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**Trophic interactions in the Baltic Sea: Clupeid predation on cod early life stages**

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**Abstract**

Predation on cod (*Gadus morhua*) eggs by clupeids sprat (*Sprattus sprattus*) and herring (*Clupea harengus*) is known to be a key factor of early life stage mortality of Baltic cod and an important process affecting cod reproductive success and recruitment. Predation pressure on cod eggs by clupeids has been considered as a main driver preventing recovery of the stock in the 1990s. In the first decade of the 2000s, signs of improved cod recruitment became evident that could not be related to environmental conditions alone. We present results from an analyses of stomach contents of clupeids collected 2004-2008 to elucidate the possible contribution of changes in predation pressure on cod eggs to the increased reproductive success. The consumption of cod eggs in the single most important cod spawning area, the Bornholm Basin, was estimated with new methodological approaches and compared with updated time series from the 1990s. This resulted in more realistic estimates compared with earlier studies that consistently overestimated predation pressure by clupeids. Additionally, the stage- and species-specific selection of fish eggs by clupeids was analyzed to investigate whether eggs of other fish species are to a similar extent subject to predation and may trigger predation on cod eggs, and how predation pressure differs between egg development stages. Results clearly show that changes in predation pressure are likely to have contributed to improved cod recruitment.

**Keywords:** predation, fish egg consumption, recruitment, egg development stages

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