



Raajat pillugit siunnersuineq 2017

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Kitaani Tunumilu raajarniarneq pillugu biologit siunnersuinerat 2017

NAFO/ICES-illu innersuussutigaaat raajat 2017-imi 90.000 tonsit sinnernagit pisassiisitigineqarsinnaanerit, taamaalilluni siunnersuineq 2016-imut siunnersuinermit allannguuteqarfiunani.

Tunup imartaani raajarniarnermut tunngatillugu 2017-imut pisassiisutigineqarsinnaasutut innersuussutigineqarput 2.000 tonsit, tassa 2016-imut siunnersuinermit allanngortoqanngilaq.

Kalaallit Nunaata kitaata imartaani raajartassiisutigineqarsinnaasunik siunnersuinermit tunngavigineqarput

- Naatsorsuutit takutippaat 2016-imi raajaqassuseq 2015-imi peqassutsimit allannguuteqangaarsimangitsoq
- Raajaqassuttip naatsorsuinerit tunngavigalugit peqassuttip pitsaanerpaaffigisariaqagaanit appasinnerulersinnaanerani aammalu peqassutsimit tamarmiusumit ilanngartuinerup tamakkiisup peqassuttip pitsaanerpaaffigisariaqagaanit qaffasinnerulersinnaaneraniq periarfissaq mikisuaannaasooq
- raajat mikisut (ukiunik marlunnik utoqqaassusillit) ukiut marluk qaangiunnerini raajarniarnermi akuulersussat amerlassusiat ukiuni 20-ni kingullerni agguaqatigiissillugu amerlassuserisarsimasaannut naapertuupput (kisiannili raajaaqqat ukiunik pingasunik sisamanillu utoqqaassusillit 2017-imi raajarniarnermi akuulersussat ikittuinnaapput; taamaattumillu 2017-imi raajarniarnermi raajanik nutaanik takkussuuttoqangaarnissaa naatsorsuutigineqanngilaq)
- saarullit raajaqassutsimik ilanngartuutaasut 2016-imi amerlassusiat 2014-2015-imi amerlassusiannut naleqqiullugu ikinneralaarsuupput.

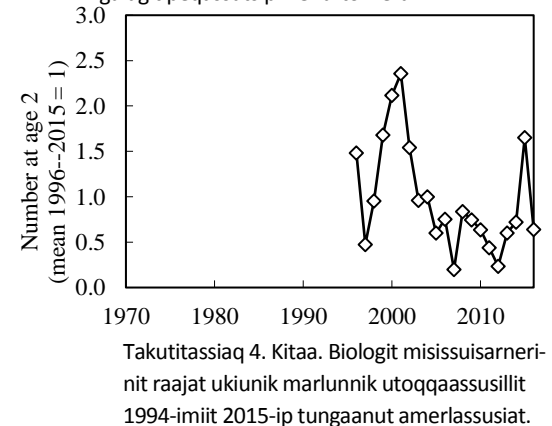
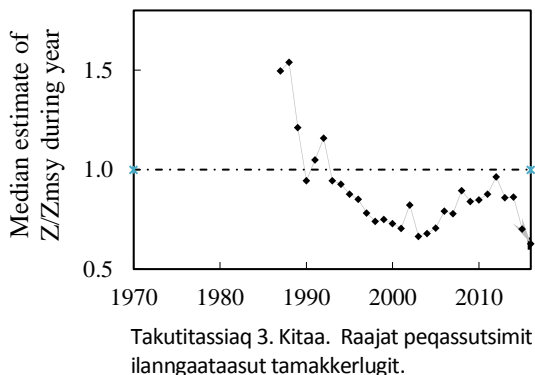
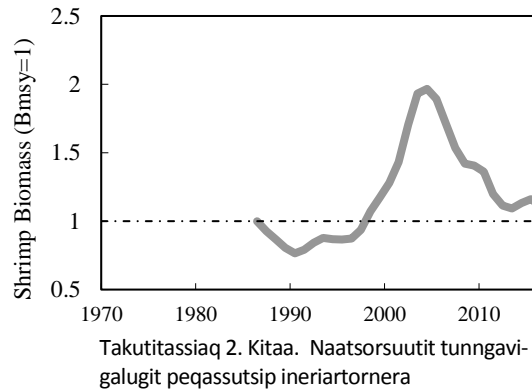
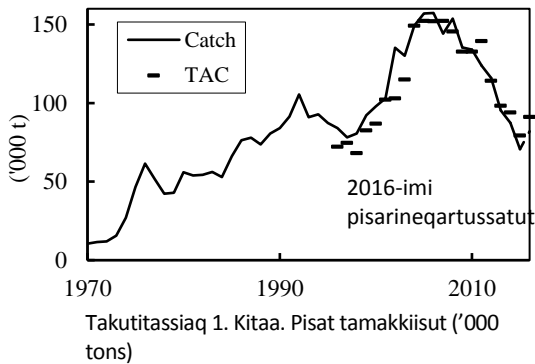
Kalaallit Nunaata Kitaata imartaani raajarniarneq pillugu SIUNNERSUINEQ (siunnersuinerup oqaasertai tuluttoortut ilanngussami ataatungaaniittumiipput)

Tamakkiisumik **pisaasartut** 2008-p tungaanut amerligaluttuinnavissimapput 2008-mi amerlanerpaanik pisaqartoqarmat 150.000 tonsit pisarineqarsimallutik, tamatumalu kingorna aamma pisassiisutaasartut ikiliartortinneqarsimanerat ilutigalugu pisaasartut ikiliartuinnavissimallutik (Takussutissiaq 1).

Kilisaatit **nalunaaquttap akunneranut piasartagaasa agguaqatigiissinnerisa** (piffissami aalajangersimasumi pisat amerlassusiat) raajaqassutsip inissisimavianik takutitsisarpoq, tassuuna raajat eqimassusiat toqqaannangikkaluartumik takuneqarsinnaasarmat aamma. Kilisaatit nalunaaquttap akunneranut piasartagaasa 2016-imi amerlassusiat 2015-imisut amerlassuseqapajaaginnarput. Raajarniutit imartami isorartussuseq eqqarsaatigalugu milligaluttuinnartumut ukiuni arlalinni katersuukkiartorujoorsinnarput, ullumikkullu Store Hellefiskebankip avannaatungaa Qeqertarsuullu Tunua raajarniarfiginerusarpaat.

Pinngortitaleriffimmeersut **raajaqassutsimik misissuisarnerisa** ersersippaat ukiormanna raajaqassuseq ukiuni tallimani kingullerni agguaqatigiissillugu peqassusaasarsimasunut nallersuuttoq.

Raajaqqanik mikisunik 2017-imi aalisarneqarsinnaalerumaartussanik peqassuseq ukiuni kingullerni aqqanilinni misissuisarnernut sanilliullugu appasittumiippoq. Raajat arnavissat amerlasuupillussuupput, angutivissallu ikillutik. Taamaattoqarnera peqqutaalluni siunissami raajaqassutsip amerleriarsinnaassusia sunnerneqarataannaavoq, raajaqassutsip appariartulersinnaanera matumani eqqarsaatigineqarluni.



2016-imi saarullisatsitsineqarpoq, ukiuni siuliinisullu imartani kujasinnerusuniittuni raajaqarfiuallaanngitsunilu saarullit katersuussimanerupput. Tamakkiisumik isigaluni naliliissagaanni ukiuni kingullerni pingasuni agguaqatigiissillugu saarulleqassutsip raajaqassutsimut ilanngartuinerata sunniutaa assigiinnapajaarpasippoq. Tassa raajaqassuseq tamakkiisumik ukiumut 35.000 tonsinik ilanngartorneqartartut naliliiffigineqarluni.

Pinngortitaleriffimmi ilisimatusartartut aammalu raajat pillugit ilisimatuussutsikkut ataatsimiititaliaq raajaqassutsimik nalilersuiniarnerminni qarasaasiaq atorlugu naatsorsuummik atuisarput. Tassa naatsorsuinerinik tunngaveqartumik raajaqassutsip inissisimavigisinnaasai assigiinngitsunut arfineq pingasunut missiliorneqartarput. Taamaaliornermi 2017-imi, 2018-imi kiisalu 2019-imi pisat amerlassuserisinnaasaat arfineq pingasunut immikkoortillugit aammalu saarullit raajartortarnermikkut peqassutsimit ilanngartuisinnaanerininik periarfissanik assigiinngitsunik aallaveqarluni naatsorsuusiorderit ingerlanneqartarput.

Pinngortitaleriffimmeersut ilisimatuussutsikkut siunnersuiniarnerminni qarasaasiaq atorlugu naatsorsueriaaseq (matematikkersornerusoq) tunngavigalugu peqassutsimik missingersuisarput, kiisalu pisassiissutigineqarsinnaasut assigiinngitsunik oqimaassuserneqarnerini taakkua peqassutsimut kingunerisinnaasaat takussutissiorniartarpaat saarullit raajaqassutsimut ilanngartuutaasarnert naatsorsuusiordernani aamma ilanngunneqartarluni.

2016-imi naatsorsuinerit ukiuni siuliini naatsorsuusiordernani ilanngunneqartartut assigalugit raajat pisat tamakkiisut amerlassusiat, raajanik tunisassiorderartut pisanik misissiliuinerat, biologit misissuisarnerinit raajaqassutsip missiliornera, raajaqarfinni saarulleqassutsip annertussusia kiisalu saarullit raajartortarnermikkut raajaqassutsimit ilanngartuisarnerisa annertussusiat naatsorsuusiorderfigineqartarpoq.

Pissutsit raajaqassutsimut sunniisartut allat qarasaasiaq atorlugu naatsorsuusiordernermi sulii ilanngunneqarnikuunngikkallarput. Tassami raaja imaani uumasooqatigiit nerisareqatigiiaarneranni paasiuminaassinnaasumi uumasuuvooq, tassani saarullip sunniisarnera kisimi pingaaruteqaannarani aamma imaani pissutsit assigiinngitsorpasuit ilisimaneqanngitsullu soorlu uumasooqatigiinnut, immap akuinut aammalu sananeqaataanut tunngassuteqartut aaliangiisooqataasinnaasarmata – soorlu ass. immap kissassusiata allanngorartarnera eqqarsaatigineqarsinnaasooq. Pinngortitaleriffimmi ilisimatusartartut sulipput sunniisartunik allanik pingaarnernik suussuseruiniarlutik, taamaalilluni tamakku aamma siunnessami siunnersuisarnerni ilanngunneqarlutik nalilersuutaasalerniassammata.

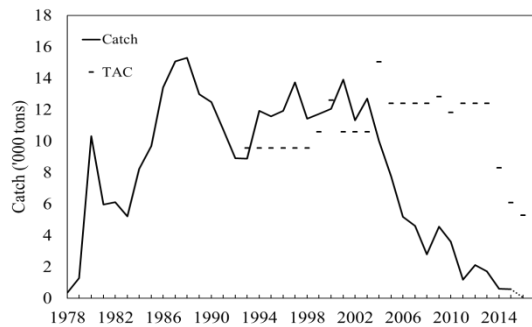
Qarasaasiamik naatsorsuutip takutipkaa raajaqassutsip 2016-ip naajortornerani peqassutsip pitsaanerpaaffigisariaqagaanit qaffasinnerusumik inissisimanissaa ilimanaateqartorujussusoq (peqassuseq, Bmsy), taamaalilluni 90.000 tonsinik raajartassiissuteqarsinnaaneq peqassutsip attassinnaassallugu. Taamaattumik ilisimatuussutsikkut ataatsimiititaliaq innersuussutigaa 2017-imi raajartarineqarsinnaajumaartussat 90.000¹ tonsit sippusanngikkaat (siunnersuinerup tuluttoortaa ilanngussami 1-imi takuneqarsinnaavoq).

Pisassiissutininik ukiuni kingulliunerusuni allannguisarnerit qaffaalaqattaarnikkut pisarpoq ($\pm 12\frac{1}{2}\%$ takuuk aqutsinerini pilersaarut), allannguutissallu periuseq taanna malillugu pisarnissaat innersuussutiginarpoq.

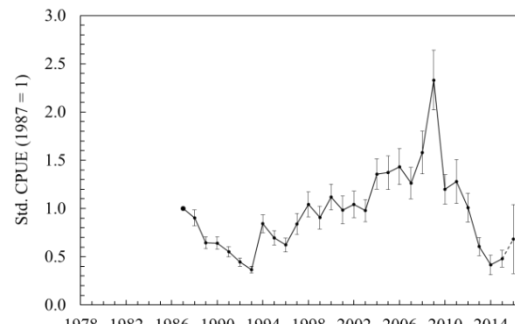
¹ 90.000 tonsinik pisassiissuteqarnermi taakkulu pisarineqarnerini peqassutsimit pitsaanerpaamik pissarsisuteqarsinnanermik killiliussap nalaaniinnissaa imaluunniit qaffasinnerulersinnaanerininik periarfissaq 35 %-iuvoq.

Tunup imartaani raajarniarneq pillugu SIUNNERSUINEQ (siunnersuinerup tuluttoortaa ilanngussaq 2-mi ataatungaaniittumi takuneqarsinnaavoq)

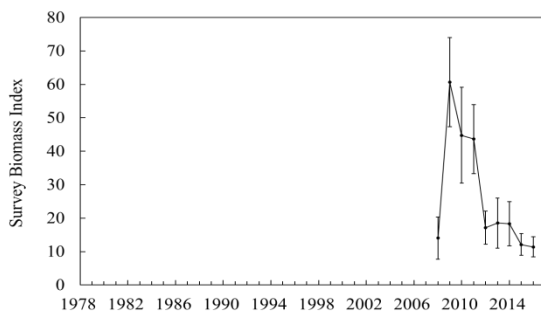
Tunup imartaani raajarniarneq pillugu innersuussutigineqarpoq 2017-imi pisassiisutigineqarsinnaasut allanngoratik 2.000 tonsiussasut. Pinngortitaleriffimmeersut misissuisarnerisigut raajarniarnermiillu paasisutissaatit ersersippaat, naak pisaasartut ukiuni kingullerni appariartortinneqaraluartut taamaattoq tamaani raajaqassuseq suli appassisumiittuarsinnarpoq.



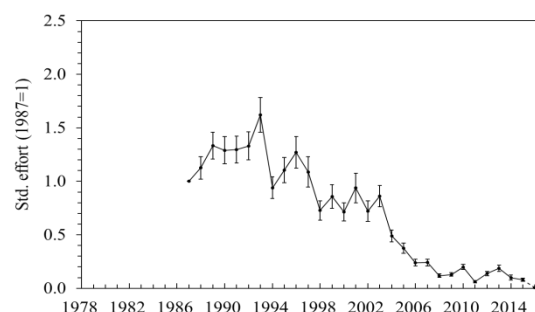
Takutitassiaq 1. Tunumi pisat tamakkiisut ('000 tons)



Takutitassiaq 2. Tunumi piffissami aalajangersimasumi pisat nikerarnerat



Takutitassiaq 3. Biologit misissuisarnerinit peqassutsip nikerarnera



Takutitassiaq 4. Raajat peqassutsimit ilanngaa-taasut tamakkerlugit

Siunnersuinermut tunngasut

Raajat pillugit siunnersuineq NAFO-meersut ICES-imeersullu ataatsimiinneranni kingullermi 07.-14. september-imi Bergenimi ingerlanneqartumi oqaasertalersorneqarpoq. Pinngortitaleriffik allakkianik uppernarsaataasunik arfineq pingasunik suliaqarpoq, taakkulu ataatsimut katillutik siunnersuinermit tunuliaquttatut atorneqarput. Atlantikup avannaani imartani allani rajaqaassutsit aamma ataatsimiinnermi pineqartumi nalilersuiffineqarput, ataatsimoortumillu nalunaarusiap imarai Flemish Cap-imi Grand Bank-imilu raajassutsinik naliliinerit siunnersuinerillu kiisalu Barentshav-imi Skagerrak-imilu raajaqassutsinik naliliinerit. Ataatsimiinnermi peqataapput ilisimatusartartut 17-it Canadameersut, EU-meersut, Norge-meersut Kalaallit Nunaanneersullu. Kalaallit Nunaanniit peqataapput ilisimatusartartuq AnnDorte Burmeister, ilisimatusartartuq Nanette Hammeken Arboe seniorforskerilu Michael Kingsley. Pisortatigoortumik siunnersuineq NAFO-p nittartagaani (www.NAFO.int)-imi takuneqarsinnaavoq. NAFO-p siunnersuineri pillugu tuluttut nalunaarusiaq 100-t sinnerlugit qupperneqarpoq, taassumalu assilineri Aalisarnermut Naalakkersuisoqarfiup pisussaavaa.

Pinngortitaleriffiup oqartussaasut, raajarniartartut tunisassiortullu siunnersuinerup tunuliaqutaanik itinerusumik oqaluserinissaannut piaartumik aggersarniarpai, tassani aamma apeqqtinik akisisoqartarlunilu ilisimasaniq tunioraaqatigiittoqarumaarpoq.

Inussiarnersumik inuulluaritsi Helle Siegstad, Immikkoortoqarfimmi pisortaq

Bilag 1: Northern Shrimp in Subarea 1 and Div. 0A

Northern Shrimp in Subarea 1 and Div. 0A: Advice September 2016 for 2017

Recommendation

Previous work has shown that a maintained mortality risk of 35% is low enough to keep stock levels safely at or above B_{msy} . A catch of 90 000 t in 2017 would entail an estimated mortality risk below 35%. Scientific Council therefore advises that catches in 2017 should not exceed 90 000 t.

Management Objectives

Scientific Council is aware of the Greenland management plan for shrimp and of general management objectives specified in the Greenland Fisheries Act; however the contents of these have not been conveyed to the Council. Canada requested Scientific Council to provide advice on this stock within the context of the NAFO Precautionary Approach Framework (SCS Doc. 13/04). Advice is based on risk analysis coming from a quantitative model, and on qualitative evaluation of biomass and stock-composition indices.

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

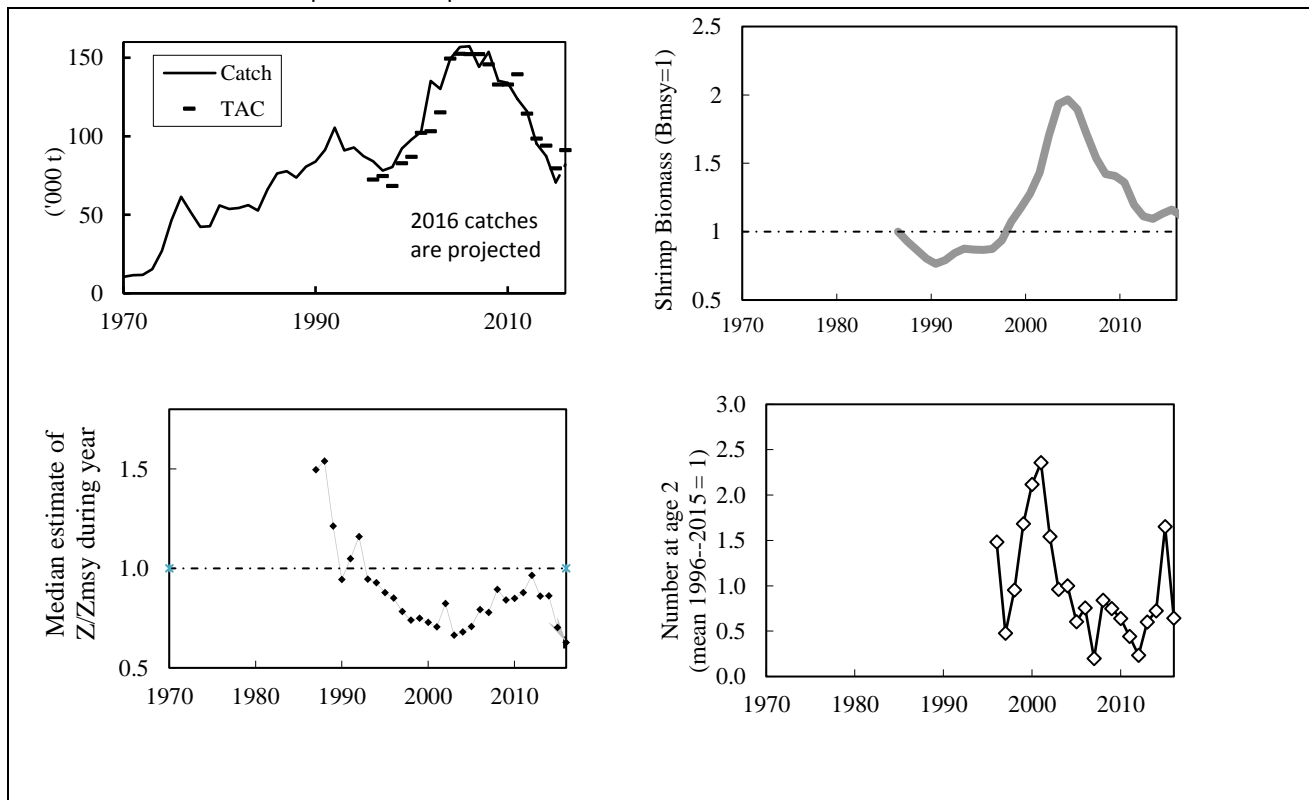
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Management unit

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 11% above B_{msy} and the risk of being below B_{lim} in 2016 is very low (<1%). Recruitment to the fishable biomass in 2017 is expected to be poor.



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 2017 – 2019 under eight catch options and subject to predation by a cod stock with an effective biomass of 35 Kt.

35 000 t cod Risk of:	Catch option ('000 tons)							
	60	70	75	80	85	90	95	100
falling below Bmsy end 2017 (%)	32.6	33.2	34.2	34.8	35.4	35.0	35.4	36.5
falling below Bmsy end 2018 (%)	30.1	30.9	32.1	33.6	34.7	35.9	36.3	36.5
falling below Bmsy end 2019 (%)	28.0	29.6	31.1	32.4	34.1	35.2	36.5	37.6
falling below Blim end 2017 (%)	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
falling below Blim end 2018 (%)	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.2
falling below Blim end 2019 (%)	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.4
exceeding Zmsy in 2017 (%)	15.9	20.1	23.0	25.8	28.7	32.0	35.2	38.9
exceeding Zmsy in 2018 (%)	16.3	20.1	22.9	26.1	28.9	31.9	36.1	39.7
exceeding Zmsy in 2019 (%)	16.4	20.1	23.0	26.0	29.6	32.9	36.2	39.4

Assessment

The analytical assessment was run with the same basic model as in 2011–2015; minor changes in the coding (A duplication of the uncertainty applied to the estimable predation was removed; which reduces the margin for uncertainty applied in calculating future TACs) are described in SCR Doc. 16/47; and with updated data series. The next assessment is scheduled for 2017.

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:

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Enacted TAC ¹	145 717	132 987	132 987	139 583	114 425	98 596	94 140	79 561	93 426
STATLANT 21	148 550	133 990	129 179	123 195	114 970	91 802	88 834	70 091	-
NIPAG	153 707	135 369	133 985	123 853	115 943	95 288	87 358	70 650	82 000 ²

¹ sum of TACs autonomously set by Canada and Greenland; ² provisional—projected to year end.

Effects of the fishery on the ecosystem

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

Special comments In 2016 the cod biomass density estimated by research trawl survey in West Greenland was about one-seventh of its value in 2015 and the index of its overlap with the shrimp stock also dropped to an 'effective cod biomass' of about 3 Kt, compared with values of 50–60 Kt in 2014–15. In choosing the value for the effective cod stock biomass, it was considered unlikely that the low level of 2016 would be maintained in the prediction period. Therefore, an effective cod biomass near the mean of the most recent three years, i.e. 35 Kt, was used as a basis for the forecasting of trajectories. In the recent past, TAC changes have been implemented in steps of limited size. Increases should follow a similar method. An increase in the TAC enacted for Greenland waters in 2015 was limited by a catch-smoothing rule.

Source of Information SCS Doc 13/04, FC Docs 04/18, SCR Docs 16/41, 42, 43, 44, 47

Bilag 2: Northern Shrimp in Denmark Strait and off East Greenland

Advice September 2016 for 2017

Recommendation

In 2016 the stock remains at a low level, comparable to previous years, and catches should not exceed 2 000 t.

Management objectives

Scientific Council is aware of general management objectives specified in the Greenland Fisheries Act; however, the contents of these have not been conveyed to the Council.

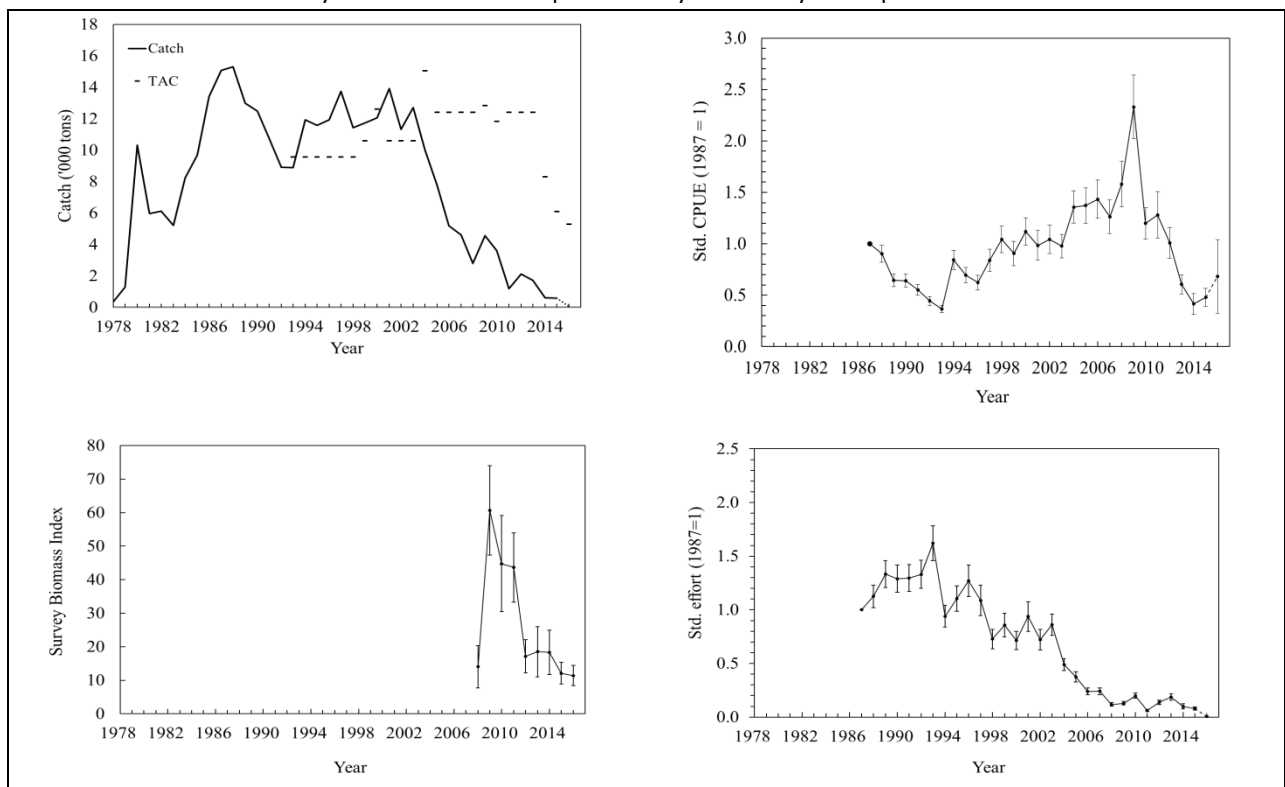
Advice is based on qualitative evaluation of biomass indices in relation to historic levels.

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 remains at a very low level in 2016 despite several years of very low exploitation rates.



Reference points

No reference points have been established for this stock

Projections

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

Assessment

No analytical assessment is available. Evaluation of stock status is based upon interpretation of commercial fishery and research survey data.

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 in recent years.

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
Enacted TAC	12835	11835	12400	12400	12400	8300	6100	5300
SC Recommended TAC	12400	12400	12400	12400	12400	2000	2000	2000
NIPAG	4555	3602	1199	2109	1717	622	576	49 ¹

¹ To July 2016

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, 16/046