b) Northern shrimp in Denmark Strait and off East Greenland

Advice November 2021 for 2022

Recommendation

There is uncertainty about the current stock status, however there is no indication of any change from last year's assessment in 2020. Therefore Scientific Council reiterates its advice that the catch in 2022 should not exceed 3000 t.

Management objectives

No explicit management plan or management objectives have been defined by the Government of Greenland. Advice was drafted to be consistent with the NAFO precautionary approach (FC Doc 04-12).

Objective	*Status*	*Comment/consideration*
Apply Precautionary Approach		B_{lim} defined. No fishing mortality reference is defined.

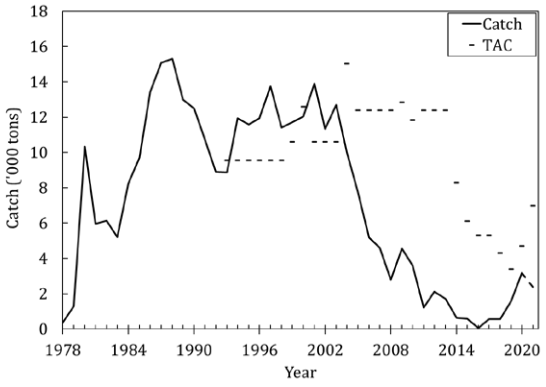
 Intermediate

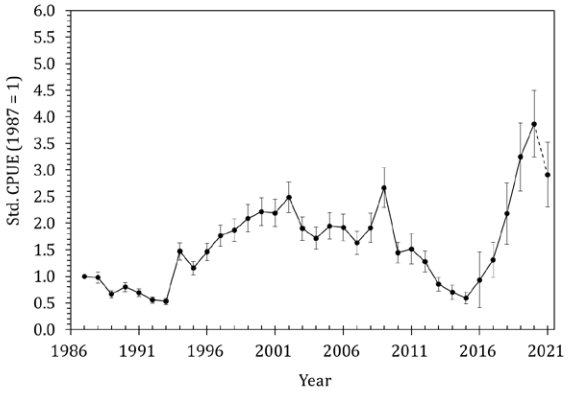
Management unit

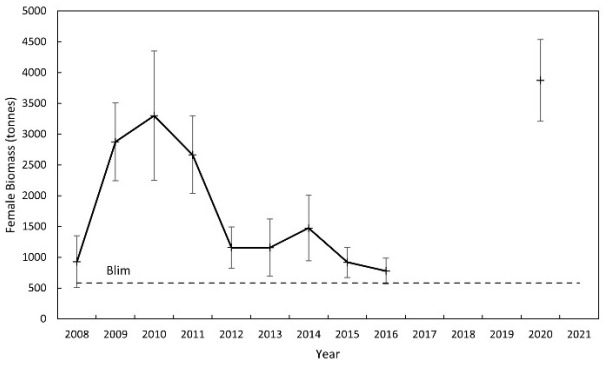
The shrimp stock is distributed off East Greenland in ICES Div. 14b and 5a and is assessed as a single population.

Stock status

There was no survey in 2021 nor in 2017 to 2019. The stock in 2020 was at a high level. The survey biomass in 2020 is the highest observed since the beginning of the survey, in 2008. The commercial CPUE in 2021 has decreased compared to 2020 but remains at a high level. There is no recruitment index available for this stock, few juvenile shrimps are caught in the survey area.







Reference points

Scientific Council considers that 15% of the maximum survey female biomass provides a proxy for *Blim* (SCS Doc. 17/17). The record high survey biomass found in 2020 results in *Blim* = 580 t.

Projections

Quantitative assessment of risk at various catch options is not possible for this stock currently.

Assessment

There was no survey in 2021. The most recent survey was in 2020 after three years with no survey data. The survey biomass was the highest since the survey started in 2008. The standardized commercial CPUE has increased since 2015 and was at a historical high level in 2020, it has since dropped slightly in 2021. In 2021 the fisheries started late due to a delay in licences, this may have impacted the fishing pattern. The survey biomass in 2020 is concentrated in a fairly small geographical area and the recent fishing effort is concentrated in the same general area. Recent fishing effort has been relatively low, so this CPUE may not reflect stock status for the entire stock distribution area.

A comprehensive sensitivity analyses of the surplus production model (SPiCT) was performed as recommended by NIPAG 2021 (SCR Doc 21/044). However, the SPiCT model was not applicable as a preliminary assessment tool this year but encourage future development of this modeling approach.

Human impact
Mainly fishery related mortality has been documented. Other sources (e.g. pollution, shipping, oil-industry) are considered minor.

Biological and Environmental Interactions
Cod is an important predator on shrimp. The cod stock has generally been decreasing in East Greenland waters since 2014.

Fishery

Shrimp is caught in a directed trawl fishery. The fishery is regulated by TAC and bycatch reduction measures include move-on rules and Nordmøre grates.

Recent catches and TAC (t) were as follows:

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Enacted TAC	12 400	12 400	8 300	6 100	5 300	5 300	4 300	3 384	4 750	7 000
SC Recommended TAC	12 400	12 400	2 000	2 000	2 000	2 000	2 000	2 000	3 000	3 000
NIPAG	2 109	1 717	622	576	49	561	547	1 580	3 172	2 370[1]

[1] To June 30th 2021

Effects of the fishery on the ecosystem

Measures to reduce effects of the fishery on the ecosystem include move-on rules to protect sponges and corals.

Source of Information

SCR Docs. 20/066, 21/043, 21/044