



North Sea herring

In the Netherlands, the herring (*Clupea harengus*) has been the number-one selling fish species for many years. Herring fishery is one of the oldest existing fisheries in the Netherlands. In 2006, the Dutch herring fishery was brought under the eco label of the Marine Stewardship Council (MSC).

Herring (*Clupea harengus*) is a pelagic mid-water species that is widespread throughout the Northern Atlantic Ocean - it occurs off the coast of Norway, around Iceland and Greenland, and off the east coast of the US and Canada.

Herring (*Clupea harengus*) is a sleek, fairly small fish with one short fin on its deep-blue back. Its bones are soft. Approximately one quarter of its body weight can consist of fat. Hundreds of thousands of herring live together in shoals and feed on plankton and the smallest of sea animals. North Sea herring can grow to be eight to ten years old. After two to three years, the herring is an adult fish and approximately twenty centimetres long. During the day the herring stays in deeper water, whilst at night the shoal rises to feed on plankton. Tiny copepods, no larger than a pin head, are also popular food. The herring uses its gill rakers to retain the food that flows into

its open mouth with the seawater and flows out through its gills after it has been filtered.

The animal plankton the herring feeds on is rich in fat, which makes the herring also rich in fat, particularly in summer.

Each year, the herring goes through the same cycle. During the winter months it is thin and in spring the herring will start to grow due to the presence of plankton in the water. May, when the herring is fat enough, heralds the start of the annual season for matjes-herring fishing. This season usually lasts until July. This herring may be called *Hollandse Nieuwe* when it is rich in fat, and gutted, salted and filleted in the traditional Dutch way. In Belgium, *Hollandse Nieuwe* (matjes herring) is known as 'maatjes', whilst the Germans call it 'Matjes'.

Social debate

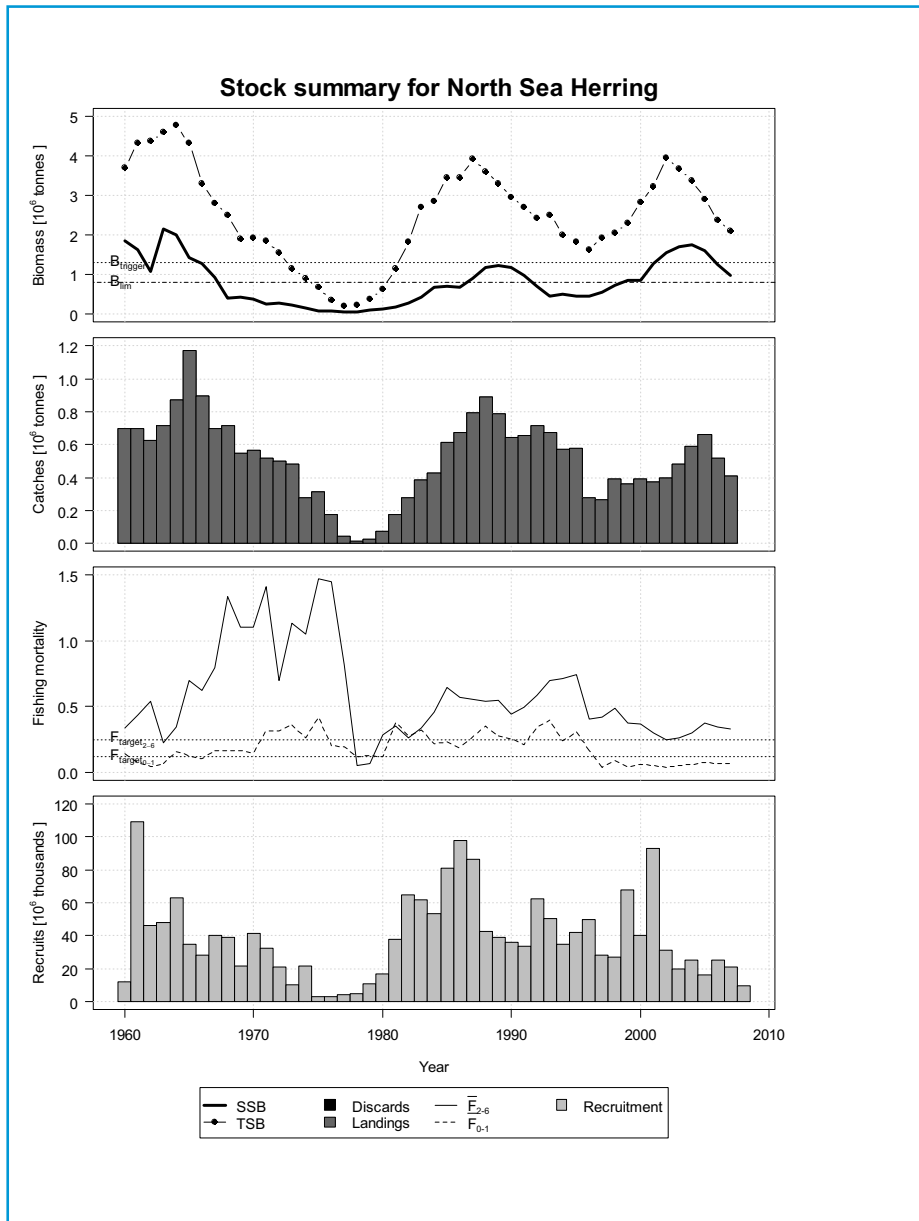
Nature organisations such as the WWF and the North Sea Foundation have put herring in the green column of their fish-purchase guide, the *VISwijzer*. The message is that it is 'an excellent choice', because the catch methods do not constitute a burden on nature or the environment. Part of the fishery for North Sea herring carries the MSC certificate, whilst certification for the other fisheries for this stock is nearly completed.



The facts in brief:

- The strength of the year classes of the North Sea herring stock has not fluctuated less than a factor forty during the past 30 years. Although this variability may lead to sudden drops in the fish stock, and with poor management it may even lead to a complete collapse of the stock, it also means that herring stocks are resilient. During past decades, the North Sea herring stock recovered from very low levels. (See Appendix 1).
- The international fishery researchers (ICES) have said that the North Sea herring's current series of six weaker year classes was not caused by too high a fishing effort. The cause must be sought in one or several changes in the natural environment of the herring population. For example, there are indications of changes in the natural environment in the North Sea that influence the supply of suitable food for the larvae and early life stages of the herring. The exact cause of the poor growth is not yet known, nor whether this constitutes a temporary or more structural phenomenon. With the current poor growth, the fishing effort on North Sea herring and the size of the spawning stock are outside the biologically safe limits, and therefore the TAC for North Sea herring has been cut by more than 60% over the past three years. The TAC is currently at a low level.
- Since May 2006, herring fishery has been carried out by members of the European Pelagic Freezer-trawler Association (PFA) under the sustainability certificate from the Marine Stewardship Council (MSC). The European Pelagic Freezer-trawler Association (PFA) unites the Dutch fishery companies that practise herring fishery. With this certification this fishery was one of the first major European fisheries to be MSC certified.

Fish facts: North Sea herring (version september 2008)



- Dutch herring fishery is mainly carried out by freezer trawlers that sort and freeze the fish immediately after the catch for subsequent sale and/or processing. Only two North Sea cutters still practise herring fishery.
- As pelagic fish like herring swim in shoals of the same species, the fishery is very targeted, which means it is possible to fish virtually without undesirable bycatch. The bycatch of cetaceans in pelagic trawler fishery, such as herring fishery, is virtually nil.
- For the Netherlands, the herring in the southern and northern North Sea is far and away the most important. Dutch trawlers are allowed to fish the herring stock northwest and southwest of Scotland, and the so-called Atlanto herring to a limited extent.

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Management measures

The two challenges in the management of herring fishery are the high catch capacity of the modern fleets and the natural fluctuations of the stock, which has consequences for the manner in which the stock should be managed. The most important management measures for North Sea herring fishery are as follows:

- A management plan, adopted by the EU and Norway, based on a bandwidth for fishery mortality. This is applied to the fishery for adult herring for human consumption and to the fishery for juvenile herring for fish-feed production.
- This management plan also includes target levels for the size of the spawning stock that serve as triggers for supplementary measures. During the past four years, these triggers have worked well and the TACs for human consumption and fish feed were cut significantly. As management responded well to the changing stock levels, the MSC has managed to maintain its certification for the PFA. Unfortunately the real cause of the falling growth of this stock is still totally unclear, although the biologists state that fishery is not the cause.
- The main instrument that fishery can employ to control the fishing effort on herring is the annual TACs for the various fishery fleets that fish for North Sea herring. For example, halving that TAC in 1996 prevented a possible collapse of the North Sea stock. Since then the management plan has been renewed, the spawning stock rose to historically high levels, dropped again, and during the past three years the TAC has been cut significantly as a result (See Appendix 2).
- The introduction of a separate TAC for the bycatch of herring in the sprat fishery, which is used for the fishmeal industry, with the objective of reducing mortality amongst young herring, has also proven successful.
- For herring there is no minimum size for landed fish, which is the case for many other fish species. This instrument is only useful for fishery methods, where mesh width is an effective method to select the various fish species. However, this does not apply to herring, as this fish swims in tight shoals and other fish are hardly caught at all.

Development of the TAC

Herring in Subarea IV, Division VIIId, and Division IIIa (autumn spawners): advice and catches

Year	ICES advice	Predicted catch corresp. to advice	Agreed TAC ¹	Bycatch ceiling Fleet B	ICES Landings ⁴ IV, VIIId	ICES Catch ⁵ IV, VIIId	ICES Catch Autumn spawners IIIa,IV,VIIId
1987	TAC	610	600		625	625	792
1988	TAC	515	530		710	710	888
1989	TAC	514	514		669	717	787
1990	TAC	403	415		523	578	646
1991	TAC	423	420		537	588	657
1992	TAC	406	430		518	572	716
1993	No increase in yield at F>0.3	340 ²	430		495	540	671
1994	No increase in yield at F>0.3	346 ²	440		463	498	571
1995	Long-term gains expected at lower F	429 ²	440		510	516	579
1996	50% reduction of agreed TAC ²	156 ²	156 ³	44	207	233	275
1997	F=0.2	159 ²	159	24	175	238	264
1998	F(adult)=0.2, F(juv)<0.1	254 ²	254	22	268	338	392
1999	F(adult)=0.2, F(juv)<0.1	265 ²	265	30	290	333	363
2000	F(adult)=0.2, F(juv)<0.1	265 ²	265	36	284	346	388
2001	F(adult)=0.2, F(juv)<0.1	See scenarios	265	36	296	323	363
2002	F(adult)=0.2, F(juv)<0.1	See scenarios	265	36	304	353	372
2003	F(adult)=0.25, F(juv)=0.	See scenarios	400	52	414	450	480
2004	F(adult)=0.25, F(juv)=0.1	See scenarios	460	38	484	550	567
2005	F(adult)=0.25, F(juv)=0.1	See scenarios	535	50	568	639	664
2006	F(adult)=0.25, F(juv)=0.12	See scenarios	455	43	490	511	515
2007	Bring SSB above B ^{pa} by 2008	See scenarios	341	32	361	388	407
2008	F(adult)=0.17, F(juv)=0.08 (HCR)	See scenarios	201	19			
2009	Adopt one of the new proposed HCRs	See scenarios					

¹Weights in '000 t.

²Catch in directed fishery in IV and VIIId.

³Revision of advice given in 1995.

⁴Revised in June 1996, down from 263.

⁵Landings are provided by the working Group and do not in all case correspond to official statistics.

⁶ICES catch includes unallocated and misreported landings, discards, and slipping.

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Trade and processing

In most cases herring is automatically gutted, salted and frozen on board. Part of the herring is frozen whole, the so-called 'plate-herring'. Freezing is a legal obligation in order to render harmless the herring worm (a parasite hazardous for man), which can be present in the fish.

Herring is processed in three types of companies - producers/traders of salted herring, pickled herring, and herring and mackerel smoking companies. Then there are the suppliers of raw materials for the production companies. Matjes herring is processed and traded by these specialised companies, but also by the domestic fish wholesalers.

The herring-processing industry consists of approximately 15 companies with an industry turnover of € 115 million. The industry turnover of the current herring processing companies has remained virtually the same since 2000. In view of the general inflation percentage over this period (14%), its turnover fell in real terms.

Calculated by wholesale value, more than half of the production value is destined for the domestic Dutch market. The most important companies in the sector supply both domestic and foreign purchasers. The export products are mainly supplied to wholesalers and importers, whilst fish wholesalers and fish retailers are the main domestic purchasers.

Destination of the products of the herring-processing industry and wholesalers (salted and pickled herring and other products)

Destination	Turnover Euro m.	Turnover Percentage
Export	30	45
Domestic sales (Internal deliveries fish industry and wholesalers)	55	35
	30	20
Total	115	100

Of the total allowable catch of North Sea herring of 201.000 tonnes (2008) 30.000 tonnes are processed into Hollandse Nieuwe. This amounts to a total of 200 million herrings. 50% of this amount is exported to Germany, 42,5 % stays in the Netherlands and 7,5% is exported to Belgium. The remaining quantity North Sea herring (170.000 tonnes) is not Hollandse Nieuwe, but is often processed in to rollmop, smoked herring or is frozen whole on board and exported.

Herring products are mainly exported to Germany and Belgium. However, as a result of the economic slowdown in Germany, exports of salted herring have stagnated since 2000.



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WOULD YOU LIKE TO KNOW MORE?

If you would like to know more about herring and/or the measures taken by the Dutch fishery sector, please visit www.pvis.nl where you will find more information.

References

1 ACOM (2008)