

Cruise Report
FRV Walther Herwig III 440
Oct 5 – Nov 17, 2020
(Greenland Groundfish Survey)

Cruise Leader: Dr. Karl-Michael Werner

1. Summary

The German groundfish survey off Greenland is conducted since 1981, aiming at monitoring groundfish stocks in particular of cod and redfish, collecting environmental data and conducting ecosystem studies in the area.

In 2020, the survey was hampered by bad weather conditions and an emergency rescue situation at sea, resulting in a survey coverage with a total of 90 trawl stations as compared to a planned coverage of ~ 110 stations. West Greenland was only partially covered and results have to be treated with caution.

Verteiler:

Schiffsführung FFS „Solea“
BA für Landwirtschaft und Ernährung (BLE) Fischereiforschung
BM für Ernährung und Landwirtschaft (BMEL), Ref. 614
BA für Seeschifffahrt und Hydrographie (BSH), Hamburg
Deutscher Angelfischerverband e.V.
Deutsche Fischfang-Union, Cuxhaven
Deutscher Fischereiverband Hamburg
Doggerbank Seefischerei GmbH, Bremerhaven
Erzeugergemeinschaft der Deutschen Krabbenfischer GmbH
Euro-Baltic Mukran
GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel
Kutter- und Küstenfisch Sassnitz

LA für Landwirtschaft, Lebensmittels. und Fischerei (LALLF)
LFA für Landwirtschaft und Fischerei MV (LFA)
Landesverband der Kutter- u. Küstenfischer MV e.V.
Leibniz-Institut für Ostseeforschung Warnemünde
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Thünen-Institut - Pressestelle, Dr. Welling
Thünen-Institut - Präsidialbüro
Thünen-Institut - Reiseplanung Forschungsschiffe, Dr. Rohlf
Fahrteilnehmer*innen

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 2008 and 2009. After the spawning stock increased in the early 2000s, it began to decline again around 2016. At the same time, fishing mortality rose and catches remain high since 2015. Catches have exceeded the TAC recommended in the scientific advice for many years in a row.

Cruise narrative WH440

Sampling

WH440 was carried out from October 5th to November 17th, 2020. Survey goals were not fully accomplished. 90 bottom trawl stations were sampled in 2020 as compared to 110 in 2015 (Table 1 & Fig. 2). **West Greenland could only partially be covered due to bad weather conditions and an emergency rescue situation at sea.**

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).

PARTLY SAMPLED IN 2020

Stratum 1 (NAFO 1C), north of 61°N

Stratum 2 (NAFO 1D), north of 61°N

Stratum 3 (NAFO 1E), partly north of 61°N

Stratum 4 (NAFO 1F), SW Greenland

FULLY SAMPLED IN 2020

Stratum 5&6 (SE Greenland)

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 November 2020, a meeting with local fishermen was held in Qaqortoq and a meeting was held with scientists from the Greenland Institute of Natural Resources in Nuuk.

Cod

Trends

For the East Greenland stock, abundance in 2020 was highest in the Dohrnbank region and in Southwest Greenland (NAFO 1F; Fig. 2). Abundance indices from the survey show low recent abundance both for West and East Greenland (Fig. 3).

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

Biomass trends

Sebastes mentella still shows extremely low values of biomass, comparable to the early 1980s (Fig. 4). There are no signs of a quick recovery of this long-lived species. After a peak around 2015, also *Sebastes norvegicus* shows a declining trend (Fig. 5), but biomass levels are not as low as for *Sebastes mentella*.

Acknowledgements

We thank the crew of FRV Walther Herwig III for collaboration.



Karl-Michael Werner

Figures

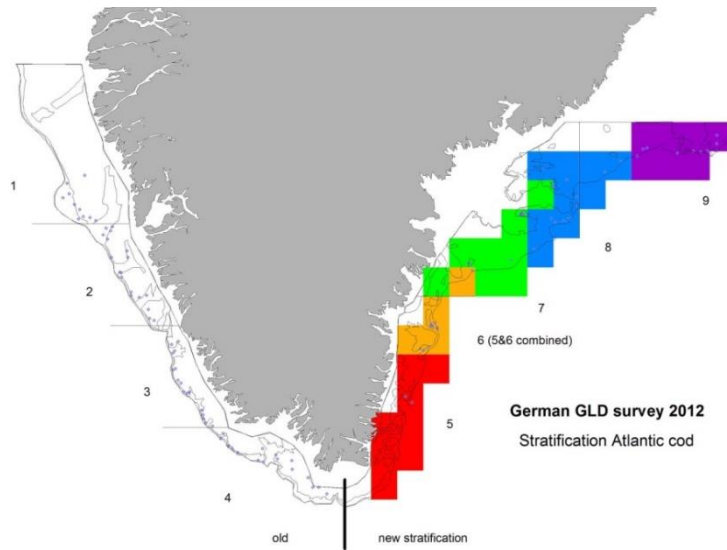


Fig. 1: New stratification scheme for the German Greenland survey, introduced in 2012 and applied since.

Table 1: Number of stations sampled in each stratum in 2020.

| Stratum | 9.2 | 8.2 | 7.2 | 7.1 | 5+6.2 | 5+6.1 | 4.2 | 4.1 | 3.2 | 3.1 | 2.2 | 2.1 | 1.2 | 1.1 | Total |
|-------------|-----|-----|-----|-----|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| No Stations | 8 | 16 | 2 | 8 | 5 | 8 | - | 6 | 4 | 2 | 4 | 12 | 6 | 9 | 90 |

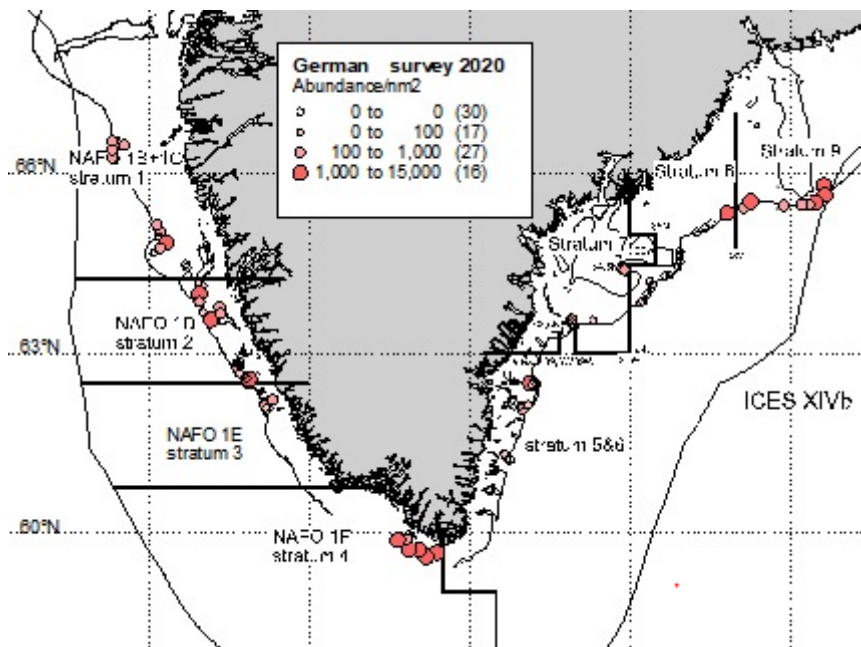


Fig. 2: Stations of the German Greenland Groundfish Survey 2020 and abundance of Atlantic cod (n/nm²).

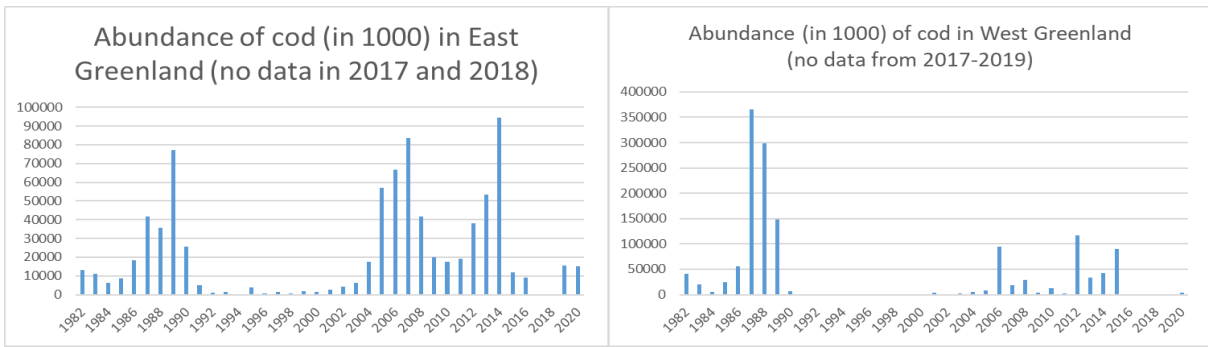


Fig. 3: Survey abundance estimates of cod in West and East Greenland.

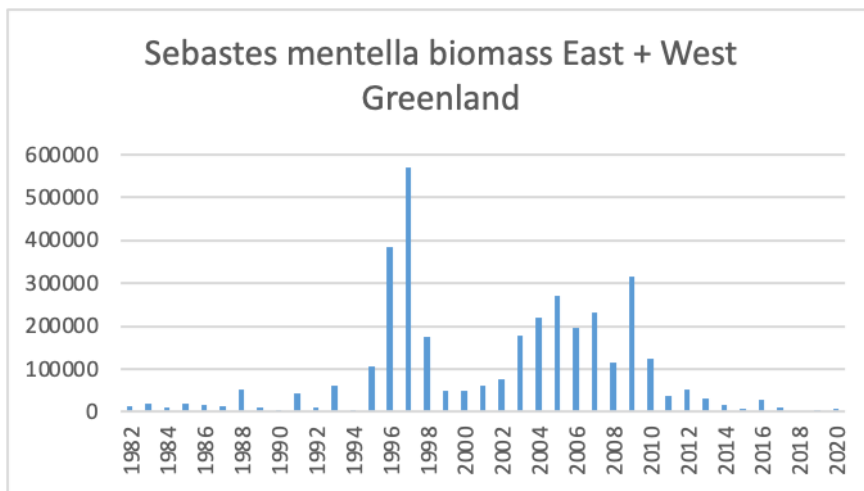


Fig. 4: Biomass of *S. mentella* (in tons) from 1982 - 2020

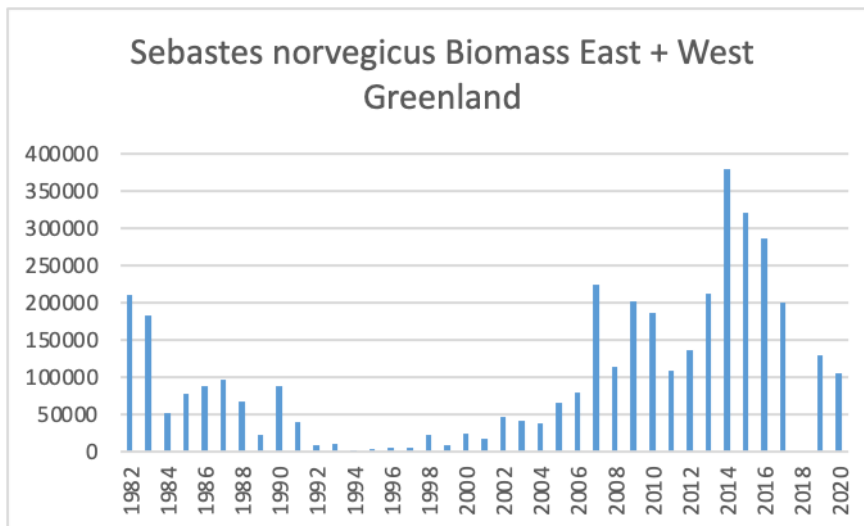


Fig. 5: Biomass of *S. norvegicus* (in tons) from 1982 – 2020