

SCIENTIFIC COUNCIL MEETING - JUNE 2013

Denmark/Greenland Research Report for 2012

Compiled by

Greenland Institute of Natural Resources
P.P. Box 570, DK-3900 Nuuk, Greenland

This report presents information on catch statistics from the commercial Greenland fishery in 2012. Furthermore, the report gives a brief overview over the research carried out in 2012 by the Greenland Institute of Natural Resources.

WEST GREENLAND (NAFO SUBAREA 1)

A. Status of the fisheries

Provisional statistics for the fisheries from 2009 to 2012 are presented in Table 1. Additional information on the status of the fisheries is as follows:

1. Shrimp

The shrimp stock off West Greenland is distributed in NAFO SA 1 (Div. 1A-1F), but a small part of the habitat, and of the stock, intrudes into the eastern edge of Div. 0A (east of 60°30' W). Northern shrimp is found mainly in depths between 150 and 600 m. The stock is assessed as a single population. The Greenland fishery exploits the stock in SA 1, Canada in Div. 0A.

Three fleets, one from Canada and two from Greenland (vessels above and below 75 GRT) have participated in the fishery since the late 1970s. The Canadian fleet and the Greenland offshore fleet (> 75 GRT) have been restricted by areas and quotas since 1977. The fishery by the Greenland coastal fleet (< 75 GRT) was unrestricted until 1997, when quota regulation was imposed. Mesh size is at least 44 mm in Greenland, 40 mm in Canada. Sorting grids to reduce by-catch of fish are required in both of the Greenland fleets (but dispensation from this has been granted for all vessels under 75 GRT from 2001 until 2011 for safety reasons) and in the Canadian fleet. Discarding of shrimps is prohibited.

The annual TAC advised for the entire stock for 2004-2007 was 130 000 tons live-caught weight, which was reduced to 110 000 tons for 2008-2010. The advised TAC for 2011 was 120 000 tons. The advised TAC for 2012 is 90 000 tons and the advised TAC for 2013 is 80 000 tons.

The TAC set by the Greenland authorities for SA 1 was 114 570 tons in 2009 and 2010 and 124 000 tons in 2011. The TAC for SA 1 for 2012 was 101 675 tons, which was reduced to 90 000 tons for 2013. A TAC of 18 417 tons was set by the Canadian authorities for Div. 0A east of 60°30'W for 2007-2011, which was reduced to 16 921 tons in 2012 and 15 504 tons in 2013.

Greenland requires that logbooks should record catch live weight, but for shrimps sold to on-shore processing plants an allowance was made for crushed and broken shrimps in reckoning quota draw-downs, which were based on weight sold, not on weight caught. From 1st of January 2011 the quotas is required to be drawn down by the amount caught without allowances for shrimps landed in poor condition.

Catches peaked in 1992 at 105 000 tons, but then decreased to around 80 000 tons by 1998 owing to management measures. Since then increases in allowed takes have been accompanied by increased catches.

The logbook recorded catches in 2005 and 2006, around 157 000 tons, were the highest recorded. Total catch for 2008 was 153 900 tons, total catch for 2009 was 135 450 tons and for 2010 was 134 000 tons. Total catch for 2011 was 124 000 tons. Total catch for 2012 is approximately 110 000 tons.

The overall combined index of standardized catch rates (CPUE) for the 3 fleets fluctuated without trend by a factor of 2 between 1976 and 1987. It then dropped precipitously to the lowest levels in the series in 1990–91, and stayed fairly flat until 1996. Since then, the unified CPUE index increased markedly and sustainedly for 9 years, reaching a plateau in 2004–2008, to turn downward in 2009, and to decrease yet further in 2010. In 2011, the combined index increased by 10% over its 2010 value to stand at the fifth highest value ever. In 2012 the combined index decreased reaching the level seen in 2009–2010.

According to logbook records, the early fishery was concentrated in NAFO Division 1B, but from the late 1980s the fishery spread southwards, - and by 1996–98 Divisions 1C–1F were producing nearly 70% of the catches. Since then the range of the fishery has contracted northwards and since 2007 Divisions 1C–1F have yielded only about 10% of the catch.

2. Greenland halibut

The total catches of Greenland halibut by Greenland vessels in NAFO Subarea 1 (excluding Div. 1A inshore) amounted in to 8 522 in 2012. 5 810 tons were taken off shore in Div. 1AB (north) and 2 272 tons were taken off shore in Div 1C–1F (south), mainly in Div. 1CD. The reported catches from inshore in Div. 1B–1F amounted to 440 tons. The offshore catches were exclusively taken by trawlers (Fig. 1), while the inshore catches were taken mainly by gill net and longlines.

The inshore fishery in Div. 1A amounted to 21.283 tons in 2012 and was concentrated in three areas in Disko Bay, Uummannaq and Upernavik, but a small fishery is evolving further north inshore in division 1A (50 tons in 2012). Landings in East-Greenlandic fjords amounted to 93 tons in 2012. The fishery is conducted by long lines and gill nets.

Commercial fisheries data. CPUE data, based on logbooks reported to the Greenland authorities, were available from four Greenland trawlers. The CPUE for all vessels combined increased in Div. 1AB from 0.82 ton/hr in 2009 to 0.93 ton/hr in 2010 and further to 1.30 ton/hr in 2011 and remained at that level in 2012 (1.32). The highest level in the time series apart from small trial fisheries in 2000 and 2001.

In Div. 1CD the CPUE for three Greenland vessels fishing there has been fluctuating between 0.55 tons/hr and 0.87 ton/hr since 2000. The CPUE has been rather stable since 2005. In 2011 the CPUE was 0.87 tons/hr but decreased slightly to 0.82 tons/hr in 2012.

Length frequency samples sampled by Greenland were available from Norwegian trawlers fishing in Div. 1D.

3. Cod

The cod found in Greenland is derived from three separate “stocks” that each is labelled by their spawning areas: I) offshore West Greenland waters; II) West Greenland fiords and III) offshore East Greenland waters. Lastly Icelandic inputs are believed to have been responsible for the previous large year classes in Greenland (i.e. 1984 and 2003). A proportion of these cod return to Iceland when reaching maturity.

Previously the stocks have been assessed together as it was difficult to sample and assess stock status of the various stock components separately. From 2012 the inshore component (West Greenland, NAFO Subarea 1) was assessed separately from all offshore components. The stocks are assessed by ICES see the North-western Working Group (NWWG) report, April 2013 and ACFM report 2013.

In 2011 a management plan was agreed for the offshore cod stocks. The overall objective is to “rebuild the spawning stock in both West and East Greenland” and that “stable recruitment is used as an indicator of the spawning population stable condition”. The overall strategy to fulfill the objective was that ICES advice must be

followed. The management plan is under revision in 2013.

There are no explicit management objectives for the inshore cod in Greenland.

The cod fishery in Greenland consists of two components, an offshore fishery and an inshore fishery. The offshore fishery completely collapsed in 1993. From 1994 to 2001 no directed offshore cod fishery has taken place. In the 2000s catches have gradually increased with maximum catches in 2008. Between 2008-2010 offshore areal closures were implemented in order to protect the spawning stock in offshore areas. The management plan for the offshore fisheries states that ICES advice must be followed and the advice for 2012 was that no directed fisheries should take place. However an experimental fishery was allowed in order to collect information on the distribution and composition of the cod stock. The TAC for the experimental fishery was set at 5,500 tons. Total offshore catches in 2012 amounted to 5,700 tons.

The Greenland inshore commercial cod fishery in West Greenland started in the 1920s. The fishery gradually developed culminating with catch levels above 30,000 tons annually in the 1960s. Catches then fluctuated between 5,000 and 35,000 tons in the 70s and 80s. The stock size then declined and the catches went below 500 tons in the 1990's. In the 2000s catches have gradually increased with maximum catches in 2007 and 2008 of 13,000 tons. The inshore fisheries did not require a license until 2009 and has historically not been constrained by catch ceilings (for 2009 a TAC of 10,000 tons was introduced). In 2012 a TAC of 15,000 tons was allotted to the inshore fisheries. In 2012 the catches from the coastal fleet amounted to 11,000, which is the same as last years catch. The coastal fleet catches peaks during summer where the dominant pound net fishery takes place.

The offshore Greenland spawning component has not been fished during the last 15 years. Surveys and exploratory fishery now suggest dense concentrations of large spawning cod in East Greenland north of 63°N. The area is limited in distribution compared to the spawning grounds observed historically. Recruitments in the offshore area have improved since the end of the 1990s although it is still low compared to the recruitments before the stock was depleted.

Inshore spawning occurs in many fiords and recruitment has increased in recent years in the areas surveyed. Recruitment is now well above the lows observed in the late 1990's.

4. **Salmon**

Atlantic salmon migrates to Greenland from most salmon producing countries around the North Atlantic and in Greenland only one spawning population Atlantic salmon is known. The modern fishery for Atlantic salmon fishery in Greenland waters started around 1960 and peaked in the early seventies at a catch level of more than 2000 tons a year. The fishery was quota regulated from 1972, but due to declining stocks NASCO in June 1998, agreed that no commercial fishery for salmon should be allowed, but that the catch at West Greenland should be restricted to *'that amount used for internal consumption in Greenland, which in the past has been estimated at 20 tonnes'*. Since then export of salmon from Greenland has been banned. The salmon caught along the shores of West Greenland are mostly (>90%) non-maturing 1SW salmon, most of which are destined to return to home waters in Europe or North America as MSW fish if they survive. In 2012 total nominal catches amounted to 34 tons including 1 tons from East Greenland.

5. **Capelin**

The capelin fishery in West Greenland is carried out inshore and in the spawning season only (May-July). Catches are low and have been for the last decade with highest catches being 267 tons in 2004 and in 2012 catches were 59 tons. The main part of the catches is produced as whole frozen fish for bait and local consumption, while a smaller part is dried and stored as food for sledge dogs in the winter season. The majority of the catches were taken in the northern part of West Greenland (NAFO 1A and 1B).

6. **Redfish**

Two species of redfish of commercial interest occur off West Greenland inshore and offshore, golden redfish

(*Sebastes marinus* L.) and deep-sea redfish (*Sebastes mentella* Travin). Relationships to other North Atlantic redfish stocks are unclear. Redfish catches in West Greenland are reported as redfish (unspecified, mainly by-catch), golden redfish and beaked redfish (pelagic redfish).

Demersal redfish

In 2012 logbook reported by-catch by Greenlandic shrimp vessels of un-specified redfish amounted to 26 tons. Catches reported as golden redfish is a mixture of *sebastes marinus* and *sebastes mentella* taken mainly inshore partly as a bycatch in other fisheries. In 2012 reported landings of Golden redfish amounted to 128 tons. There is no forecast for golden and deep-sea redfish stocks in West Greenland and the advice from NAFO is “no direct fishery”.

Pelagic redfish

The aggregations of pelagic redfish *S. mentella* found in the NAFO Convention Area belong to the same stock of pelagic redfish from the Irminger Sea. The stock is assessed by ICES (NWWG report 2013) and the assessment covers the pelagic redfish in ICES Divisions Va, Vb, and XIV and in the NAFO Div. 1F, 2H and 2J. The pelagic fishery on *S. mentella* in NAFO Div. 1F started in 1999 and from 2000 - 2009, significant catches with up to 20% of total catches as in 2003 were taken in NAFO Divisions 1F and 2J. In 2012, 3113 t were taken in the NAFO 1F. No catches were reported by the Greenlandic fleet.

7. Grenadiers

There are two species of grenadiers of commercial interest in Greenland: roundnose grenadier and roughhead grenadier. Inshore catches in division 1A are roughhead grenadier. The catch reported is taken as by-catch in the Greenland halibut fishery. No forecast – the biological advice is “no direct fishery”.

8. Snow Crab

The snow crab stock for the fisheries is distributed in the Div. 0A along the west coast of Greenland. The fishery is conducted mainly by Greenland vessels. Since 2004, the crab resource has been managed in 6 areas (from North to South: Upernavik, Uummannaq-Disko Bay, Sisimiut, Maniitsoq-Kangaamiut, Nuuk-Paamiut and Narsaq-Qaqortoq). The fishing fleet is dominated by small vessels (less than 75 GRT), which have exclusive rights for fishing inshore within the basis-line as well as offshore. Large vessels (greater than 75 GRT) may only fish in all offshore areas (outside the basis-line). Total allowable catch (TAC) restrictions have been imposed since 1995, but have only limited the catch in some areas since 2004.

The number of vessels with licenses to participate in the snow crab fishery increased from 1999 to 2002 from approximately 120 vessels to 392 vessels. Since then the number of both large and small vessels have decreased substantially as the abundance of the resource has also declined. In 2012 number of permits were 62, where by 33 were active in the snow crab fishery.

The total catch in NAFO Subarea 1 peaked in 2001 with approximately 15.000 tons. From 2001 to 2011 total catch decreased approximately 87% to 2.015 tons (table 1). Most of the landings are based on fishery in the management areas Disko Bay-Uummannaq, Sisimiut and Nuuk-Paamiut. The total fishing effort (trap hauls) has declined by 90% since 2001 (from 3,416 to 319 thousand trap hauls during 2001-2011). The decline has been mostly due to a declining number of participants in the fishery.

9. Wolffish

There are three species of wolffish in subarea 1, Atlantic wolffish (*Anarhichas lupus*), spotted wolffish (*Anarhichas minor*) and Northern wolffish (*Anarhichas denticulatus*). Only the two first are of commercial interest. Atlantic wolffish has its main distribution offshore and spotted wolffish is more connected to the fjord and coastal areas. In the past, these stocks have mainly been taken as a by-catch in the offshore fisheries targeting Cod, Greenland halibut and shrimp, but a directed small-boat fishery still exists in the West Greenlandic fjords mostly targeting spotted wolffish. In 2012, 1002 tons of unspecified wolffish, were landed to factories by small boats and smaller vessels mainly from the fjords. There are no forecasts for any of the species. The biological advice is for Atlantic wolffish is “no direct fishery” and no advice is currently given for

Spotted wolffish.

10. **Scallops**

Total catches of scallops in NAFO Subarea 1 amounted to 406 tons in 2012. A total quota for scallops in 2012 was set at 1.520 tons. All catches are taken in inshore areas in Div. 1A, 1B, 1C and 1D. New fishing grounds near Sisimiut (1B) was found in 2003 and quotas for two new areas was introduced in 2004.

11. **Lumpfish**

Total catches of lumpfish in NAFO Subarea 1 increased from 1.200 tons in 2000 to almost 9.000 tons in 2003. Catches have remained at this level until 2011 where catches increased to 11.443 tons and 2012 catches were 11.776 tons. Catches are taken in inshore areas in Div. 1A, 1B, 1C, 1D, 1E and 1F with the majority being caught in 1D. The fishery is conducted over a short time period of one to two months and over a vast coastline from 59° N to 72° N.

B. **Special Research Studies**

1. **Environmental Studies**

a. **Hydrography Studies**

A survey of oceanographic stations along the West Greenland standard sections was carried out in summer 2012. Results are presented in NAFO scr.doc. 13/003.

In winter 2011/12, the North Atlantic Oscillation (NAO) index was positive describing strengthen westerlies over the North Atlantic Ocean. Often this results in colder conditions over the West Greenland region which was also the case this winter with air temperature slightly below normal. This was followed by an exceptional atmospheric warming during summer resulting in higher than normal annual air temperatures.

The general settings in the region have traditionally been presented with offset in the hydrography observed over the Fylla Bank. Here, time series of mid-June temperatures on top of Fylla Bank show temperatures 0.2°C above average conditions in 2012 while low salinity was observed 0.2 below average.

The presence of Irminger Water in the West Greenland waters was high in 2012. Pure Irminger Water (waters of Atlantic origin) could be traced north to the Paamiut section and modified Irminger Water further north to the Sisimiut section. The mean (400–600 m) temperature and salinity was high over the Southwest Greenland shelf break.

The presence of Polar Water was slightly above normal in 2012. The normalized near-surface temperature and salinity indices were slightly below normal and the salinity in the upper ~50–100m of waters over the West Greenland shelf was in general lower than normal. The mean (50–150 m) temperature and salinity was lower than normal over the Southwest Greenland Shelf Break with the exception of Fylla Bank st.4.

2. **Biological Studies**

a) **Shrimp**

The series of annual stratified trawl surveys, initiated in 1988 and converted to a semi-systematic design in 1999, was continued in 2012. In June and July 193 research trawl hauls were made throughout the distribution area of the West Greenland shrimp stock, excluding Subarea 0 due to ice conditions.

The survey index of total biomass remained fairly stable from 1988 to 1997 (c.v. 18%, downward trend 4%/yr). It then increased by, on average, 19%/yr until 2003, when it reached 316% of the 1997 value.

Subsequent values were consecutively lower, by 2008–2009 less than half the 2003 maximum and 9% below the series mean. In 2010 the survey biomass index increased by nearly 24%, but in 2011 it returned to below the 2009 level and in 2012 decreased by a further 23%. Of the survey biomass, 48%, an exceptionally high proportion, was in Disko Bay and Vaigat, about 7% of the survey area.

The decline in total biomass observed since 2003 occurred predominantly in the southern part of the west

Greenland shrimp grounds; indices of the location and distribution of the survey biomass show that the distribution has contracted since 2001–3 and moved northward since 1999. Since 2009 fishing effort in the southernmost part of the West Greenland grounds has been low.

The number at age 2 is a predictor of fishable biomass 2–4 years later (SCR Doc. 03/76). This recruitment index was high in 2001, but decreased continually to 2007. From 2008 to 2010 estimated numbers at age 2 were higher than in 2007 and about stable near 78% of the series mean, but in 2011 decreased to 55% of the mean and in 2012 to the lowest level ever. A relative lack of fishable males in 2012 presages poor immediate recruitment to both the fishable and the spawning stocks.

b) **Greenland halibut**

A Greenland offshore trawl survey for Greenland halibut was initiated in 1997. The survey is a continuing of the joint Japanese/Greenland survey carried out in the period 1987-95. In 1997-2012 the survey covered NAFO Div. 1C and 1D between the 3 nm line and the 200 nm line or the midline against Canada at depths between 400 and 1500 m. In 2012 there were made 50 successful hauls in Div. in Div. 1CD. (Jørgensen 2013)

In 2001 the survey area was expanded to include NAFO Div. 1B-1A (to 74°N) and in 2004 a survey was conducted in the northern part of the Baffin Bay (73°N-77°N) (Div. 1A) at depths down to 1500 m. In 2010 was conducted a survey in Div. 1A to 75°30' where 93 successful hauls were made. There was no deep sea survey in Div. 1AB in 2012.

Since 1988, an annual stratified random trawl survey SFW (Shrimp Fish West) has been conducted by the Greenland institute of natural resources on the West Greenlandic shelf between 59°15'N and 72°30'N from the 3 mile limit down to the 600 m and the inshore area of Disko Bay. The main purpose of the survey is to evaluate the biomass and abundance of the Northern shrimp (*Pandalus borealis*), but since 1992 data on fish species have been included. Since 2008 the survey also covers the East Greenland area to Dohrn Bank at 67°N.

A longline survey for Greenland halibut in the inshore areas of Disko Bay, Uummannaq, and Upernavik was initiated in 1993. Since 2001 a gillnet survey was initiated in the Disko Bay area. The survey normally covers 4 transects and each gillnet setting is compiled of 4 different nets with differing mesh size (46, 55, 60 and 70 mm halfmesh). The distribution pattern showed a markedly higher density of Greenland halibut in the mouth of the ice fjords. In 2012 a gillnet survey was conducted in Disko Bay and a longline survey was conducted in the Uummannaq and Upernavik areas.

c) **Cod survey**

Inshore

A survey using gangs of gill nets with different mesh-sizes has been developed and used since 1985 with the objective of assessing the abundance of age 2 and age 3 cod in the inshore areas. The indices in all areas (NAFO 1B, 1D and 1F) are generally above the levels observed during the 1990's. The West Greenland inshore gillnet survey was in 2012 conducted in the areas NAFO 1B and NAFO 1D. Catch rates for age 3 cod (2009 YC) was the highest recorded in the time series in NAFO 1B making this the largest yearclass seen in the survey time series both as 1, 2 and 3 year old in the area. In NAFO 1D catch rates of age 3 (2009 YC) cod was on average with the catch rates of the 2003 and 2005 YC at age 3 in this area. Catch rates of age 2 cod (2010 YC) was higher in NAFO 1B compared to NAFO 1D where this year-class on average with the catch rates of 2 yr olds the last three years (YC 2007-2009).

Offshore

Greenland survey

An annual stratified random trawl survey has been conducted since 1988 in West Greenland between 59°15'N and 72°30'N and the inshore area of Disko Bay from the 3 mile limit down to the 600 m. The main purpose of the survey is to evaluate the biomass and abundance of the Northern shrimp (*Pandalus borealis*), but since 1992 data on fish species have been included. Since 2008 the survey also covers the

East Greenland area to Dohrn Bank at 67°N.

Until 2001 the survey biomass indices of cod was below 1,000 tons but increased to about 2,300 tons in 2004 and continued to increase thereafter with highest biomass indices in 2007 and 2008 with estimated biomass and abundance indices at 28,481 tons and 53.4 mill individuals. The stock in West Greenland then declined in 2009 compared to 2008 with 85% in biomass and 70% in abundance. This was mainly caused by a decrease in the abundance of the 2003 and 2005 YC in West Greenland, which were the dominating YC in previous years. Since 2008 biomass and abundance has increased, and the 2012 survey showed that the offshore cod stock in West Greenland increased with 98% in biomass (37,000 tons) but decreased with 12% in abundance (71 mill individuals) compared to 2011. The main cause for the increase in biomass was the growth of the 2009 YC which first appeared in the survey as 2 year olds in 2011. This 2009 YC was mainly distributed in the northern part of the survey area (NAFO area 1B) in 2011, but had a more southerly distribution in 2012 in NAFO area 1F. Cod older than 6 years are almost absent in West Greenland.

The survey started in East Greenland in 2008 and biomass and abundance has gradually increased. In 2012 however the offshore cod stock has decreased with 47% in abundance (23 mill individuals) and 21% in biomass (64,000 tons) compared to 2011. Younger cod (2007 YC) are predominantly found in South East Greenland, whereas older cod predominantly belonging to the 2003 YC are found in the northern areas on Dohrn Bank of East Greenland.

German survey

An annual stratified random trawl survey has been conducted by Germany since 1982 in West and East Greenland from 67°N in West Greenland to 67°N in East Greenland covering the depthzone between 0-400 m. The main purpose of the survey is to evaluate the biomass and abundance of the Atlantic cod.

The survey time series shows two abundance peaks in 1987-1989 caused by the 1984 and 1985 YC and from 2005 and onwards caused by the 2003, 2005 and 2007 YC. In 2012 the 2009 YC was found abundant in mid West Greenland (NAFO Div. 1C).

Overall the Greenland and the German surveys show that older cod (>8 yrs) are predominantly found in the northern areas off East Greenland (Dohrn Bank) being scarcer off Cape Farewell and absent from West Greenland. Younger cod (<6 yrs) are predominantly found in South Greenland, and recruits (<3yrs) are predominantly found in North and Mid West Greenland.

d) Snow crab

Annual monitoring program (trap survey) was initiated in 1997 in Disko Bay (Div. 1A) and Sisimiut (Div. 1B). Since 2001 annual offshore trap survey has been conducted in more southern areas in West Greenland (Div. 1C and 1D) but has been canceled since 2010. Large and small meshed conical traps are used. All snow crab were enumerated by sex, carapace width and carapace condition. The chelae height was measured in males and the abdomen width in females, respectively for maturity determination. Ovary contents, clutch weight, sperm load and egg development stage in females was also determined and females were sampled in relation fecundity studies.

The objective of both monitoring programs is to assess the abundance of snow crab in inshore and offshore waters of Greenland. Results from this survey are presented in the Technical Report Series of the Greenland Institute of Natural Research. In general the stock and recruitment prospects are at a low level in all areas.

e) Marine mammals

Studies of white whale and narwhal continued in 2012 and details are being reported to JCNB and NAMMCO. In 2012 also studies of minke whale, fin whale, humpback whale and bowhead whale continued. Monitoring studies on large cetaceans are being reported to IWC and NAMMCO. Studies of harp and hooded seals are being reported to the Joint ICES/NAFO Working Group on Harp and Hooded

Seals. Studies on ringed seals and bearded seals are reported to NAMMCO.

GREENLAND FISHERY IN OTHER NAFO SUBAREAS

A. Status of the fisheries

In 2012 no Greenlandic vessels has been involved in shrimp fishery at Grand Bank. 51 tons of Greenland halibut and 14 tons of northern prawn was reported in logbooks from division 0AB, but can be ascribed to logbook position errors (eg. 1-10 degrees difference between start and end position).

References

Anon. 2012. Scientific Council Reports. Northwest Atlantic Fisheries organization. Dartmouth Canada 2012.

Ribergaard, M.H. 2013. Oceanographic Investigations off West Greenland 2012. *NAFO Scientific Council Documents SCR 13/003*

JØRGENSEN, O.A., 2013. Survey for Greenland Halibut in NAFO Divisions 1C-1D, 2012. *NAFO SCR Doc.*, No. 13/xx, Serial No. NXXX.

Table 1. Estimated catches (tons) by Greenland vessels at West Greenland (NAFO Subarea 1) in 2009-2012.

Species	FAO	1-ABCDEF catch				3M	3L
		2009	2010	2011	2012*	2012	2012
American Plaice	PLA	nd	0	0	0		
Arctic char	ACH	19	nd	62	70		
Atlantic halibut	HAL	5	6	5	9		
Atlantic salmon	SAL	26	38	28	34		
Atlantic cod	COD	10.958	9.560	11.557	12.475		
Capelin	CAP	184	90	124	59		
Crabs	CRQ	3.165	2.098	2.015	1.951		
Greenland cod	GRC	161	nd	155	130		
Greenland halibut	GHL	24.603	29.222	29.088	29.365		
Roughhead Grenadier	RHG	nd	nd	8	2		
Roundnose Grenadier	RNG	nd	nd	8	4		
Haddock	HAD	nd	nd	nd	0		
Lumpfish	LUM	6.557	8.482	11.443	11.776		
Polar cod	POC	nd	nd	172	73		
Redfish (unspecified - bycatch mainly)	RED	124	75	46	26		
Pelagic redfish	REB	0	0	0	0		
Redfish golden	REG	226	166	136	128		
Saithe	POK	nd	nd	nd	0		
Scallops	ISC	511	398	412	406		
Shark		nd	nd	nd	nd		
Shrimp (P.boreallis)	PRA	135.458	133.986	123.985	111.450		
Shrimp (P.montagui)	AES	88	2.594	nd	3.124		
Skate	SKA	nd	0	1	1		
Wolffishes	CAT	1.130	1.315	779	1.002		
Fish not specified	MZZ	nd	nd	678	842		
Sum total		183.215	188.030	180.702	172.927	0	0

* Catch figures are provisional

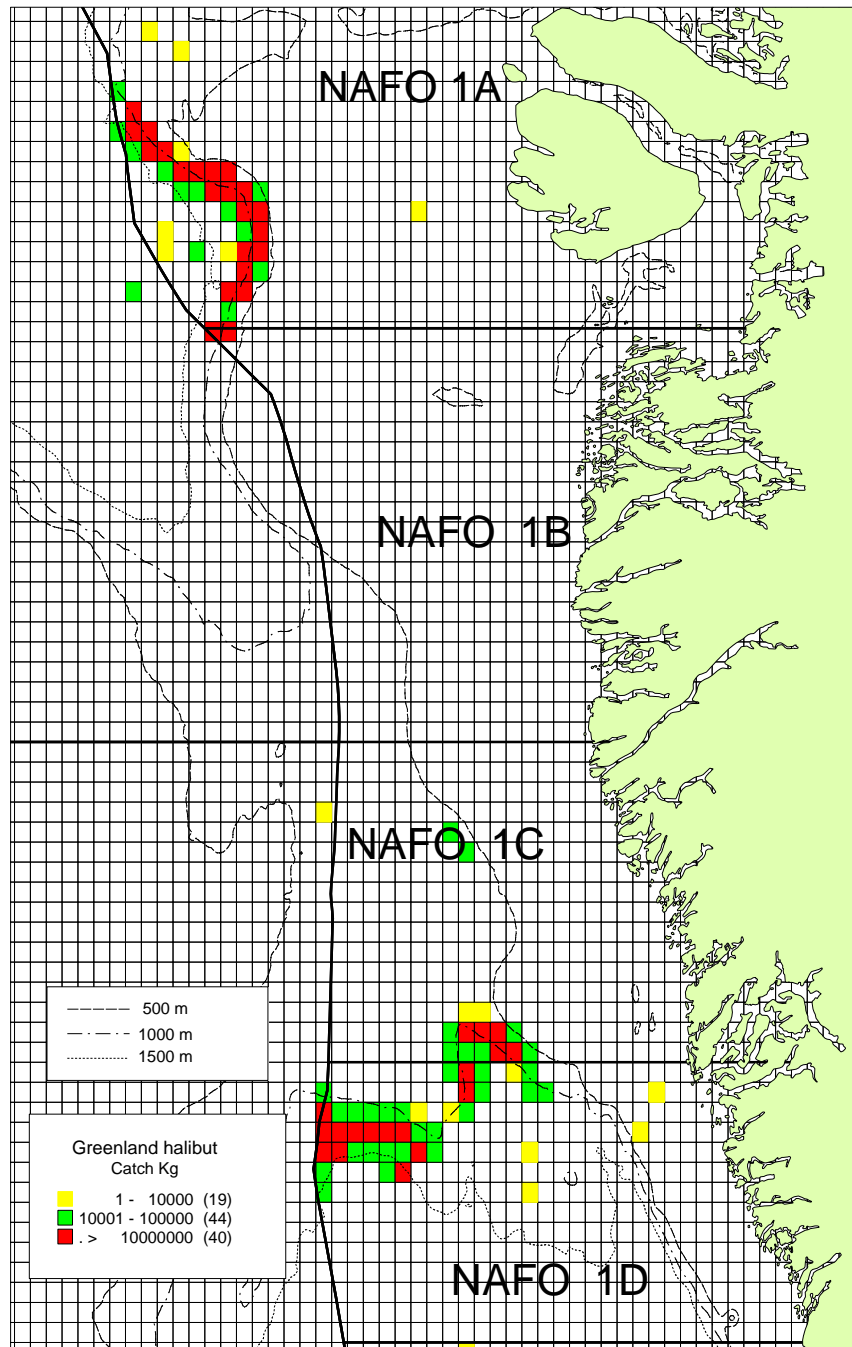


Fig. 1. Distribution of the offshore catches of Greenland halibut in SA 1 in 2012 by statistical square. All nations.