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RE : COD AND REDFISH SURVEY IN GREENLAND WATERS 2019

Preliminary report of the cruise 431 of the FRV Walther Herwig
III (WH431)
Sep 30 - Nov 12, 2019

Preliminary results and assessment

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Background

The Greenland cod stock and catches

In 2003, the presence of a strong year class of 0-group cod was observed in the cod surveys off Greenland. After a long period of depleted stock, this finding raised expectations of a replenishing of the cod stock. Further strong year classes appeared in 2005 and 2007. At the same time, in East Greenland an increasing spawning stock was observed, the so-called bank cod, and direct observations on cod spawning in Greenland waters were made since 2006.

Catches in the stock component XIVb + NAFO 1F have been increased to ca 15,000 t per year for the period 2015-2018, indicating highest catches since 2000.

ICES advice in 2019 for cod in ICES Subarea 14 and NAFO Division 1F

Advice for 2020 followed the stock delineation first applied in 2015: (1) East Greenland and NAFO 1F are combined, and (2) a new West Greenland stock was defined excluding NAFO 1F.

For East+1F ICES gave a catch advice of 5363 t for 2019 and 3409 t for 2020.

In 2015, the reference system of the precautionary approach for this stock was replaced by the MSY approach.

Cruise narrative WH431

Sampling

WH431 was carried out in October and November 2019.

The report thus contains only tentative figures and results for 2019. In particular, data base quality control, and age readings still need to be carried out.

Survey goals were not fully accomplished. 94 stations were sampled in 2019 as compared to 110 in 2015. **As matter of fact, the West Greenland sub-areas NAFO 1C-1D could not be sampled due to bad weather conditions.**

The sampling area was subdivided into 9 regional strata. The new stratification was approved during the ICES North-Western Working Group in 2012 (Fig 1):

NOT SAMPLED IN 2019

Stratum 1 (NAFO 1C), north of 61°N
Stratum 2 (NAFO 1D), north of 61°N

FULLY SAMPLED IN 2019

Stratum 3 (NAFO 1E), party north of 61°N
Stratum 4 (NAFO 1F), SW Greenland

Stratum 5&6 (SE Greenland), south of 63°N
Stratum 7 (E Greenland), north of 63°N
Stratum 8 (E Greenland), northeast of 63°N
Stratum 9 (E Greenland), east of 33°W

Meetings

In 2019, no meeting was held.

Cod

Trends

Trends are given in terms of survey standard unit catches (CPUE) to allow for stratum-wise interpretation of catches, and in terms of biomass indices of the new stock components East+1F and West-1F. To compare with the historical situation, mean CPUEs are scaled to the long-term maximum value, which was observed in 1988 in stratum 2. This value was set to 100. Further, median values were analysed to account for changes in the frequency composition of catches: high mean but small median values indicates that the average was dependent on few high values whereas the majority of hauls had small catches. A true increase should be indicated by increases both in median and mean values (Example: cod cpue in stratum 1 in 2013-2015).

Results are given in Figure 2 and 3.

West Greenland - NAFO 1F:

No update in 2019.

East Greenland + NAFO 1F:

No significant increase was observed in stratum 4/NAFO 1F, both in terms of mean and median values. The values 2015-2019 were consistently lower than the values 2012-2014.

The same applies to stratum 5&6, (SE Greenland), values since 2015 were lower than the values 2012-2014.

Stratum 7, the area including 'Kleine Bank', was stagnant at very low level as compared to the high values 2009-2010.

Abundance in the main habitat for demersal redfish (stratum 8) remained low.

In the 'Dohrn Bank' area (stratum 9) a small decrease was observed in the mean and the median declined showing that in the majority of hauls catch was decreasing.

Overall, CPUE was low in all strata.

Overall:

The positive trend found until 2014 for East+1F was reversed in 2015 and remains stagnant/negative since then. Biomass index declined further to about 29564 t in 2019.

Evaluation of survey results and assessment for cod

(1)

East GLD +1F cod has not recovered recently, while catches in the years 2015-2018 were at the high end of the catch record since reopening the fisheries with ca 15,000 t per year.

In light of the decline of the preliminary German biomass index for East GLD + 1F, maintaining the TAC at present level appears - in line with the ICES advice 2019 - unsupported by the present data.

Redfish (*S. mentella* and *S. norvegicus* (syn. *S. marinus*)

ICES advice for 2019 for demersal redfish (*S. mentella*) in area XIV
Category III rules were applied to this stock, resulting in an advice of 917 t TAC for 2020.

Survey trends

High abundance for *S. mentella* is only encountered in stratum 8 of the German survey. Therefore, despite little coverage of West Greenland areas in 2019, survey data are used to evaluate the present situation of the *S. mentella* stock. Catch rates for *Sebastes mentella* declined sharply in stratum 8 until 2015, were still low in 2016 and reached a very low value in 2019 (Figure 4).

The trend for Golden redfish *Sebastes norvegicus* (syn. *marinus*) showed signs of continued decline after an increasing trend for the years 2011-2014.

Evaluation of survey results

(a)

The redfish catch for 2019 is unknown, but present catch rates are likely to fish down the redfish *S. mentella* population on the East Greenland shelf (demersal *S. mentella*). The demersal *S. mentella* fisheries on the shelf thus appears unsustainable. As in recent years, the majority of redfish in the survey area is not *S. mentella*, but belongs to *S. norvegicus*.

(b)

The survey results indicate trends of redfish above 400 m depth only. The deeper part of the stock is not covered by the survey, but is considered in the ICES advice.

Figures

Fig. 1: New stratification scheme for the German Greenland survey, introduced in 2012 and applied since.

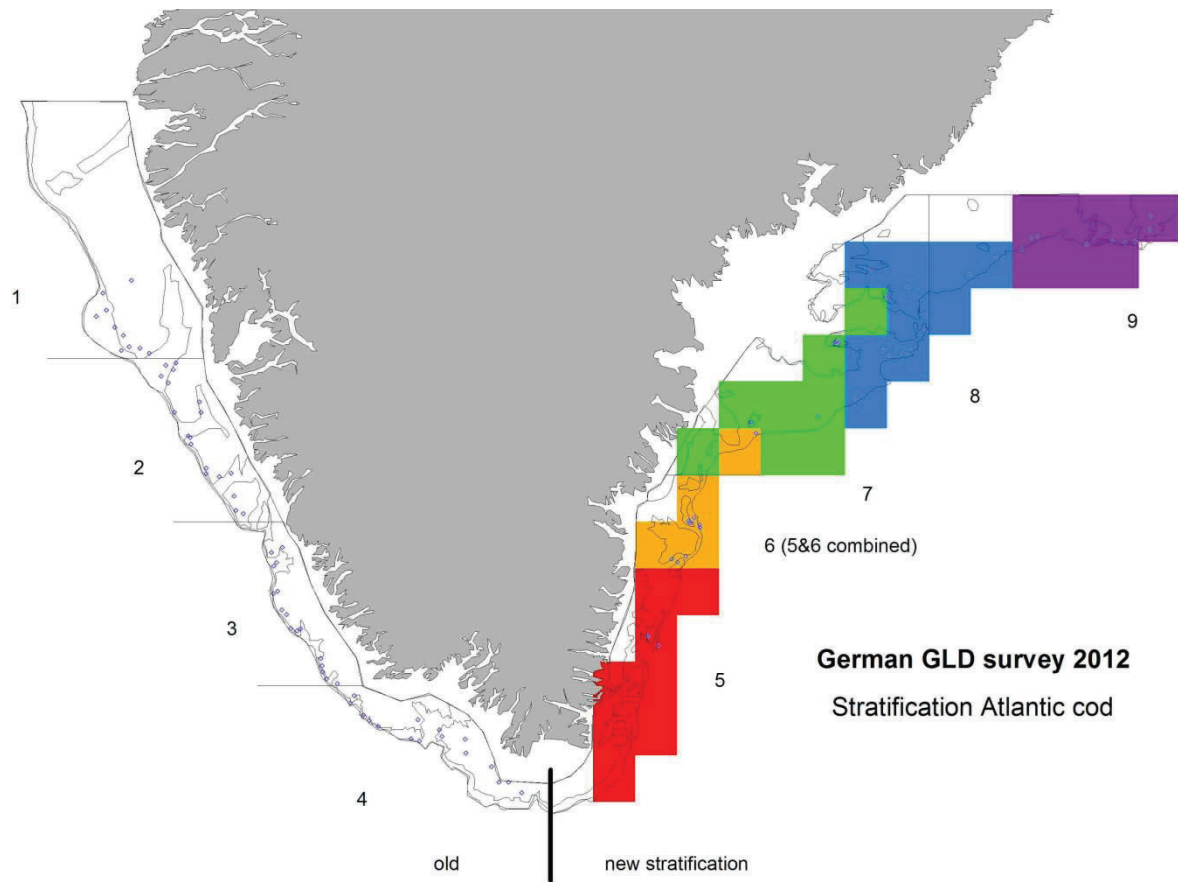


Figure 2: Trends for CPUE for cod from the German offshore survey off Greenland, with equal scaling for all y-axes to account for subtle changes in different areas. Bars represents means and red line indicates median values relative to the long-time maximum value in 1981. Stratum affiliation see Table 1. Stratum 1 not sampled in 2011, Stratum 1&2 not sampled 2016 and 2019.

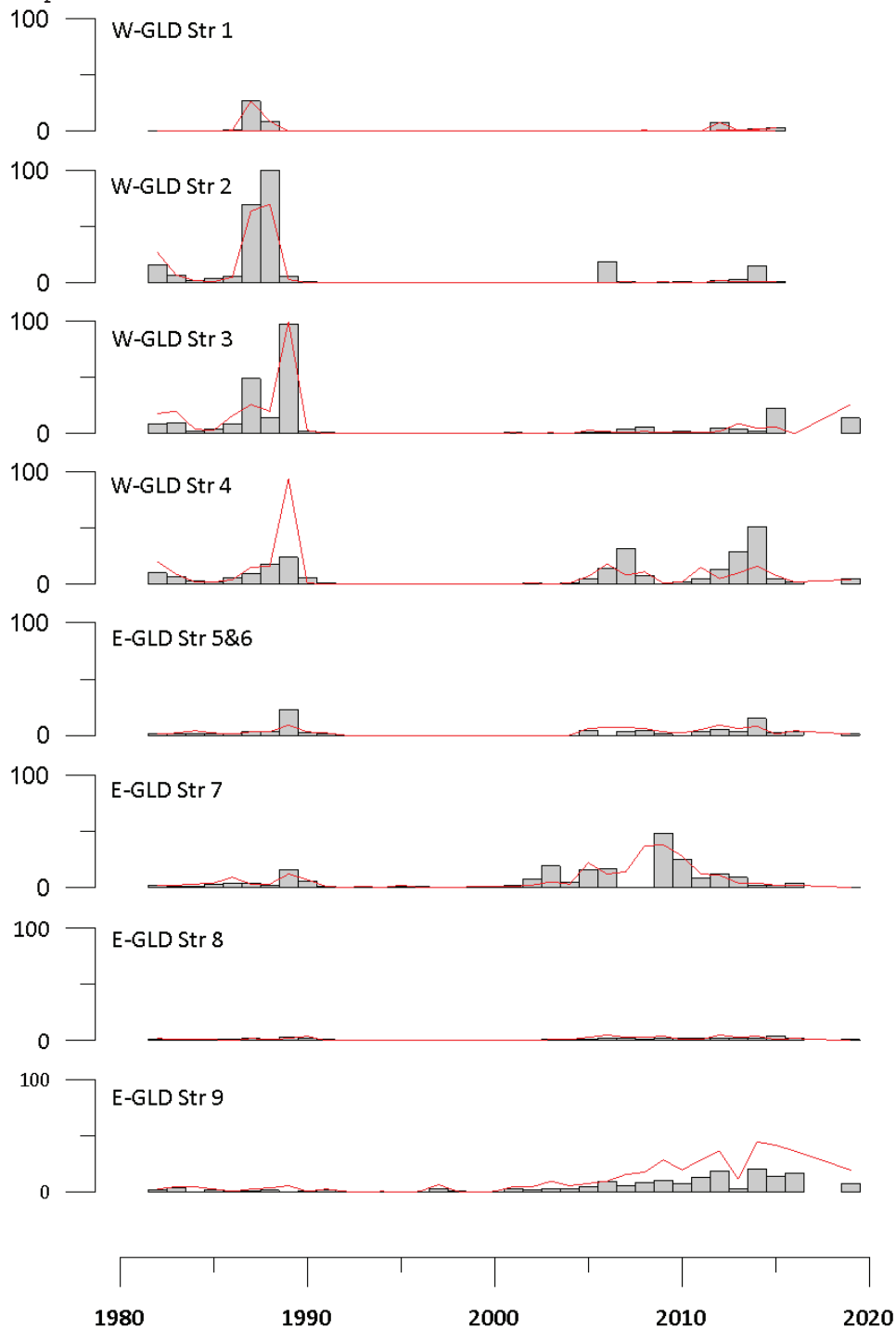


Figure 3 : Trends for biomass index for cod from the German offshore survey off Greenland, based on the new assignment of stock components (1) East Greenland and NAFO 1F. Stratum affiliation see Table 1. East GLD not adequately sampled in 2017/2018.

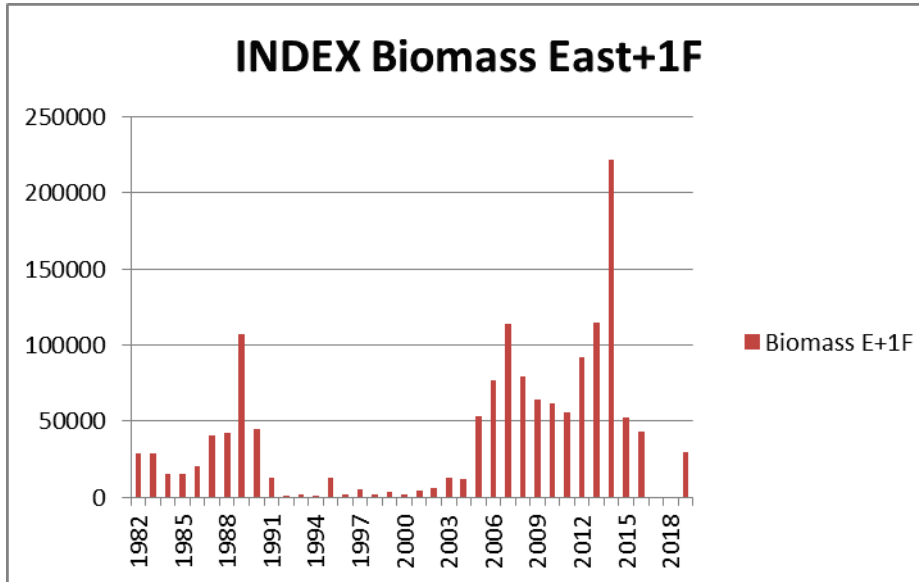


Figure 4: Trends for biomass index for redfish, *S. norvegicus* (syn. *marinus*) and *S. mentella*, from the German offshore survey off Greenland. Stratum affiliation see Table 1. In 2016, West Greenland was not sampled completely (no values for stratum 1 and 2, stratum only partially).

