



22. oktober 2018

J.nr. 20.00-11

Sammendrag af rådgivning for 2019 om fiskeri på rejebestandene ved Vest- og Østgrønland

Dette sammendrag beskriver kort ændringer i forhold til sidste års rådgivning og præsenterer de anbefalede fangstmængder fra NAFO. Anbefalingerne uddybes i Appendiks.

Betydende ændringer i forhold til 2018-rådgivningen

Den anbefalede fangstmængde i 2019 for rejer ved Vestgrønland er uændret på 105.000 tons og for rejer ved Østgrønland er rådgivningen uændret på 2.000 tons.

Rådgivning for 2019

Rejer

*Vestgrønland*105.000 tons.

Rådgivning for 2018: 105.000 tons.

Total fangst forventet i 2018: ca. 101.250 tons.

Rejer

*Østgrønland*2.000 tons.

Rådgivning for 2018: 2.000 tons.

Total fangst forventet i 2018: < 1.000 tons.

Den officielle rådgivning, som Departementet for Fiskeri modtager en kopi af, findes på NAFOs hjemmeside (www.nafo.int). Grønlands Naturinstitut har udarbejdet baggrundsdokumenter med relevante informationer i forbindelse med rådgivningsprocessen. Hvis der ønskes yderligere dokumentation, står Naturinstitutet naturligvis til rådighed.

Grønlands Naturinstitut vil snarest invitere repræsentanter fra forvaltningen og erhvervet til en grundig gennemgang af baggrunden for rådgivningen, herunder besvarelse af spørgsmål og udveksling af viden.

Med venlig hilsen

Helle Siegstad, afdelingschef

Appendiks

Rådgivningens engelske originaltekst findes sidst i dokumentet.

Rejer i Vestgrønland

NAFO rådgiver, at fangsterne i 2019 ikke bør overstige 105.000 tons. Det er samme rådgivning som for 2018.

Om rådgivningen

Fangstniveauet ved *Vestgrønland* er fastsat med udgangspunkt i, at rejebestanden viser stabilitet i biomassen både fra de biologiske undersøgelser, fra fiskeridata samt i modelberegninger.

Modellen, der beregner udviklingen i bestanden, anvender som i tidligere år rejefiskeriets fangster (Figur 1), rejebiomassen beregnet ud fra de biologiske undersøgelser og fra fiskeriets fangstrater, samt biomassen af de torsk, der spiser rejer.

Modellen har beregnet en maksimal biomasse i 2004 og herefter et fald frem til 2013. Biomassen er siden øget en anelse og er i slutningen af 2018 beregnet til at være tæt på den biomasse, der kan sikre et optimalt bæredygtigt udbytte af rejebestanden (Figur 2).

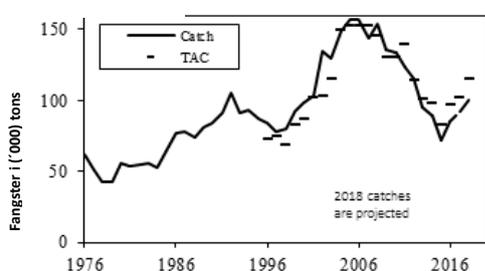
Antallet af 2-årige rejer, der forventes at komme ind i fiskeriet inden for de næste tre til fire år, er på gennemsnittet (Figur 4).

Den totale dødelighed har i perioden 2008 til 2014 ligget tæt på det niveau, der kan sikre en bæredygtig udnyttelse af ressourcen (Z_{msy}). Efter 2014 falder dødelighed kortvarigt, men stiger igen i 2018 til et niveau tæt på Z_{msy} (Figur 3).

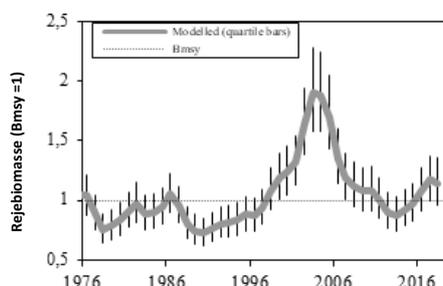
Tabel 1. Totale landinger (tons) af rejer i Vestgrønland og Canada fra 2011 til 2018

År	2011	2012	2013	2014	2015	2016	2017	2018
Grønland	122.659	115.965	95.379	88.765	72.254	84.356	89.396	101.250 ¹
Canada	1.330	12	2	0	2	1.171	3.215	737 ¹

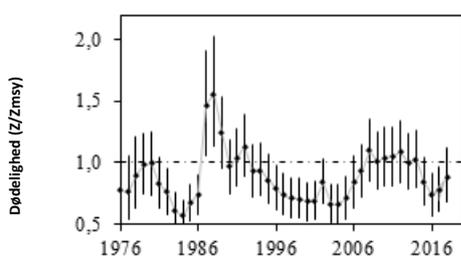
¹ forventet



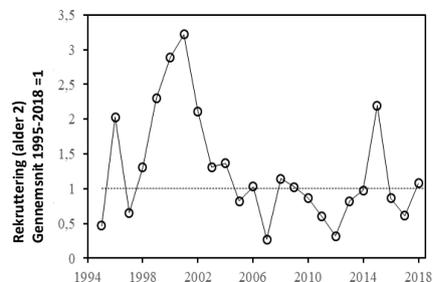
Figur 1. Samlede fangster fra 1970-2018



Figur 2. Biomasse af rejer (fra model)



Figur 3. Total dødelighed (fiskeri og torsken prædation)



Figur 4. Rekruttering (alder 2)

Det videnskabelig råd har med udgangspunkt i de af Naalakkersuisut fastsatte forvaltningskriterier for rejefiskeriet i Vestgrønland vurderet, at et fiskeri på 105 000 t i 2019 vil sikre en bæredygtig udnyttelse af bestanden. Det betyder at risikoen for at overskride en dødelighed hvor

fiskeriet ikke længere er bæredygtigt (Z_{msy}) er 35% og hvor risikoen for at biomassen kommer under det laveste niveau (B_{lim}) er lav.

Rejer i Østgrønland

NAFO rådgiver, at fangsterne i 2019 ikke bør overstige 2.000 tons. Dette er samme rådgivning som i 2018. Derudover anbefaler NAFO at biologiske undersøgelser bliver gennemført i de kommende år til brug for de kommende rådgivninger.

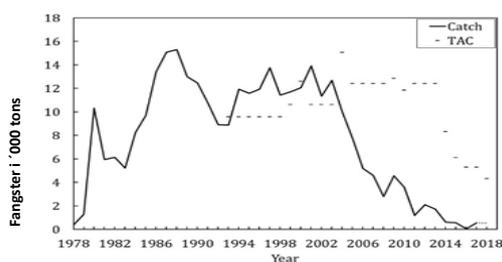
Om rådgivningen

Rådgivningen om rejer ved Østgrønland har siden 2014 været på 2.000 tons.

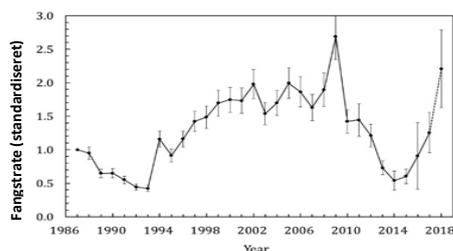
På grund af tekniske problemer med undersøgelsesfartøjet "Pâmiut" blev der ikke gennemført biologiske undersøgelser i 2017 og 2018. De senere år har fiskeriet efter rejer ved Østgrønland været sporadisk, og NAFOs videnskabelige råd vurderer, at fangstraterne ikke nødvendigvis afspejler bestandens tilstand. Bestanden er forblevet på et lavt niveau på trods af flere år med en lav udnyttelse (Figur 8), og det videnskabelige råd fastholder derfor rådgivningen på 2.000 tons i 2019.

Tabel 2. Totale landinger (tons) af rejer i Østgrønland fra 2011 til 2018

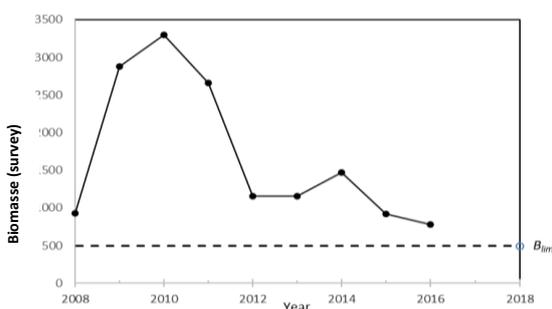
År	2011	2012	2013	2014	2015	2016	2017	2018
Grønland	1.199	2.109	1.717	622	576	49	561	545



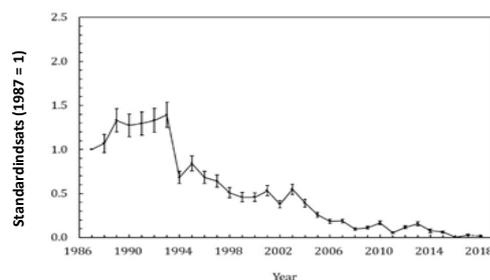
Figur 5. Samlede fangster fra 1978-2018



Figur 6. Fangstrater (1986-2018)



Figur 7. Biomasse (hunner) fra survey (2008 – 2016)



Figur 8. Fiskeriindsats (1986 – 2018)

Northern shrimp in Subarea 1 and Div. 0A

Advice October 2018 for 2019

Recommendation

In line with the stated management objective of maintaining a mortality risk of no more than 35% (subject to a risk of biomass being below B_{lim} of less than 5%), Scientific Council advises that catches in 2019 should not exceed 105 000 t.

Management Objectives

A management plan and management objectives have been defined by the Government of Greenland in 2018. The objective is to maintain a mortality risk of no more than 35% (subject to a risk of biomass being below B_{lim} of less than 5%). Advice was also drafted to be consistent with the NAFO precautionary approach (FC Doc. 04-12).

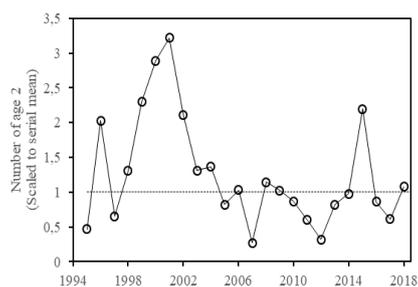
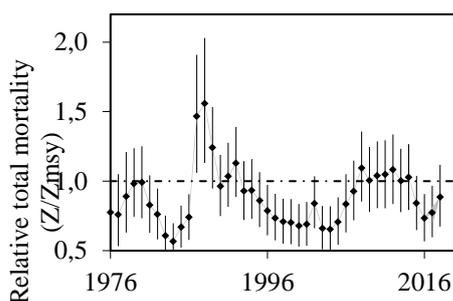
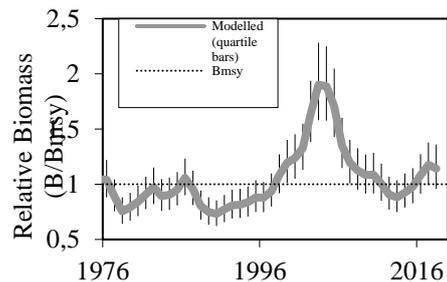
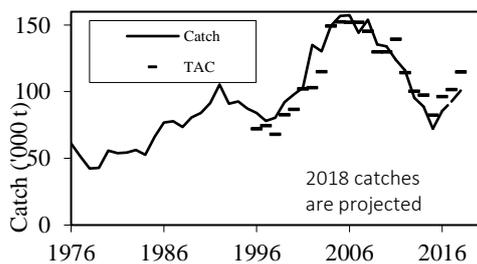
Objective	Status	Comment/consideration
Apply Precautionary Approach	●	Stock status is both estimated and forecast relative to precautionary reference points

Management unit

The stock, considered distinct from all others, is distributed throughout Subarea 1, extends into Div. 0A east of 60°30'W, and is assessed as a single stock.

Stock status

Biomass at the end of 2017 is close to B_{msy} and the probability of being below B_{lim} is very low (<1%). The probability of mortality in 2018 being above Z_{msy} is 36%. Recruitment is close to average.



Reference points

B_{lim} has been established as 30% B_{msy} , and Z_{msy} (fishery and cod predation) has been set as the mortality reference point (FC Doc. 04/18). B_{msy} and Z_{msy} are estimated directly from the assessment model.

Projections

Predicted probabilities of transgressing precautionary reference points in 2019 – 2021 under eight catch options and subject to predation by a cod stock with an effective biomass of 34 Kt.

34 000 t cod Risk of:	Catch option ('000 tons)							
	80	85	90	95	100	105	110	115
falling below Bmsy end 2019 (%)	30	30	31	32	33	33	33	34
falling below Bmsy end 2020 (%)	30	30	30	33	34	35	35	37
falling below Bmsy end 2021 (%)	29	29	31	34	34	36	37	38
falling below Blim end 2019 (%)	0	0	0	0	0	0	0	0
falling below Blim end 2020 (%)	0	0	0	0	0	0	0	0
falling below Blim end 2021 (%)	0	0	0	0	0	0	0	0
exceeding Zmsy in 2019 (%)	13	17	21	26	30	35	40	44
exceeding Zmsy in 2020 (%)	13	17	22	26	31	36	41	46
exceeding Zmsy in 2021 (%)	14	17	23	27	32	38	42	47

Assessment

Advice is based on risk analysis coming from a quantitative model. The analytical assessment was run in 2018 with revised treatment of the input data (SCR Doc.18/56, 18/60) and with updated data series.

The next assessment is scheduled for 2019.

Human impact

Mortality related to the fishery has been documented. Other human sources (e.g. pollution, shipping, oil-industry) are considered minor.

Biological and Environmental Interactions

Cod is an important predator on shrimps. This assessment incorporates this interaction. Other predation is likely but not explicitly considered. Shrimps might be important predators on, for example, fish eggs and larvae.

Fishery

Shrimps are caught in a directed trawl fishery. Bycatch of fish in the shrimp fishery is around 1% by weight. The fishery is regulated by TAC.

Recent catches and TACs (t) have been as follows:

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Enacted TAC ¹	130 153	130 153	139 583	114 425	100 596 ¹	97 649 ¹	82 561 ¹	96 426 ¹	101 706 ¹	114 876 ¹
STATLANT 21	133 990	129 179	123 195	114 970	91 802	88 834	71 777	82 922	89 069	-
NIPAG	135 458	133 991	123 989	115 977	95 381	88 765	72 256	85 527	89 396	101 250 ²

¹ Sum of TACs autonomously set by Canada and Greenland.

² Expected to year end

Effects of the fishery on the ecosystem

Measures to reduce effects of the fishery on the ecosystem include area closures, moving rules and gear modifications to reduce damage to benthic communities and reduce bycatch.

Source of Information SCS Doc 13/04, FC Docs 04/18, SCR Docs 18/55, 56, 57, 58, 60.

Northern Shrimp in Denmark Strait and off East Greenland

Advice October 2018 for 2019

Recommendation

In 2016 the stock remained at a low level, comparable to previous years, and there is no new information to indicate a change in stock status. Given the lack of current information, SC is not able to provide advice on the sustainable exploitation of this stock. As an interim measure, it is not considered appropriate that catches should exceed 2.000 t. SC advises that a survey should be carried out in future years.

Management objectives

No explicit management plan or management objectives have been defined by the Government of Greenland.

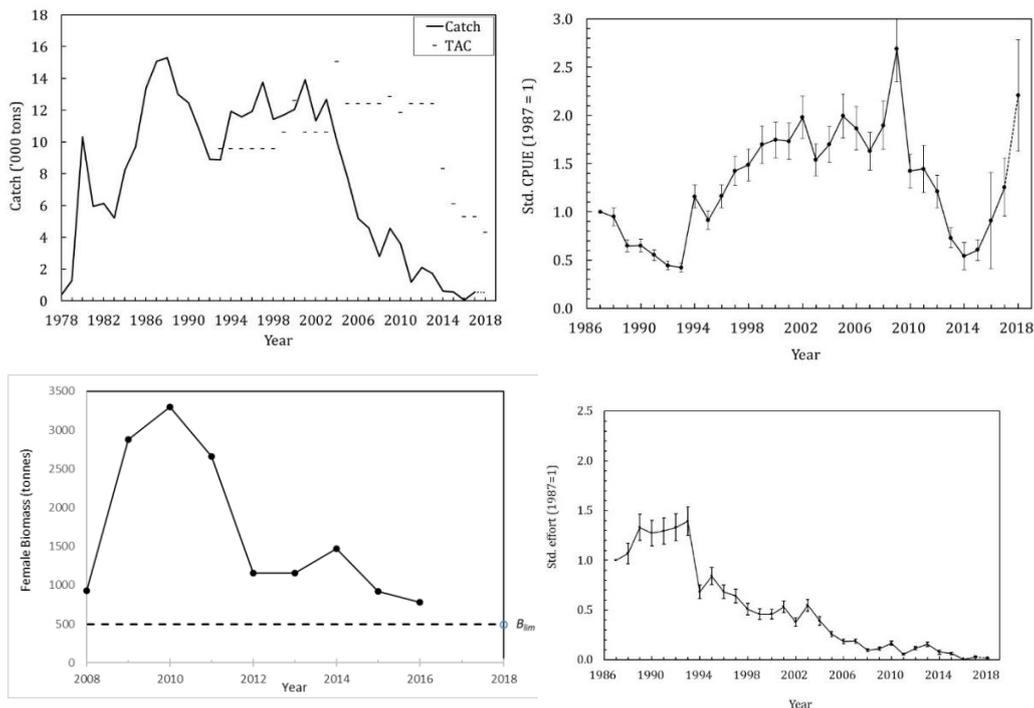
Objective	Status	Comment/consideration
Apply Precautionary Approach	●	B_{lim} is defined. No fishing mortality reference point defined

Management unit

The shrimp stock is distributed off East Greenland in ICES Div. XIVb and Va and is assessed as a single population.

Stock status

The stock size remained at a very low level (relatively close to B_{lim}) in 2016 despite several years of very low exploitation rates. There is no new information to indicate a change in stock status.



Reference points

Scientific Council considers that a female survey biomass index of 15% of its maximum observed level provides a proxy for B_{lim} (SCS Doc. 04/12).

Projections

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

Assessment

Advice is based on qualitative evaluation of biomass indices in relation to historic levels.

Evaluation of stock status is based upon interpretation of commercial fishery and research survey data. The trends in the survey and the standardized CPUE have been similar since the start of the survey, however

they diverged in 2016, the last year for which there are survey data available. Since 2015, this has been an opportunistic fishery with vessels stopping off on route between other fishing grounds. Therefore, CPUE may no longer be a reliable indicator of the stock status. No survey was carried out in 2017 and 2018.

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 increasing in East Greenland waters since 2008.

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 (tonnes) were as follows:

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Enacted TAC	12835	11835	12400	12400	12400	8300	6100	5300	5300	4300
SC Recommended TAC	12400	12400	12400	12400	12400	2000	2000	2000	2000	2000
NIPAG	4555	3602	1199	2109	1717	622	576	49	561	545 ¹

¹ To July 2018

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 Doc. 18/059