

Do Greenland halibut, *R. hippoglossoides*, spawn in inshore Disko Bay, West Greenland?

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INTRODUCTION

Whether Greenland halibut spawn in inshore west Greenlandic fjords, migrates to spawning grounds in the Davis Strait, or never ripe their gonads has been debated for decades (e.g. Jensen, 1935; Smidt, 1969; Riget & Boje, 1989; Riget *et al.*, 1992; Jørgensen & Boje, 1994; Rasmussen *et al.*, 1999; Simonsen & Gundersen, 2005)

To study if maturation and spawning occurs in the fjords of Disko Bay, samples from the fishery in May, October and December 2002 were collected. These samples completed a previous sampling series from February to September in 1998 (Simonsen & Gundersen, 2005) Fig. 1.



Longline fishery for Greenland halibut in Disko Bay

RESULTS

In general the proportion of mature specimens in the Disko Bay sub-area was markedly lower than what previously described from the Davis Strait (Gundersen *et al.*, in prep) and seemed similar to unpublished data from the Baffin Bay (Unpublished data, Møre Research and Greenland Institute of Natural Resources) (Fig. 2).

The findings indicate a population structure similar to what might be expected for a nursery area, where most specimens migrate out of the system as they mature; a finding supported by Jørgensen (1997) which found an increase in fish size moving southwards towards the Davis Strait.

In samples from the Disko Bay collected in December gonadosomatic index ranged up to 8.8% (Fig. 3). Oocyte modal diameter in the leading cohort was 2 300 µm, which is larger than previously reports for August and September (1 400 to 2 000 µm respectively, Simonsen & Gundersen, 2005). Individuals in maturing and late maturing condition were seen in December indicating that a low portion of females were preparing for spawning.

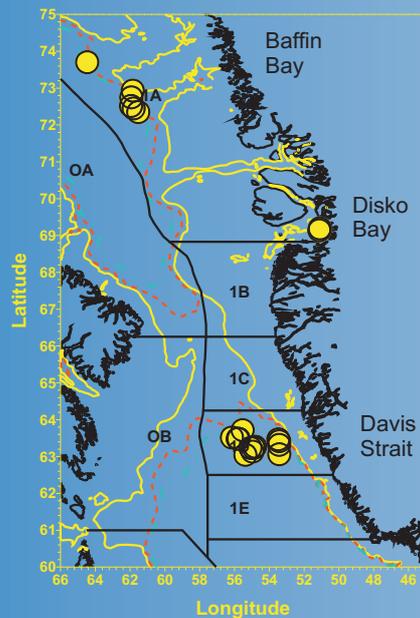


Figure 1 Map showing sampling locations along West Greenland.

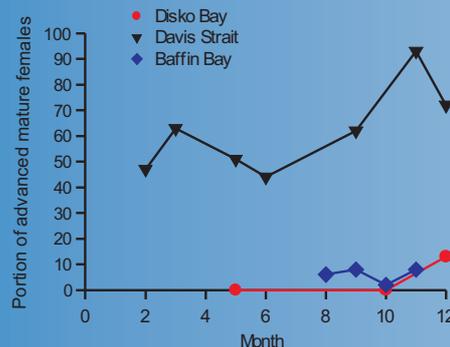


Figure 2 Portion of maturing females in catch by month and sub-area

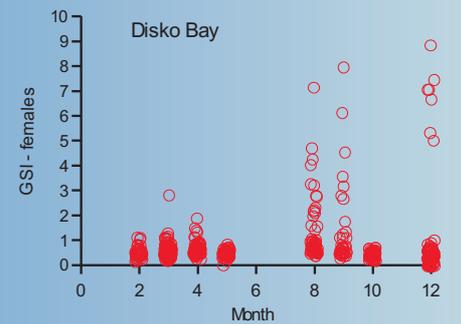


Figure 3 Gonadosomatic Index for females in Disko Bay by month.

CONCLUSIONS

- The inshore populations of Greenland halibut in the Disko Bay show a population structure similar to what might be expected in a nursery area, with mostly immature and early maturing specimen.

- Only few female Greenland halibuts with advanced maturing gonads were recorded inshore.

- A limited amount of spawning might occur within the Disko Bay. If this is the case it is not likely that this will support the relatively large fishery occurring within the Disko Bay area.

- Based on this, it seems as maturing specimens migrate out of this fjord-system before spawning, maybe related to a migration to the Davis Strait as previously suggested.

- The study supports previous suggestions that the main recruitment to the Disko Bay population is supported by spawning occurring elsewhere.

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