

SPECIES INFORMATION SHEET

Clupea harengus

English name: Herring	Scientific name: <i>Clupea harengus</i>	
Taxonomical group: Class: Actinopterygii Order: Clupeiformes Family: Clupeidae	Species authority: Linnaeus, 1758	
Subspecies, Variations, Synonyms: <i>Clupea harengus membras</i> – Baltic Sea herring	Generation length: 6.7 years	
Past and current threats (Habitats Directive article 17 codes): –	Future threats (Habitats Directive article 17 codes): –	
IUCN Criteria: –	HELCOM Red List Category:	LC Least Concern
Global / European IUCN Red List Category LC/NE	Habitats Directive: –	
Previous HELCOM Red List Category (2007): LC for the species but EN for the autumn spawning form		
Protection and Red List status in HELCOM countries: All: TAC regulation by EU, Denmark –/–, Estonia –/LC, Finland –/LC, Germany –/* (Not threatened, Baltic Sea), Latvia –/–, Lithuania –/–, Poland <i>Minimum landing size 16 cm in some coastal areas</i> /–, Russia –/–, Sweden –/LC		

Distribution and status in the Baltic Sea region

The Baltic herring *Clupea harengus membras* is a subspecies of the Atlantic herring *Clupea harengus*. Baltic herring as a subspecies includes populations of autumn-spawning herrings mainly in the western and southern Baltic Sea and spring-spawning herring mainly in the eastern and northern parts of the sea basin. There is wide overlap in the distribution of the different forms.

The autumn-spawning Baltic herring was considered threatened in HELCOM (2007) possibly due to fisheries. The decline of the autumn-spawning Baltic herring occurred during the 1940s and 1950s at a time when fishing induced mortality was low compared to the situation today. Hence, the main reason for the decline may be in oceanographic influences and not in fisheries (Anokin 1971, Sjöblom 1978, Ojaveer 2006).

ICES estimates of spawning stock biomass show more than 50% decrease over the last 20 years in the Western Baltic spring spawning stock. The decrease in biomass is mainly a decline in individual biomass, not in numbers. During the same time there is a 25% decrease in Baltic proper but an increase in Bothnian Sea and in Riga Bay and a stable population in Bothnian Bay. Summing total spawning stock biomass for the whole Baltic shows no significant trend over the last 20 years.



Catch of herring. Photo by Olavi Kaljuste, Swedish University of Agricultural Sciences.

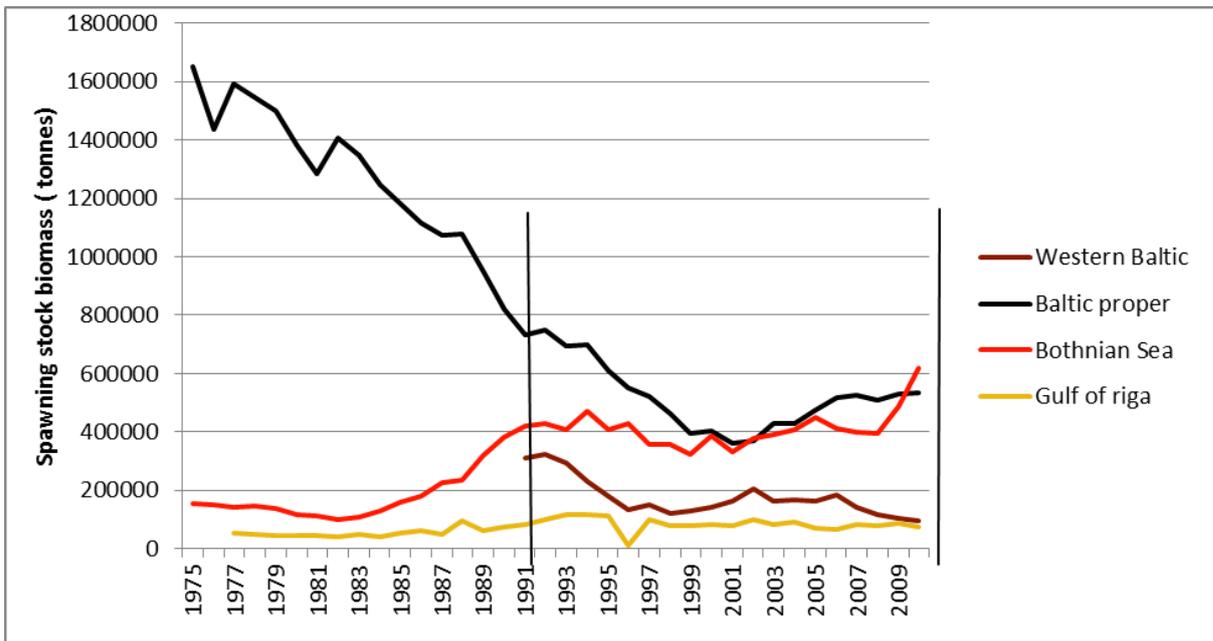
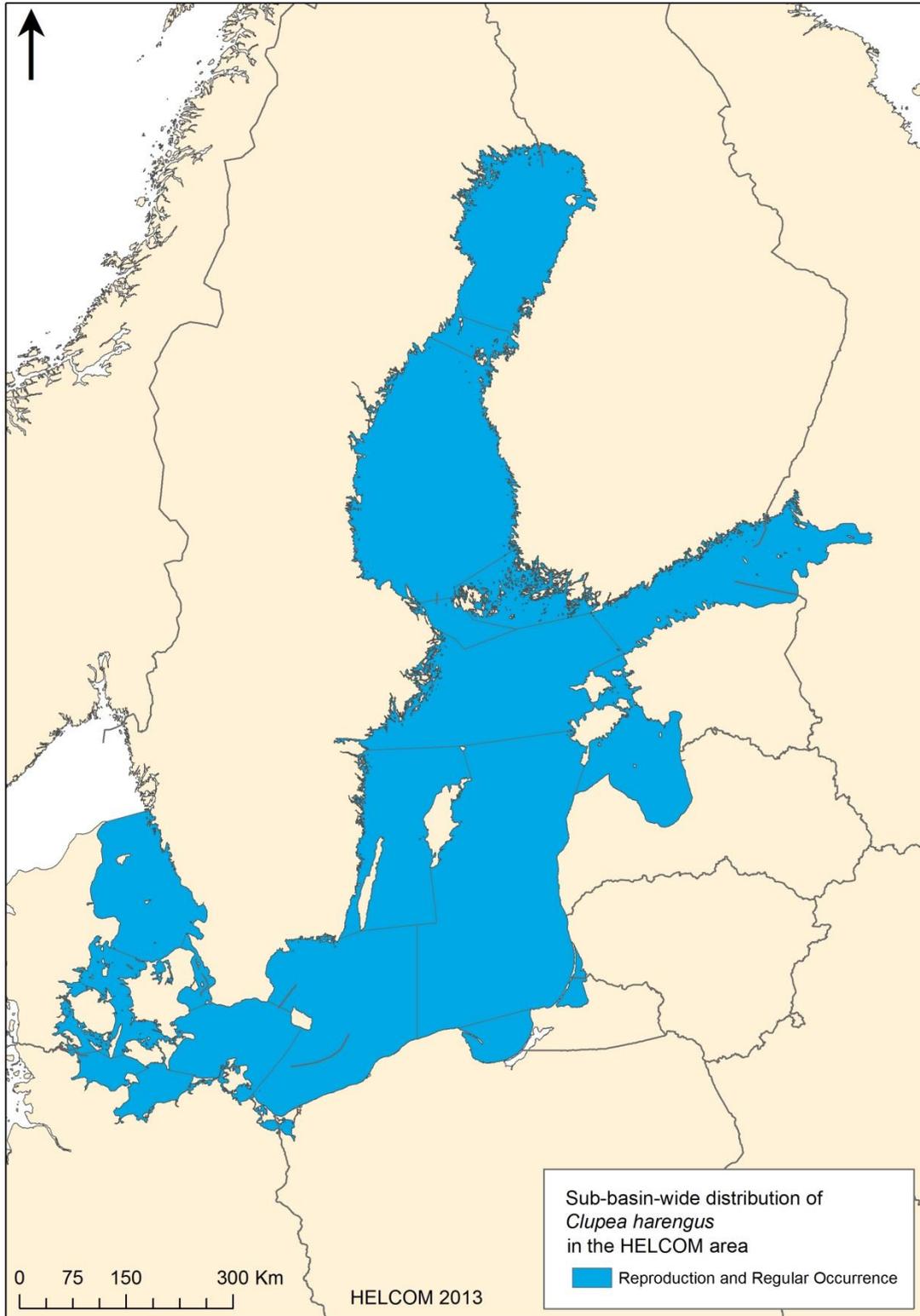


Fig. 1. Trends in spawning stock biomass, numbers from ICES (2011). The vertical lines indicate the assessment period 1990–2010.

Distribution map

The map shows the sub-basins in the HELCOM area where the species is known to occur regularly and to reproduce (HELCOM 2012).



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Habitat and ecology

The Baltic Sea herring is a pelagic species, spending the day close to the bottom but the night near the surface. Light is an important factor controlling its vertical distribution. It schools in coastal waters, with complex feeding and spawning migrations. Spawning occurs from spring to late autumn (see systematics below). The eggs are deposited on the substrate. The species is a facultative zooplanktivorous-filter feeder, i.e. it can switch to filter-feeding if the food density and particle size is appropriate. Herring mainly feeds on planktonic copepods. Other characteristics are schooling, silvery sides, excellent hearing, and very fast escape response that act as anti-predator devices (Froese & Pauly 2005). It is an important prey species for many predators including cod and seals (c.f. Gårdmark et al. 2012).

The taxonomy of the whole *Clupea harengus* species complex is under discussion. While some scientists have defined the spring and autumn-spawning populations as sibling species of the Baltic herring (e.g. Ojaveer 2006), others have shown these to be environmentally flexible phenotypes depending on nutritional status of individuals (Anokina 1971, Aneer 1985, Rajasilta 1992). However, the spring and autumn-spawning Baltic herrings differ in morphological and meristic characters (eg. Heincke 1998). On the other hand, the observed differences are mainly a result of environmental conditions during the early ontogeny (Parmanne 1990, Hognestad 1995, Hulme 1995). Hence, differences in morphology cannot be used to infer genetic separation. However, Jørgensen *et al.* (2005) showed that one spring-spawning population in Western Baltic Sea (Rugen population) appears to differ genetically from other spring-spawning populations in the Baltic. One reason for the difficulty to detect genetic divergence of Baltic herring (besides a possible high gene flow) is that genetic variation of the Baltic herring appears to be low (Johannesson & André 2006).

Description of major threats

No major threats perceived at the moment but eutrophication can be a threat in some areas (Urho et al. 2003).

Assessment justification

Autumn spawning herring is listed as EN in HELCOM (2007), however assessing all herring as one species results in LC status. ICES estimates of spawning stock biomass (ICES 2011) show more than 50 % decrease last 20 years in the Western Baltic spring spawning stock. The decrease in biomass is mainly a decline in individual biomass, not in numbers. In the rest of Baltic Sea there is a 25% decrease in Baltic proper (ICES SD25-29+32) but an increase in Bothnian Sea (SD30) and in Riga Bay (SD 29:2). Furthermore, according to catch per unit effort in trapnet fishery there is a stable population in Bothnian Bay. Summing up the total spawning stock biomass for the whole Baltic shows no significant trend for the last 20 years.

This is a widely distributed species with high population size and according to estimation of total spawning stock biomass in the HELCOM area no significant decline the last three generations can be detected.

Recommendations for actions to conserve the species

No protection actions currently needed in HELCOM area. Fishery statistics however should continue to be monitored to prevent overfishing.

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Common names

D - Atlantischer Hering; GB – Herring; EST - Rääm; DK - Sild; FIN – Silakka; LV - Reņģe; LT - Strimelė; PL - Śledź; RUS - Atlanticheskaja sel'd'; S – Sill/Strömming

References

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