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A short note on recent tagging experiments of juvenile Greenland halibut.

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Juvenile Greenland halibut were tagged in the known nursery grounds of the Northeast Arctic stock around Svalbard archipelago during three surveys in September 2006, 2007 and 2008 respectively. The fish were caught with a small demersal trawl (Campelen 1800) equipped with a codend aquarium (Fig.1). On deck, each fish were taken carefully out of the aquarium, length measured, injected with oxytetracycline (OTC) and tagged with a green T-bar anchor tag (Fig 2). They were then transferred to a holding tank and released in batches of several tens (Fig 3) in order to reduce predation by seagulls.

A total of 24132 Greenland halibut were tagged and released in Svalbard waters during the three surveys. They ranged in length at release from 10 to 87 cm, with a mean of 33.8cm. Figure 4 top shows the length composition of the released individuals. Since the juvenile fish were released far away from the main fishing grounds and since Greenland halibut grow slowly and mature at high ages, low recapture rates were expected for the first several years until the fish had moved to the fishing and spawning grounds along the continental slope between Norway and Svalbard. The high number of tag releases was based on assumed natural mortality rate M=0.2, a mean time of 3 years before they are available on the fishing grounds, and a life long return rate of 3% from the time they are available (similar to previous tagging studies of adult Greenland halibut). This results in an expected total number of 300-400 recaptures, but would be less if juvenile mortality is higher, if growth is slower, and if migration occurs to non-fished areas.

The experiment was announced in Norwegian, Russian and Icelandic newspapers and a reward of 500 NOK was given for recaptured fish (whole fish).

Until 25 April 2011 a total of 77 fish were recaptured over large parts of the Northeast Atlantic (Figure 5). The recaptures represent only 0.3% of the released fish and were caught after between 1 - 1917 days at large (mean 639 days). 27 of these recaptures (35%) were from areas west of 4°W, and 23 of them were taken west of 11°W. These 27 western migrants were captured after 604 - 1917 days at large (mean 1170 days). Figure 6 shows the development of recaptures per year for each area.

The average length at release of the recaptured individuals was 40.5 cm, which was significantly larger than the mean length of all released individuals

(33.8cm). The mean length of the western migrants was not significantly different from the other recaptured individuals (Fig 4).

The recaptures from Icelandic waters were primarily taken in the northern part of the country. Although the western migrants constituted a relatively large proportion of all recaptures (35%), the total recapture rate is so far extremely low and interpretation of the results should be made with caution. However, it is noted that a nursery area for the West Nordic stock has not been identified and that ongoing genetic analyses show small differences between samples covering the areas of recaptures, whereas samples from southwest of Iceland and further westwards seem to be more different. Both tagging and genetic data will be further analyzed and might in near future cast light on the stock complex of Greenland halibut in the North Atlantic. At present, it cannot be ruled out that a major connection exist between the Northeast Arctic and the West Nordic stock units.