



5. oktober 2017

J.nr. 20.00-11

Kitaata Tunullu imartaanni raajarniarnerit pillugit biologit 2018-imut siunnersuinerisa eqikkarnerat

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

2017-imut siunnersuinermit allannguutaasut pingaarnerusut

Kalaallit Nunaata kitaata imartaani raajartassiissutigineqarsinnaasutut innersuussutigineqartut 2017-imi 90.000 tonsiniit 2018-imut 105.000 tonsinut qaffariaateqarput.

2018-imut siunnersuineq

Raajat

Kalaallit Nunaata kitaata imartaani

105.000 tonsit.

2017-imut siunnersuineq: 90.000 tons.

2017-imi pisarineqartussatut naatsorsuutigisat tamakkerlugit: 90.000 tonsit missaat.

Raajat

Kalaallit Nunaanni Tunup imartaani

2.000 tonsit.

2017-imut siunnersuineq: 2.000 tonsit.

2017-imi pisarineqartussatut naatsorsuutigisat tamakkerlugit: <1.000 tonsit inorlugit..

Siunnersuineq pisortatigoortoq Aalisarnermut Naalakkersuisoqarfimmuttaaq nassiunneqartoq NAFO`p nittartagaani atuarneqarsinnaalereerpoq. Pinngortitaleriffimmeersut siunnersuiniarnermi atugassanik allakkianik tunuliaquttatut atorineqartussanik suliaqarput. Uppernarsaataasunik sulii amerlanerusunik piumasaqartoqassappat Pinngortitaleriffik tunniussaqaarnissamat soorunalimi piareersimavoq.

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

Inussiarnersumik inuulluaqqusillunga

Helle Siegstad, immikkoortortami pisortaq

Ilanngussaq

Siunnersuineq tuluttut allaqqaarneqarneqarpoq, allakkiallu matuma naajartornerani oqaasertaliunneqarsimasut atuarneqarsinnaapput.

Kalaallit Nunaata kitaata imartaani raajat

NAFO' mit innersuussutigineqarpoq 2018-imi raajartassiissutigineqarsinnaasut 105.000 tonsit sipportariaqangikkaluaaraat. Tassa 2017-imut siunnersuinerimi 90.000 tonsinik pisassiissuteqarsinnaanermik innersuussuteqarnermiit taamaalilluni 17 %-imik qaffariartitsisoqarpoq.

Siunnersuinermit tunngassuteqartut

Kalaallit Nunaata kitaata imartaani pisassiissutigineqarsinnaasut innersuussutigineqartunik annertussuliinerimi aallaaviuvoq biologit misissuisarnerini, pisarineqarsimasut pillugit paasissutissani kiisalu naatsorsuusionerit tunngavigalugit raajaqassutsip oqimaassusinnngorlugu siuarateqarsimanera.

Raajaqassutsip nikerarnera missiliorniarlugu naatsorsuusionerimi paasissutissat, soorlu aamma ukiuni siuliini taamaaliortarsimasugut, raajarniat pisisartagaannit kisitsisinik (Takussutissiaq 1), biologit misissuisarnerinit naatsorsuusiat naapertorlugit raajaqassutsinik missiliuussinerni kisitsisinik, aammalu raajarniartartut kalinnermi ataatsimi pisisartagaasa annertussiat kiisalu saarullit raajatortussatut naatsorsuutigisat oqimaassusinnngorlugit missiliorneqarnerinit kisitsisinik aallaaveqartarpoq.

Qarasaasiaq atorlugu naatsorsuinerit takutippaat raajaqassuseq oqimaassusinnngorlugu 2004-mi qaffasinnerpaamiissimasoq tamatumalu kingorna 2013-ip tungaanut appariartuinnavissimalluni. Kingornali raajaqassuseq oqimaassusinnngorlugu siuariallaarsimavoq 2017-illu naajartornerani naatsorsuusiani takuneqarsinnaavoq raajaqassutsip tamakkiisumik piujuatitsiniarnerpaamillu iluaqtigineqarsinnaanerata killinga 39 %-imik qaangerlugu inissimasoq (Takussutissiaq 2).

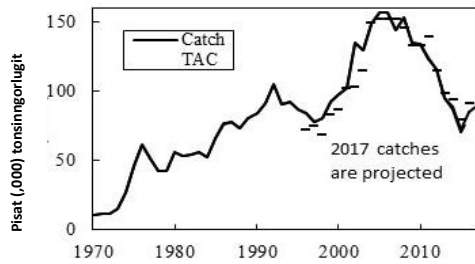
Raajaaqqat ukiunik marlunnik utoqqaassusillit ukiullu tulluuttut marluk qaangiuppata raajarniarnermi akuulerumaartussat amerlassusiat agguaqatigiissillugu amerlassuserisarsimasaannit ikinnerupput ukiunilu kingullerni aqqaneq marlunni amerlassutsimikkut appasittumiittuarsimallutik – matumani 2015-imi amerlassuserisaat eqqaassanngikkaanni (Takussutissiaq 4).

Raajat oqimaassusinnngorlugu peqassutimit tamakkiisumik annaasaqaataasartut (tassa kilisannearlutik pisaasartut aammalu pissusissamisoortumik toquinnarlutik peqassutsimit annaasaqaataasussatut naatsorsuutigeriikkat katinnerat matumani pineqarput) ukiuni 25-ni kingullerni appasittumiittuarsimapput, kisiannili 2016-imi 2017-imilu taamatut annaasaqaataasimasut ukiut pineqartut ingerlanerini aatsaat taamak appasitsigisumiissimapput (Takussutissiaq 3).

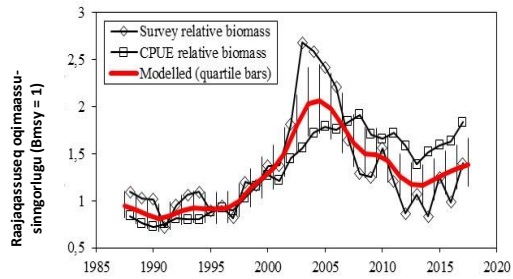
Takussutissiaq 1. Kalaallit Nunaata kitaani Canadamilu raajat (tonsinnngorlugit) 2011-miit 2017-imut tulaanneqartartut tamakkerlugit

Ukioq	2011	2012	2013	2014	2015	2016	2017
<i>Kalaallit Nunaat</i>	122.659	115.965	95.379	88.765	72.254	84.356	89.000 ¹
<i>Canada</i>	1.330	12	2	0	2	1.171	1.000 ¹

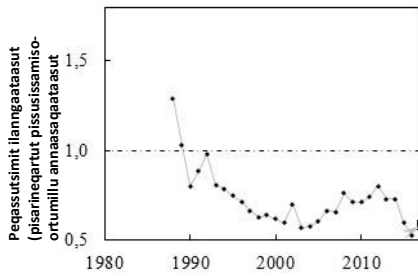
¹ naatsorsuutigisat



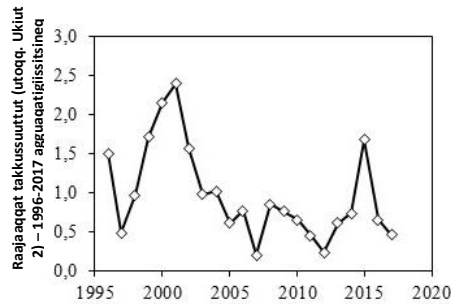
Takussutissiaq 1. Pisat tamakkiisut 1970-2017



Takussutissiaq 2. Raajaqassuseq oqimaassusingorlugu (qarasaasiamik naatsorsuut atorlugu)



Takussutissiaq 3. Raajaqassutsimit annaasaqataasut tamakkerlugit (raajarniarnarnermit toquinnartussallu katillugit)



Takussutissiaq 4. Raajaqaqat aalisarneqarsinnaalerumaartut takkussuunnerat (ukiunik marlunnik utoqqaassusillit)

Ilisimatuussutsikkut ataatsimiititaliap maluginiarpaasiusinnerusukkut siunnersuisarnerni raajarniarnerup piujuartitsiniarnermik tunngaveqarluni tamakkiisumik iluaqutigineqarsinnaanerata killissaa, tassa raajaqassutsimit ilanngartuinerup tamarmiusup (Z_{msy}) killingata qaangerneqarsinnaaneraniq periarfissiissutip 35 %-imiinnissaanik akuersisoqarsimasoq. Taamaattorli qarasaasiaq atorlugu ukioq manna naatsorsuusiortnerit takutippaat ukiuni kingullerni naatsorsuinerit raajaqassuttip piviusumik ineriartorsimaneraniq naapertuuteqqissaartumik takutitsingitsut. Taamaattumik ilisimatuussutsikkut ataatsimiititaliaq naliliivoq periarfissiissutitut taasaq siuliani eqqartorneqartoq 35 %-imut inissinneqarsimasoq 20 %-imut appartinneqartariaqartoq, taamaalilluni naatsorsuusiortnerit tunngavigalugit raajaqassutisimik missiliuussinerit piviusunut ullumikkut atuuttunut naapertuunnerulersinneqassagaluarmata. Nalilersuinerit tamakku aallaavigalugit ataatsimiititaliap 2018-imi 105.000 tonsinik pisassiissuteqartoqarsinnaanera siuliani taakkartukkanut napertuuttutut isigalugu innersuussutigaa.

Tamakku tamaasa eqqarsaatigalugit naatsorsuusiortnerit peqassuttip nikerarneranut naapertuunnerusumik takussutissiisalnissaat anguniarlugu qarasaasiaq atorlugu naatsorsuutip pitsanngorsarlugu ineriartorteqqinnissaa Pinngortitaleriffiup 2018-imi pimoorullugu sulissutigissavaa. Pingaartumik naatsorsuutip kisitsisinut naatsorsuusiortnermi atorneqartartunut (peqassuttip nikerarneranut aammalu saarullit raajaqassutisimut sunniisarnerinut tunngassutillit kisitsisit) malussarippallaanera sukumiinerusumik misissorneqassalluni.

Naatsorsuutip malussarissusia sillimaffiginiarlugu raajarniartartut pisisartakkatik namminneerlutik killileqartittalersimavaat, tassa raajartassiissutigineqartussat allannguiffigineqartussaatilugit ukiut marluk sioqqullugit pisassiissutigineqarsimasut $\pm 12\frac{1}{2}$ %-imik appaaffigineqarsinnaassasutut imaluunniit qaffaaffigineqarsinnaassasutut aaliangersaavigisimavaat.

Kalaallit Nunaanni Tunup imartaani raajat

Tunup imartaani 2018-imut raajartassiisuteqarnissami 2.000 tonsit sipporneqartariaqanngikkaluartut NAFO innerssuussuteqarpoq. Siunnersuineq taamaalliluni 2017-imut siunnersuisimanermit allannguuteqarfiunngilaq.

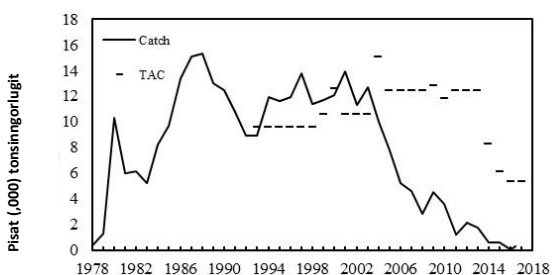
Siunnersuinermit tunngasut

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

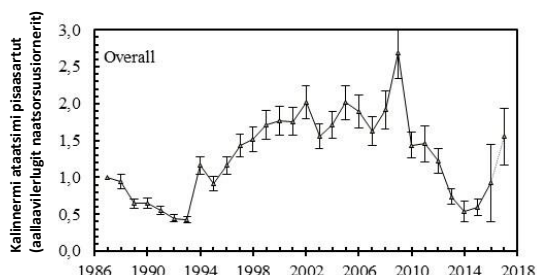
Kilisaatip misissuutip "Pâmiut" teknikkikkut ajoquteqarnera peqqutigalugu biologit Tunup imartaani raajanik 2017-imi misissuinngitsoorput. Tunup imartaani ukiuni kingulliuinerusuni raajarniartarnerit aalaakkaasumik ingerlanneqartarsimanngimmata NAFO'p ilisimatuussutsikkut ataatsimiititaliaanit erseqqissaatigineqarpoq kalinnermi ataatsimi pisaasartut annertussusiat imaassinnaasoq peqassutsip piviusumik killiffianut naapertuuteqqissaanngitsoq. Tappavani raajaqassuseq ukiuni arlaqalersuni allannguuteqarpiarnanni appassisumiittuarsimavoq, naak pisaasartut annertugisassaanngikkaluartut (Takusutissiaq 8). Taamaammata ilisimatuussutsikkut ataatsimiititaliaq allannguuteqartitsigani 2018-imut raajartassiisutigineqarsinnaasutut innersuussutisigani 2.000 tonsiutippai.

Tabel 2. Tunup imartaani raajat pisaasartut tulaanneqartartullu tamakkerlugit 2011-miit 2017-imut

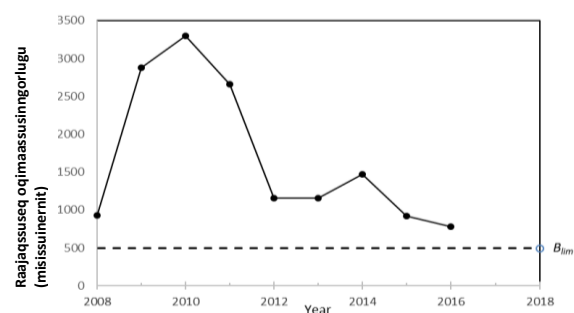
Ukioq	2011	2012	2013	2014	2015	2016	2017
Kalaallit Nunaat	1.199	2.109	1.717	622	576	49	557



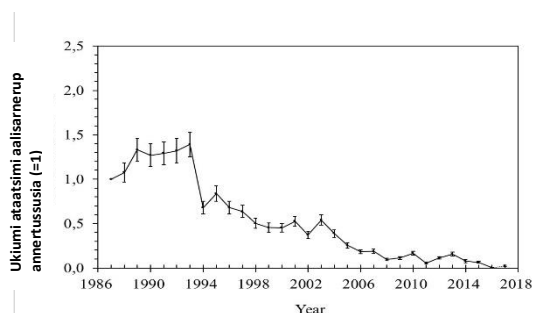
Takusutissiaq 5. Pisaasartut tamakkerlugit 1978-2017



Takusutissiaq 6. Kalinnermi ataatsimi pisaasartut (1986-2017)



Takusutissiaq 7. Raajaqassuseq oqimaassusinnngorlugit (arnavissat) (2008 – 2016)



Takusutissiaq 8. Raajarniarnernup "sakkortussusia" (1986 – 2016)

Northern Shrimp in Subarea 1 and Div. 0A

Advice September 2017 for 2018

Recommendation

Scientific Council advises that catches in 2018 should not exceed 105 000 t.

The TAC advice for this stock has until recently been set according to an accepted risk level of 35% of exceeding Z_{msy} . However, there is concern that the model in the most recent years does not fully reflect the uncertainty associated with stock status. SC therefore considers that a lower risk tolerance of around 20% is warranted equaling a TAC of approximately 105 000 t in 2018. SC notes that catches at this level is likely to maintain the stock at the current level.

Management Objectives

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

Canada requested Scientific Council to provide advice on this stock within the context of the NAFO Precautionary Approach Framework (SCS Doc. 13/04).

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

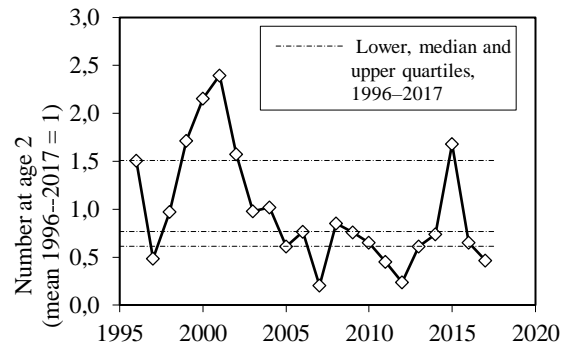
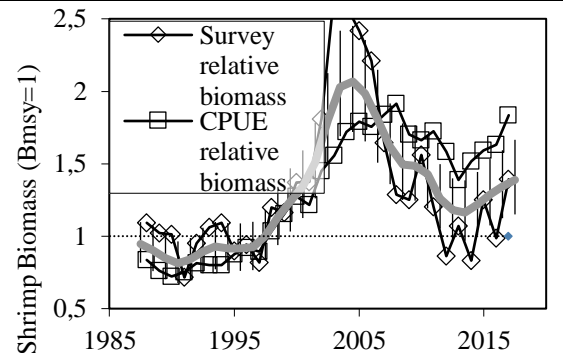
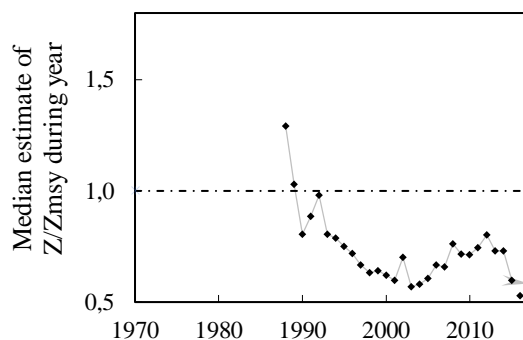
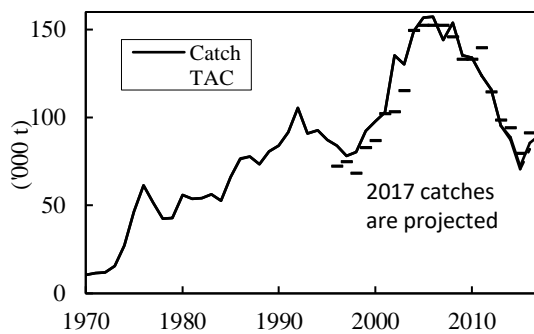
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Management unit

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

The stock is estimated to be 39% above B_{msy} and the risk of being below B_{lim} in 2017 is very low (<1%). The number at age 2 in 2017, expected to contribute significantly to the fishable biomass within four years, is low.



Reference points

B_{lim} is 30% of B_{msy} and the limit reference point for mortality is Z_{msy} (FC Doc. 04/18).

Projections

Predicted probabilities of transgressing precautionary reference points in 2018 – 2020 under eight catch options and subject to predation by a cod stock with an effective biomass of 25 Kt.

25 000 t cod Risk of:	Catch option ('000 tons)							
	100	105	110	115	120	125	130	135
falling below B_{msy} end 2018 (%)	13.3	14.7	14.6	15.0	15.0	15.4	16.3	16.5
falling below B_{msy} end 2019 (%)	14.6	16.0	16.8	17.3	17.8	18.7	19.5	19.2
falling below B_{msy} end 2020 (%)	16.0	17.6	18.5	19.2	20.3	21.6	22.4	22.6
falling below B_{lim} end 2018 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
falling below B_{lim} end 2019 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
falling below B_{lim} end 2020 (%)	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
exceeding Z_{msy} in 2018 (%)	18.0	20.5	22.7	25.0	27.6	30.5	32.9	34.9
exceeding Z_{msy} in 2019 (%)	19.0	21.2	23.8	26.8	29.3	31.8	34.5	37.0
exceeding Z_{msy} in 2020 (%)	19.8	22.9	25.0	27.4	30.3	33.9	36.5	38.5

Assessment

Advice is based on risk analysis coming from a quantitative model, and on qualitative evaluation of biomass and stock-composition indices. The analytical assessment was run with the same configuration of the model as in 2016 (SCR Doc.17/52) and with updated data series.

The next assessment is scheduled for 2018.

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
Enacted TAC ¹	130 153	130 153	139 583	114 425	100 596 ³	97 649 ³	82 561 ³	96 426 ³	101 706
STATLANT 21	133 990	129 179	123 195	114 970	91 802	88 834	71 779	80 802	-
NIPAG	135 458 ³	133 991 ³	123 989 ³	115 977 ³	95 381 ³	88 765 ³	72 256 ³	85 527 ³	90 000 ²

¹ Sum of TACs autonomously set by Canada and Greenland;

² Expected to year end.

³ This table has been updated to include the area North of 73°30.

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.

Special comments

SC is concerned that the 2017 parameter estimate of MSY was quite different than that estimated in 2016 suggesting some degree of instability of the model. This was further demonstrated by changes in perception of stock trajectory in recent years based on a 5-year retrospective analysis. The assessment model may now not fully reflect the uncertainty associated with stock status.

Source of Information SCS Doc 13/04, FC Docs 04/18, SCR Docs 17/51, 52, 55, 56.

Northern Shrimp in Denmark Strait and off East Greenland

Advice September 2017 for 2018

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. SC therefore reiterates its advice that catches should not exceed 2 000 t.

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

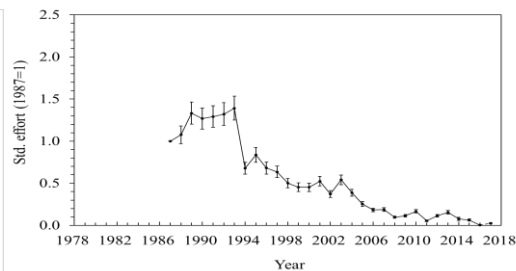
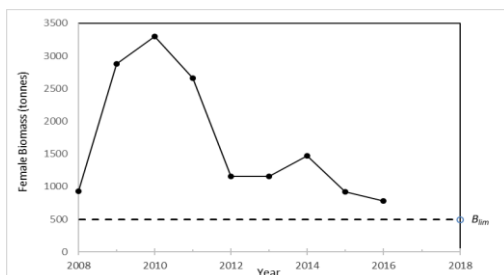
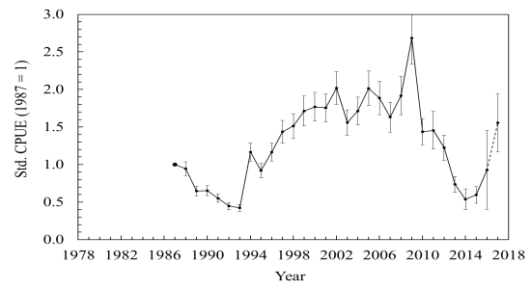
● Intermediate

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). This corresponds to an index value of 495 t.

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. Since 2015, this has been an opportunistic fishery with vessels stopping off on route between other fishing grounds. This may indicate that the CPUE may no longer be a reliable indicator of the stock status. No survey was carried out in 2017.

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 been increasing in East Greenland waters until recently, but decreased in 2016.

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 were as follows:

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Enacted TAC	12835	11835	12400	12400	12400	8300	6100	5300	5300
SC Recommended TAC	12400	12400	12400	12400	12400	2000	2000	2000	2000
NIPAG	4555	3602	1199	2109	1717	622	576	49	557 ¹

¹ To July 2017

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. 16/045, 17/057