



22. oktober 2018

J.nr. 20.00-11

Kitaata Tunullu imartaanni raajarniarnerit pillugit biologit 2019-imut siunnersuinerisa eqikkarnerat

Eqikkaanermi matumani NAFO-p siorna siunnersuinerani allannguutaasimasut naatsumik allaaserineqarput, kiisalu raajartassiissutigineqarsinnaasutut innersuussutigineqartut saqqummiunneqarlutik. Innersuussutigineqartut ilanngussami itisilerlugit nassuiarneqarput.

2018-imit siunnersuinermit allannguutaasut pingaarnerusut

Kalaallit Nunaata kitaata imartaanni raajartassiissutigineqarsinnaasutut innersuussutigineqartut 2019-imi allannguuteqaratik 105.000 tonsuinnarput. Tunumi raajartassat taamatuttaaq allannguuteqaratik 2.000 tonsuinnassapput.

2019-imut siunnersuineq

Raajat

Kalaallit Nunaata kitaata imartaani

105.000 tonsit.

2018-imut siunnersuineq: 105.000 tons.

2018-imi pisarineqartussatut naatsorsuutigisat tamakkerlugit: 101.250 tonsit missaat.

Raajat

Kalaallit Nunaanni Tunup imartaani

2.000 tons.

2018-imut siunnersuineq: 2.000 tons.

2018-imi pisarineqartussatut naatsorsuutigisat tamakkerlugit: < 1.000 tons.

Siunnersuineq pisortatigoortoq Aalisarnermut Naalakkersuisoqarfimmuttaaq nassiunneqartoq NAFO`p nittartagaani atuarneqarsinnaalereerpoq. Pinngortitaleriffimmeersut siunnersuinarnermi atugassanik allakkianik tunuliaquttatut atorneqartussanik suliaqarput. Uppernarsaataasunik suli amerlanerusunik piumasaqartoqassappat Pinngortitaleriffik tunniussaqaqarnissamut soorunalimi piareersimavoq.

Siunnersuinermit tunuliaqutaasut itinerusumik nassuiaateqarfigineqarnissaat, apeqqutitut akissutissaasinnaasut aammalu ilisimasanik immersoqatigiinnissaq periarfissiissutiginiarlugit Pinngortitaleriffimmeersut oqartussaasut inuussutissarsiortullu sinniisaannik piaartumik aggersaanialersaarput.

Inussiarnersumik inuulluaqqusillunga

Helle Siegstad, afdelingschef

Ilanngussaq

Siunnersuineq tuluttut allaqqaarneqarneqarpoq, allakkiallu matuma naajartornerani oqaasertaliunneqarsimasut atuarneqarsinnaapput.

Kalaallit Nunaata kitaata imartaani raajat

NAFO' mit innersuussutigineqarpoq 2019-imi raajartassiissutigineqarsinnaasut 105.000 tonsiusasut. Tassa 2018-imi siunnersuinertut amerlaqatigiinnassapput..

Siunnersuinermit tunngassuteqartut

Kalaallit Nunaata kitaata imartaani pisassiissutigineqarsinnaasutut innersuussutigineqartunik annertussuiliinermit aallaaviuvoq biologit misissuisarnerini, pisarineqarsimasut pillugit paasisutissani kiisalu naatsorsuusiortit tunngavigalugit raajaqassutsip oqimaassusinngorlugu siuarateqarsimanera.

Raajaqassutsip nikerarnera missiliortarlugu naatsorsuusiortermi paasisutissat, soorlu aamma ukiuni siuliini taamaaliortarsimasugut, raajarniat pisarisartagaannit kisitsisinik (Takussutissiaq 1), biologit misissuisarnerinit naatsorsuusiortat naapertorlugit raajaqassutsinik missiliuussinermi kisitsisinik, aammalu raajarniartartut kalinnermi ataatsimi pisarisartagaasa annertussusiat kiisalu saarullit raajartortarnermikkut raajaqassutsimut ilanngartuutissaattut naatsorsuutigisat oqimaassusinngorlugit missiliorneqarnerinit kisitsisinik aallaaveqartarpoq.

Qarasaasiaq atorlugu naatsorsuinerit takutippaat raajaqassuseq oqimaassusinngorlugu 2004-mi qaffasinnerpaamiissimasoq tamatumalu kingorna 2013-ip tungaanut appariartuinnavisimalluni. Kingornali raajaqassuseq oqimaassusinngorlugu siuariallalaarsimavoq, 2018-illu naajartornerani naatsorsuusiani takuneqarsinnaavoq raajaqassutsip tamakkiisumik piujuartitsiniarnerpaamillu iluaqutigineqarsinnaanerata killinga qanillillugu inissisimasoq (Takussutissiaq 2).

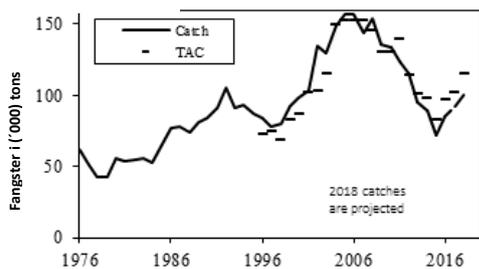
Raajaqqat ukiunik marlunnik utoqqaassusillit ukiullu tulliuttut pingasut, sisamat qaangiuppata raajarniarnermi akuulerumaartussat amerlassusiat agguaqatigiissillugu taamaaginnangajassapput (Takussutissiaq 4).

2008-miit 2014-imut raajaqassutsimit tamakkiisumik annaasaqaataasartut piujuartitsisumik iluaqutiginninnissamik qulakkeerinninnissap naligingajalluinnarpaa (Z_{msy}). 2014-ip kingorna raajaqassutsimit annaasaqaataasartut piffissami sivikitsuinnarmi appariaraluarput, 2018-imili qaffaqqilluni Z_{msy} missaaniilerpoq (Takussutissiaq 3).

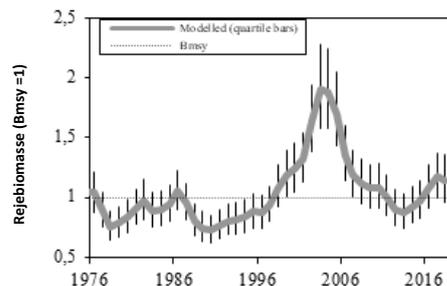
Takussutissiaq 1. Kalaallit Nunaata kitaani Canadamilu raajat (tonsinnngorlugit) 2011-miit 2018-imut tulaanneqartartut tamakkerlugit

Ukioq	2011	2012	2013	2014	2015	2016	2017	2018
<i>Kalaallit Nunaat</i>	122.659	115.965	95.379	88.765	72.254	84.356	89 396	101.250 ¹
<i>Canada</i>	1.330	12	2	0	2	1.171	3.215	737 ¹

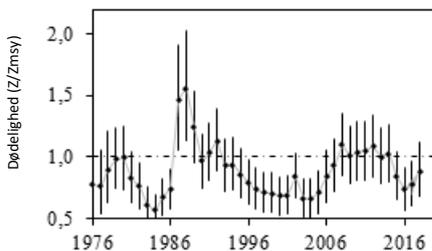
¹ naatsorsuutigisat



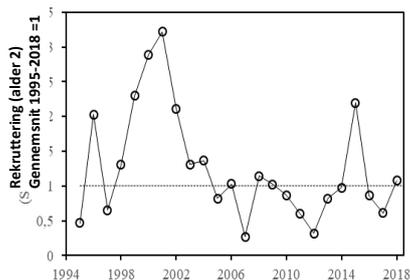
Takussutissiaq 1. Pisat tamakkiisut 1970-2018



Takussutissiaq 2. Raajaqassuseq oqimaassusinnngorlugu (qarasaasiamik naatsorsuut atorlugu)



Takussutissiaq 3. Aalisagaqassusimik annaasaqaataasut tamakkerlugit (aalisarneq uumasoaqatiminillu nerineqarneri)



Takussutissiaq 4. Raajaqqat aalisarneqarsinnaalerumaartut takkussuunnerat (ukiunik marlunnik utoqqaassusillit)

Ilisimatuussutsikkut Siunnersuisoqatigiit Naalakkersuisut aqutsinikkut piumasaqaatigisaat aallaavigalugit Nunatta Kitaani raajarniarneq naliliiffigaat isumaqarlutillu 2019-imi 105.000 tonsinik raajarniartitsinissaq piujuartitsiniarnermik tunngaveqassasoq . Imaappoq raajaqassusimit tamakkiisumik annaasaqaataasartut (Z_{msy} : pisarineqartartut toquinnartartullu katillugit) piujuartitsiniarnermik tunngaveqarunnaarnissaanut periarfissaq 35 %-iuvoq aammalu taamaalilluni raajaqassusip appasinnerpaaffissaatut killissarititaamit appasinnerusumiilernissaata angunissaanut periarfissaq appasilluni (B_{lim}).

Kalaallit Nunaanni Tunup imartaani raajat

Tunup imartaani 2019-imut raajartassiisuteqarnissami 2.000 tonsit sipporneqartariaqanngik-kaluartut NAFO innerssuussuteqarpoq. Siunnersuineq taamaalilluni 2018-imut siunnersuisima-nermit allannguuteqarfiunngilaq. Tamatuma saniatigut NAFO-p siunnersuutigaa peqassusimik misissuinerit ingerlanneqartariaqartut siunnersuinissamut atorneqassammata.

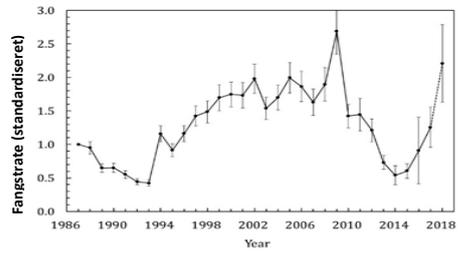
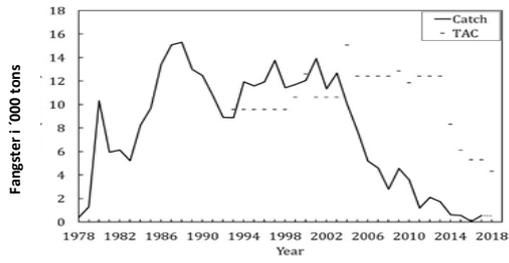
Siunnersuinermit tunngasut

Tunup imartaani raajarniarnernut tunngatillugu siunnersuisarnerit 2004-miit 2.000 tonsinut inissinneqartarsimapput.

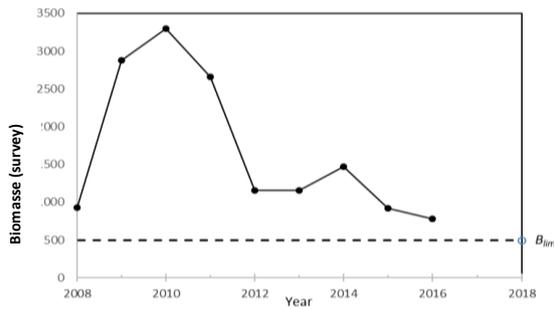
Kilisaatip misissuutip "Pâmiut" teknikkikkut ajoquteqarnera pequtugalugu biologit Tunup imartaani raajanik 2017-imi 2018-imilu misissuinngitsoorput. Tunup imartaani ukiuni kingulliinerusuni raajarniartarnerit aalaakkaasumik ingerlanneqartarsimanngimmata NAFO´p ilisimatuussutsikkut ataatsimiititaliaanit erseqqissaatigineqarpoq kalinnermi ataatsimi pisaa-sartut annertussusiat imaassinnaasoq peqassusip piviusumik killiffianut naapertuteqqissaan-ngitsoq. Tappavani raajaqassuseq ukiuni arlaqalersuni allannguuteqarpiarnani appasissumiit-tuarsimavoq, naak pisaasartut annertugisassaangikkaluartut (Takussutissiaq 8). Taamaammat ilisimatuussutsikkut ataatsimiititaliaq allannguuteqartitsigani 2019-imut raajartassiisutigi-neqarsinnaasutut innerssuusutigisani 2.000 tonsiutippai. Takussutissiaq 2.

Tabel 2. Tunup imartaani raajat pisaasartut tulaanneqartartullu tamakkerlugit 2011-miit 2018-imut

Ukioq	2011	2012	2013	2014	2015	2016	2017	2018
Kalaallit Nunaat	1.199	2.109	1.717	622	576	49	561	545

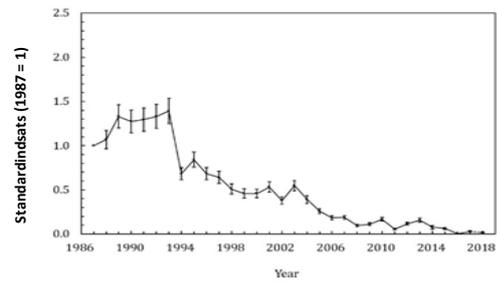


Takussutissiaq 5. Pisaasartut tamakkerlugit 1978-2018



Takussutissiaq 7. Raajaqassuseq oqimaassusinnngorlugu (arnavissat) (2008 – 2016)

Takussutissiaq 6. Kalinnermi ataatsimi pisaasartut (1986-2018)



Takussutissiaq 8. Raajarnernerup "sakkortussusia"(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).

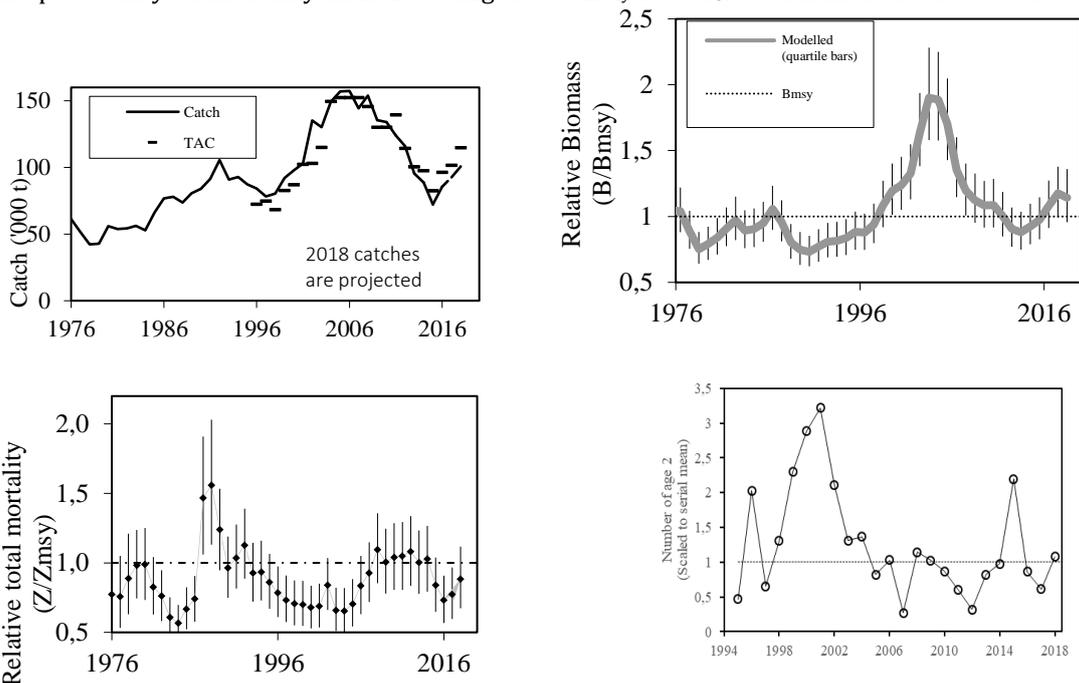
Objective	Status	Comment/consideration
Apply Precautionary Approach	●	Stock status is both estimated and forecast relative to precautionary reference points

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 2018 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.

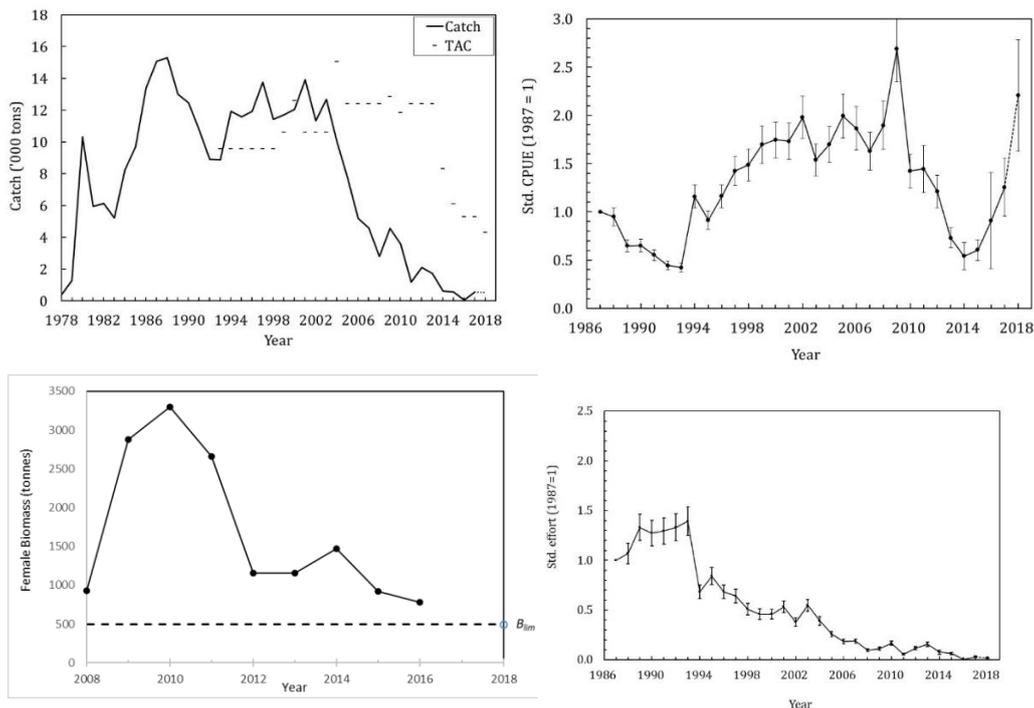
Objective	Status	Comment/consideration
Apply Precautionary Approach		B_{lim} is defined. No fishing mortality reference point defined

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