months after unification are included in the German Democratic Republic figures.

Table 8.3.2.3 Nominal catch (tonnes) of SPRAT in Divisions IIIb,c,d. (Data as officially reported to ICES.). Note: This table will be updated in Autumn 2008.

Year	Denmark	Finland	German Dem.Rep.	Germany, Fed.Rep.	Poland	Sweden	USSR	Total
1963	2,525	1,399	8,000	507	10,693	101	45,820 ¹	69,045
1964	3,890	2,111	14,700	1,575	17,431	58	55,753	95,518
1965	1,805	1,637	11,200	518	16,863	46	52,829	84,898
1966	1,816	2,048	21,200	66	13,579	38	52,407	91,454
1967	3,614	1,896	11,100	2,930	12,410	55	40,582	72,587
1968	3,108	1,291	10,200	1,054	14,741	112	55,050	85,556
1969	1,917	1,118	7,500	377	17,308	134	90,525	118,879
1970	2,948	1,265	8,000	161	20,171	31	120,478	153,054
1971	1,833	994	16,100	113	31,855	69	133,850	184,814
1972	1,602	972	14,000	297	38,861	102	151,460	207,294
1973	4,128	1,854	13,001	1,150	49,835	6,310	136,510	212,788
1974	10,246	1,035	12,506	864	61,969	5,497	149,535	241,652
1975	9,076	2,854	11,840	580	62,445	31	114,608	201,434
1976	13,046	3,778	7,493	449	56,079	713	113,217	194,775
1977	16,933	3,213	17,241	713	50,502	433	121,700	210,735
1978	10,797	2,373	13,710	570	28,574	807	75,529	132,360
1979	8,897	3,125	4,019	489	13,868	2,240	45,727	78,365
1980	4,714	2,137	151	706	16,033	2,388	31,359	57,488
1981	8,415	1,895	78	505	11,205	1,510	23,881	47,489
1982	6,663	1,468	1,086	581	14,188	1,890	18,866	44,742
1983	2,861	828	2,693	550	8,492	1,747	13,725	30,896
1984	3,450	374	2,762	642	10,954	7,807	25,891	51,880
1985	2,417	364	1,950	638	22,156	7,111	34,003	68,639
1986	5,693	705	2,514	392	26,967	2,573	36,484	75,328
1987	8,617	287 ²	1,308	392	34,887	870	44,888	91,249
1988	6,869	495 ²	1,234	254	25,359	7,307	44,181	85,699
1989	9,235	222 ²	1,166	576	20,597	3,453	53,995	89,244
1990	8,858	162 ²	518	905	14,299	7,485	59,737	91,964

Year	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Sweden	Russia	Total
1991	21,781	14,124 ³	99 ²	736	17,996 ⁴	3,569	23,200	8,328	20,736	110,569 ⁵
1992	28,210	4,140	893 ²	608	17,388	1,697 ⁵	30,126	53,558	9,851	146,471 ⁵
1993	27,435	5,763	206 ²	8,267	12,553	2,798 ⁵	33,701	92,416	10,745	193,884 ⁵
1994	69,644	9,079	497 ²	374	20,132	2,789 ⁵	44,556	135,779	16,719	300,535 ^{5,6}
1995	76,420	13,052	4,103 ²	230	24,383	4,799 ⁵	37,280	150,435	14,934	325,636 ⁵
1996	123,549	22,493	14,351 ²	161	34,211	10,165 ⁵	77,472	163,087	18,287	463,776 ⁵
1997	153,765	39,692	19,852 ²	428	49,314	6,000 ⁵	105,298	123,207	22,194	519,750 ⁵
1998	111,003	32,165	27,014	4,551	44,858	5,132 ⁵	59,091	141,209	21,078	446,122 ^{5,7}
1999	97,686	36,407	18,886 ²	182	42,834	3,117	71,705	106,000	31,627	408,444
2000	55,521	41,394	23,242 ²	22	46,186	1,682	84,325	85,981	30,369	368,722
2001	53,189	40,776	15,849 ²	792	42,769	3,135	85,757	79,553	31,959	353,779
2002	47,630	40,717	17,258 ²	950	47,540	2,800	81,244	74,109	32,854	345,102
2003	39,528	29,366	8,961	18,023	41,743	3,032	84,097	71,188	28,663	324,601
2004	44,289	37,308	16,584	26,354	52,399	6,185	95,798	83,949	25,109	387,975
2005	53,696	55,285	17,894	28,975	64,647	8,635	74,329	100,797	29,749	434,007
2006	42,323	46,689	19,020	30,779	54,638	10,814	55,890	97,584	28,324	386,061

¹Including Division IIIa.

²Some bycatch of sprat included in herring.

³As reported by Estonian authorities; 17,893 t reported by Russian authorities.

⁴As reported by Latvian authorities; 17,672 t reported by Russian authorities.

⁵Preliminary.

⁶Includes catches from the Faroe Islands of 966 t.

⁷Includes catches from the Faroe Islands of 21 t.

Table 8.3.2.4 Nominal catch (tonnes) of COD in Divisions IIIb,c,d. (Data as officially reported to ICES.) Note: This table will be updated in Autumn 2008.

Year	Denmark	Faroe Islands	Finland	German Dem.Rep.	Germany Fed.Rep.	Poland	Sweden	USSR	Total
1963	35,851		12	7,800	10,077	47,514	22,827	30,550 ¹	154,631
1964	34,539		16	5,100	13,105	39,735	16,222	24,494	133,211
1965	35,990		23	5,300	12,682	41,498	15,736	22,420	133,649
1966	37,693		26	6,000	10,534	56,007	16,182	38,269	164,711
1967	39,844		27	12,800	11,173	56,003	17,784	42,975	180,606
1968	45,024		70	18,700	13,573	63,245	18,508	43,611	202,731
1969	45,164		58	21,500	14,849	60,749	16,656	41,582	200,558
1970	43,443		70	17,000	17,621	68,440	13,664	32,248	192,486
1971	47,563		3	9,800	14,333	54,151	12,945	20,906	159,701
1972	60,331		8	11,500	13,814	56,746	13,762	30,140	186,301
1973	66,846		95	11,268	25,081	49,790	16,134	20,083	189,297
1974	58,659		160	9,013	20,101	48,650	14,184	38,131	188,898
1975	63,860		298	14,740	21,483	69,318	15,168	49,289	234,156
1976	77,570		278	8,548	24,096	70,466	22,802	51,516	255,276
1977	74,495		310	10,967	31,560	47,703	18,327	29,680	213,042
1978	50,907		1,446	9,345	16,918	64,113	15,996	37,200	195,925
1979	60,071		2,938	8,997	18,083	79,697	24,003	78,730	272,519
1980	76,015	1,250	2,317	7,406	16,363	123,486	34,089	124,359	388,186 ²
1981	93,155	2,765	3,249	12,938	15,082	120,942	44,300	87,746	380,177
1982	98,230	4,300	3,904	11,368	19,247	92,541	44,807	86,906	361,303
1983	108,862	6,065	4,677	10,521	22,051	76,474	54,876	92,248	375,774
1984	121,297	6,354	5,257	9,886	39,632	93,429	65,788	100,761	442,404
1985	107,614	5,890	3,793	6,593	24,199	63,260	54,723	78,127	344,199
1986	98,081	4,596	2,917	3,179	18,243	43,237	48,804	52,148	271,205
1987	85,544	5,567	2,309	5,114	17,127	32,667	50,186	39,203	237,717
1988	75,019	6,915	2,903	4,634	16,388	33,351	58,027	28,137	225,374
1989	66,235	4,499	1,913	2,147	14,637	31,855	55,919	14,722	191,927
1990	56,702	3,558	1,667	1,630	7,225	28,730	54,473	13,461	167,446

Year	Denmark	Estonia	Faroe Islands	Finland	Germany	Latvia	Lithuania	Poland	Sweden	Russia	Total
1991	50,640	1,805 ³	2,992	1,662	8,637	2,627	1,849	25,748	39,552	3,196	138,708 ⁴
1992	30,418	1,369	593	460	6,668	1,250	874 ⁴	13,314	16,244	404	71,594 ⁴
1993	10,919	70	558	203	5,127	1,333	904 ⁴	8,909	12,201	483	40,707 ⁴
1994	19,822	905	779	520	7,088	2,379	1,886 ⁴	14,426	25,685	1,114	74,604 ⁴
1995	34,612	1,049	777	1,851	14,681	6,471	3,629 ⁴	25,001	27,289	1,612	117,265 ^{4,5}
1996	48,505	1,392	714	3,132	20,607	8,741	5,521 ⁴	34,856	36,932	3,304	163,993 ^{4,5}
1997	42,581	1,173	33	1,537	14,483	6,187	4,497 ⁴	31,659	29,329	2,803	134,282 ⁴
1998	29,476	1,070	-	1,033	10,989	7,778	4,187 ⁴	25,778	17,665	4,599	102,575 ⁴
1999	38,169	1,060	-	1,570	15,439	6,914	4,371	26,581	17,476	5,211	116,791
2000	32,049	513	n/a	1,824	13,079	6,280	4,721	22,120	19,801	4,669	105,056
2001	29,126	755	n/a	1,724	12,738	6,298	3,852	21,992	21,120	5,032	102,637
2002	21,558	36	n/a	1,053	8,767	4,867	2,964	15,892	15,203	3,793	74,133
2003	22,338	559	n/a	1,168	8,125	4,634	2,900	16,029	14,686	3,707	74,147
2004	20,693	1,278	n/a	888	8,407	5,027	3,382	15,090	15,201	3,410	73,367
2005	19,043	588	n/a	286	9,346	3,996	2,993	12,767	10,558	3,434	63,011
2006	21,425	703	n/a	673	9,558	2,993	3,301	15,080	12,252	3,747	71,306

¹Including Division IIIa.

²Includes catches from United Kingdom (England & Wales) of 2,901 t.

³As reported by Estonian authorities; 1,812 t reported by Russian authorities.

⁴Preliminary.

⁵Includes catches from Norway of 293 t for 1995 and 289 t for 1996.

Table 8.3.2.5 Nominal catch (tonnes) of FLATFISH in Divisions IIIb,c,d. (Data as officially reported to ICES.)
Note: This table will be updated in Autumn 2008.

Year	Denmark	Finland	German Dem.Rep.	Germany, Fed.Rep.	Poland	Sweden	USSR	Total
1963	9,888	-	3,390	794	2,794	1,026	1,460 ¹	19,862
1964	9,592	-	4,600	905	1,582	1,147	4,420	22,246
1965	8,877	-	2,300	899	2,418	1,140	5,471	21,105
1966	7,590	-	2,900	647	3,817	1,113	5,328	21,395
1967	8,773	-	3,400	786	2,675	1,077	4,259	20,970
1968	9,047	-	3,600	769	4,048	1,047	4,653	23,164
1969	8,693	-	2,800	681	3,545	953	4,167	20,839
1970	7,937	-	2,200	606	3,962	464	3,731	18,900
1971	7,212	-	2,500	553	4,093	415	4,088	18,861
1972	6,817	-	3,200	542	4,940	412	3,950	19,861
1973	6,181	-	3,419	655	4,278	724	2,550	17,807
1974	9,686	55 ²	2,390	628	4,668	653	2,515	20,595
1975	8,257	100	2,172	937	5,139	658	6,455	23,718
1976	7,572	194	2,801	836	4,394	582	3,018	19,397
1977	7,239	203	3,378	960	4,879	484	4,754	21,897
1978	9,184	390	4,034	1,106	5,418	396	2,500	23,028
1979	10,376	399	4,396	665	5,137	450	2,670	24,093
1980	8,276	52	3,286	460	3,429	427	2,305	18,235
1981	6,674	78	3,031	704	2,958	434	2,323	16,202
1982	5,818	50	3,608	543	4,214	250	2,596	17,079
1983	6,000	39	3,957	751	2,809	217	2,371	16,144
1984	5,165	43	3,173	662	3,865	176	1,859	14,943
1985	6,506	37	4,290	542	3,533	170	1,528	16,606
1986	6,808	52	3,480	494	5,044	250	1,438	17,566
1987	5,734	58	2,457	757	4,468	273	2,194	15,941
1988	5,092	69	3,227	759	3,030	281	1,605	14,063
1989	4,597	70	3,822	644	2,946	245	1,723	14,047
1990	5,682	59	1,722	820	2,253	257	1,427	12,220

Year	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Sweden	Russia	Total
1991	5,583	248 ³	76	3,055	445 ⁴	n/a	4,009	224	317 ⁵	13,957 ⁶
1992	4,579	164	64	2,287	624	399 ⁶	3,906	337	75	12,435 ⁶
1993	3,275	165	85	2,156	475	155 ⁶	5,101	271	159	11,842 ⁶
1994	5,094	162	79	6,634	337	270 ⁶	4,900	314	173	17,963 ⁶
1995	6,556	102	89	5,146	411	209 ⁶	8,964	661	268	22,406 ⁶
1996	6,387	297	98	3,134	336	401 ⁶	8,836	1,597	774	21,860 ⁶
1997	6,357	334	85	3,311	413	696 ⁶	6,168	1,374	1,131	19,869 ⁶
1998	5,862	355	81	2,955	400	811 ⁶	5,835	677	1,188	18,164 ⁶
1999	5,579	416	82	3,239	563	571	5,787	439	1,013	17,689
2000	6,994	420	453	3,475	434	641	5,602	462	1,445	19,926
2001	8,183	482	503	2,919	619	1,155	6,725	565	1,420	22,571
2002	7,478	515	452	3,011	608	1,100	9,232	447	1,364	24,207
2003	5,684	443	199	2,617	682	1,115	7,343	380	1,430	19,893
2004	6,818	406	121	3,082	777	909	8,828	308	1,292	22,541
2005	5,904	403	105	2,489	1,720	967	11,239	415	1,428	24,670
2006	5,486	352	103	2,541	1,169	386	9,583	301	1,237	21,158

¹Including Division IIIa.

²Excluding subsistence fisheries.

³As reported by Estonian authorities; 236 t reported by Russian authorities.

⁴As reported by Latvian authorities; 466 t reported by Russian authorities.

⁵Includes 141 t reported by Russian authorities for Lithuania.

⁶Preliminary.