



Biologit 2013-imut siunnersuinerat -
raajat

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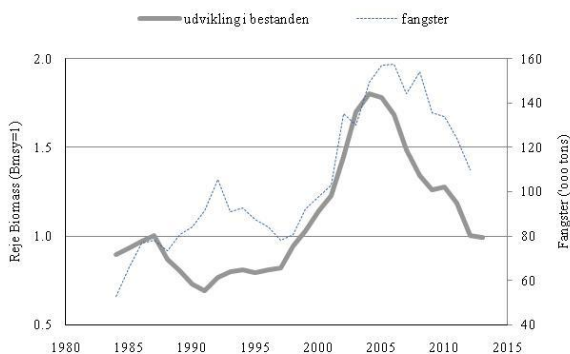
Kitaata Tunullu imartaanni 2013-imi raajartassiissutigineqarsinnaasut pillugit biologit siunnersuinerannik ilisimatitsissut

Kitaata imartaani raajat:

Kitaata imartaani raajat suli ikiliartuinnarput taamaattumillu 2013-imi 80.000 tonsit sinnerlugit raajarniartoqartariaqanngikkaluortoq siunnersuutigineqarpoq. 2012-imut 90.000 tonsinik raajarniartoqarsinnaasoq siunnersuutigineqarsimavoq (2011-imi 120.000 tonsinik).

Raajakillineranut peqqutaanerpaasut tassaapput:

- Raajaqassuseq tamakkerlugu tonsinngorlugu suli appariartorpoq
- Raajat siunissami aalisalerneqarsinnaalersussat takkussuuttut aatsaat taama ikitsiginerat
- Avataani raajat arnarluttarpassuaqarput taamaattumillu raajat suffisartortaannik raajarniarnerup raajakilligaluttuinnarneranik kinguneqarnissaa naatsorsuutigineqarpoq, tamatumalu kingunerisaanik aamma raajat aalisarneqarsinnaanngorumaartussat takkussuuttut ilorraap tungaanuunngitsoq sunnerneqassallutik
- Saarullit 2012-imi raajaqarfinniittut siornatut amerlatigaat, taamaattumillu saarullit raajaqassutsimik ilanngartuinerat suli qaffasilluni



Figur 1. Raajaqassutsip 1983-imiilli nikerarnera kiisalu tamakkiisumik pisarineqartartut nikerarnerat.



Figur 2. Raajat marlunnik ukiullit 1993-imiit 2012-ip tungaanut amerlassusiat.

Raajat ikiliartornissaat naatsorsuutigineqareersimavoq, tamannalu 2005-imiilli siunnersuineritigut erseqqissaatigineqartarsimavoq. 2003-imiit 2006-ip tungaanut raajarpassuaqarpoq tamatumali kingorna raajat ikiliartuinnavissimallutik.

Matuma ataani siunnersuinerup tunuliaqutaa pillugu naatsumik nassuiaasoqassaaq – quppernerit pingajuanni takussutissiat takukkit:

1. Raajartarineqartartut 1998-imi 80.000 tonsiniit 2004-2008-imi ukiumut 150.000 tonsinut amerliartorsimapput (figur 3 takuuk). Nunatta imartaani raajartassiissutit 2009-mi ikilisinneqarnerisa kingorna raajartarineqartartut ikiliartulersimapput. 2011-mi 110.000 tonsinik raajaniartoqarsimanissaa naatsorsuutigineqarpoq (taakkunannga 1.300 tonsit Canadap imartaani).

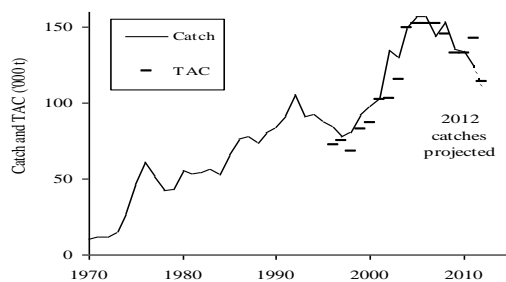
2003 – 2005-imi raajartarineqarsimasut (ukiumut 150.000 tonsit) tamakkerluni raajaqassutsip ilaannaminiinnanguaraat (peqassutsip tamakkerluni piffissap ingerlanerani oqimaassusinngorlugu ilanngartorneqarnera: pisat/raajaqassutsip oqimaassusinngorlugu). Raajakilliarternera kingorna (raajaqassuseq) pisarineqartartut siornatigumut sanilliullugit raajaqassutsimut tamakkiisumut sunniinerusalerput.

2. Biologit misissuinerisa takutippaat raajat oqimaassusinngorlugu amerlassusiat 2003-miit 2012-ip tungaanut ikiliartorsimasut, tassa 1990-ikkut naajartulernerini amerlatiginerattut amerlassuseqalerlutik (figur 4). Biologit misissuinerisa takutippaat avataani raajat ikileriarujussuarsimasut Qeqertarsuup Tunuanilu raajaqassuseq patajaatsumik inissisimavoq raajallu amerlasuujusut.
3. Aalisartut nalunaarsuiffii naapertorlugit 2009-miit 2012-ip tungaanut kalinnerni raajartarineqartartut 2005-imiit 2008-p tungaanut kalinnerni raajartarineqartartunit ikinnerupput. Tassa ukiuni arlaqalersuni kalinnerni pisaasartut amerlassusiat aammalu peqassutsip ineriartornera sanilliukkaanni taakku ataqatigiinnginnerat maluginiarneqarsinnaavoq: Tamanna peqquteqarpoq biologit misissuisarnermini 2003-miilli maluginiarmassuk raajat tonsinngorlugu tamakkiisumik amerlassusiat malunnaatilimmik appariartulersimasoq, uffa kalinnerni pisaasartut aatsaat 2008-miit (figur 4) annikitsuinnarmik ikiliartuuteqalersimasut.
4. Saarullit (saarullit raajartortarput): Oqaluttuarisaanermi saarullit raajaqassutsimut sunniuteqartorujussuuarimapput, saarulleqarluartillugu raajat ikilisarput. Biologit 2012-imi misissuinerisa takutippaat raajaqarfinni saarullit 2011-misut amerlatigisut. Raajat ikilerannut saarulleqarpallaanera peqqutaqaataassangatineqarpoq.
5. Raajaaqqanik aalisarneqarsinnaalerumaartussanik marlunnik ukiulinnik pilersorneqarneq 2002-miilli appariartuinnavissimavoq, takuneqarsinnaasutullu (figur 2) piffissami pilersorneqarnerup malinnaaffigineqarnerani 2012-imi takkussuuttut aatsaat taamak ikitsigipput. Raajaaqqanik marlunnik ukiulinnik takkussuuttoqarnera, taakku ukiut marlunniit sisamat qaangiunnerini aalisarneqarsinnaalersussaapput, 2005-imiilli appassisumik inissisimavoq, taamaattumillu piffissami aggersumi raajaqassutsip qaffariaateqarnissaa naatsorsuutigineqarsinnaanngilaq. Tamatuma saniatigut raajat aappaagumiit aalisarneqarsinnaalersussatut angissuseqartut (15-22 mm CPL) ikileriaateqarput, taamaattumillu 2013-imi aalisarneqarsinnaalersunik pilersuinerup appariaateqarnissaa naatsorsuutigineqarpoq.

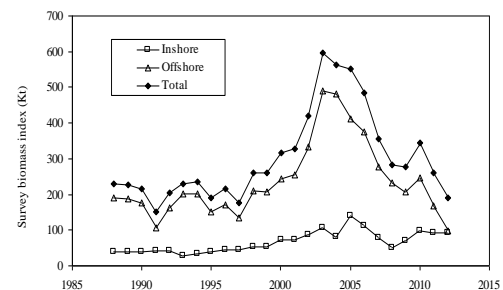
6. Ukiuni arlalinni sumiiffinni annikinneruleraluttuinnartuni raajarniartoqar-talersimavoq ullumikkullu Store Hellefiskebankip avannaani aamma Qeqertarsuup Tunuani raajarniartoqarpoq, taakkunanilu raajarniarneq 1980-ikkunni raajar-niarnerup siammarsimaneratulli ippoq.
7. Kisitsisit atorlugit naatsorsueriaatsit naapertorlugit siunnersuinermi ilanngunneqartarput pisaasartut (raajaqassutsip tamarmiusup ilanngarneqarnera), piffissap aalangersimasup iluani pisat amerlassusiat (ass. kalinnermi ataatsimi pisat annertussusiat), biologit misissuinerat (raajaqassutsip tamarmiusup tonsinngorlugu naatsorsorneqarnera) kiisalu saarulleqassutsimik missingiussinerit ilanngunneqartarput (saarullit raajartortarmata – figur 3).

Naatsorsuusiaatsip tunngavigineqartup takutippaa 2013-imi 80.000 tonsinik raajanik pisaqartoqassappat taava piujuartitsinissaq qulakkeerniarlugu raajaqassutsip annerpaamik ilanngarneqarsinnaanera (pisaasartut saarulliillu nerisarisartagaat tamakkerlugit (Z_{msy}))34 %-imiittoq qaangerneqarsinnaasoq. Taamatut mianerininnissamik ilisimatitsineq siorna siunnersuinermissaaq ilanngunneqarpoq. Taamaattumik ilisimatuussutsikkut siunnersuisoqatigiit siunnersuutigaat raajartarineqartussat 80.000 tonsit sinneqqassanngikkaat.

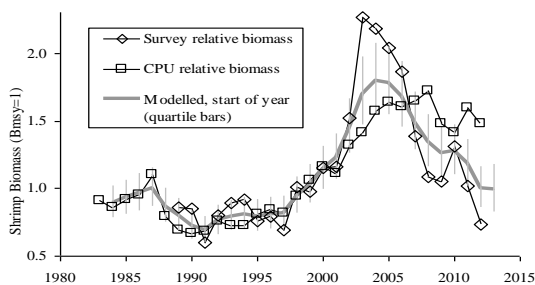
8. Naalackersuisunit akuerineqarsimasumi Kitaata imartaani raajarniarnermi aqutsinissamik pilersaarummi imatut allassimasoqarpoq ”aatsaat immikkorluinnaqqissaaq ittumik pisoqartillugu raajartassiissutit (TAC) 10 %-it sinnerlugit sinneqarsinnaapput”. 2012-imi raajartarineqartussat 110.000 tonsiunissaat naatsorsuutigineqarpoq. Siunnersuineq malinneqassappat taava raajat pisarineqartussat 30.000 tonsinik ikinnerunissaat imaluunniit pisaasartut 27 %-inik ikileriaateqarnissaat naatsorsuutigineqarpoq.



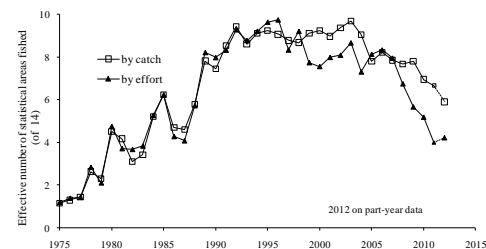
Figur 3. Raajartarineqartut tamarmiusut (2011: Kalaallit Nunaata imartaani 124.000 tons, Canadap imartaani 1.300 tons).



Figur 5. Sinerissap qanittuani aamma avataani biologit misissuinerannit raajaqassuseq tamakkerlugu tonsinngorlugu.



Figur 4. Raajaqassutsip 1975-imiit 2012-ip tungaanut nikerarnera (naatsorsuinerit tunngavigalugit).



Figur 6. Raajat siammarsimanerat (pisarnik nalunaarsuinerneq). 1975-miit 2012-imut.

Tunup imartaani raajat:

Tunup imartaani raajartassat pillugit 2013-imut siunnersuinerit allannguuteqaratik 12.400 tonsiniipput. Raajarniartartunit aamma biologit misissuinerannit paasissutissat ilimanarsisippaat 2009-miilli tappavani raajat ikiliartulaalersimasut. Raajat ikiliartuinnassappata raajartarineqartartut ikilisinneqartariaqassagaluarput. Raajartassiissutit 2004-miilli 12.400 tonsiusarput. Raajartarineqartartut 2003-miit 13.000 tonsiniit ikiliartortuarlutik 3.000 tonsit inulersimavaat. 2011-mi 2.000 tonsit inorlugit raajartarineqarnissaat naatsorsuutigineqarpoq.

Ilanngussat 1 aamma 2 Kitaata aamma Tunup imartaanni NAFO-mit siunnersuinerit tuluttuujusut eqikkarnerivaat.

Pinngortitaleriffimmit katillugit arfineq´marlunnik allakkiortoqarsimavoq, taakkulu tamarmiullutik Kitaata aamma Tunup imartaanni raajartassiissutigineqarsinnaasutut siunnersuinerit tunngaviupput. NAFO-mi/ICES-imilu 2012-imi oktobarip ulluisa 17-ianiit oktobarip ulluisa 24-ata tungaanut ataatsimiinnermi kingullermi raajartassiinissanut siunnersuutit oqaasertalersorneqarput. Ataatsimiinnermi ilisimatusartartut katillugit 15-it Canadamiit, EU-mit, Norgemil Ruslandimiillu peqataapput, nunatsinniit (Pinngortitaleriffik) ilisimatusartartuq Michael Kingsley, Nanette Hammeken Arboe aamma immikkoortortami pisortaq, Helle Siegstad, peqataapput. Pisortatigoortumik siunnersuinerit NAFO-p nittartagaani (www.NAFO.int) takuneqarsinnaapput. NAFO-mit siunnersuinerit pillugit nalunaarusiaq tuluttoq quppernerit A4-t 100-t sinneqarpoq taassumallu assilineqarnera Naalackersuisoqarfimmut Aalisarnermut Aqutsisoqarfimmullu tunniunneqassapput.

Inussiarnersumik inuulluaqqusillunga

Helle Siegstad, Immikkoortortami

pisortaq

Bilag 1. Northern shrimp in Subareas 0 and 1

Recommendation: Recent catches are not estimated to be sustainable. Scientific Council therefore recommends that catches in 2013 should be substantially lower.

The risk of exceeding Z_{msy} in 2013 at a catch level of 80 000 t with an effective cod stock at the 2012 level (22 700 t) is estimated to be around 34%. Model results estimate catches at that level in the medium term to be associated with an increasing stock above B_{msy} .

Given the level of risk which was accepted in 2012, Scientific Council recommends that catches in 2013 should not exceed 80 000 t.

Background: The shrimp stock off West Greenland is distributed in Subarea 1 and Div. 0A east of 60°30'W. A small-scale inshore fishery began in SA 1 in the 1930s. Since 1969 an offshore fishery has developed.

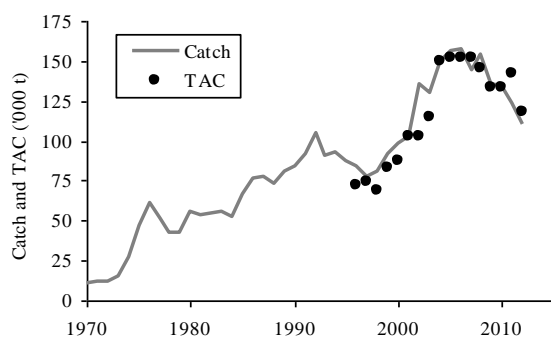
Fishery and Catches: The fishery is prosecuted mostly by Greenland in SA 1 and Canada in Div. 0A. Canada did not fish in 2008 and fished little in 2009, but has since resumed fishing. Recent catches are:

Year	Catch ('000 t)		TAC ('000 t)	
	NIPAG	STATLANT 21	Advised	Actual ²
2009	135.5	134.0	110	133.0
2010	134.0	129.2 ¹	110	133.0
2011	124.0	122.1 ¹	120	142.4
2012	110.0 ³		90	117.9

¹ Provisional.

² Total of TACs set independently by Greenland and Canada.

³ Predicted to year end by industry observers.



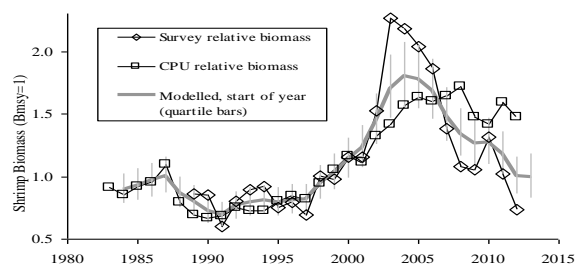
Data: Catch, effort, and position data were available from all vessels. Indices of how widely the stock and the fishery were distributed were calculated from catch positions in the fishery and the survey.

Series of biomass and recruitment indices and size- and sex-composition data were available from research surveys. Series of cod biomass and cod consumption were also available.

Assessment: An analytical assessment framework was used to describe stock dynamics in terms of biomass (B) and mortality (Z) relative to biological reference points.

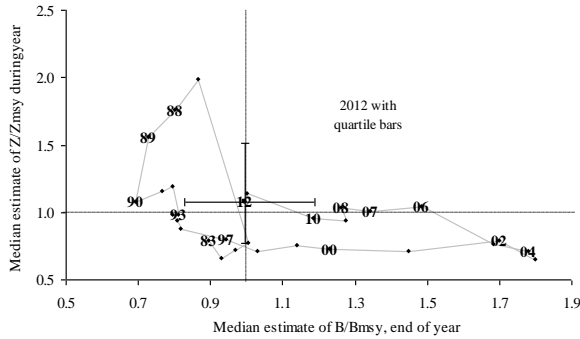
The model used was a stochastic version of a surplus production model including an explicit term for predation by Atlantic cod, stated in a state-space framework and fitted by Bayesian methods. MSY (Maximum Sustainable Yield) defines maximum production, and B_{msy} is the biomass level giving MSY .

A precautionary limit reference point for stock biomass (B_{lim}) is 30% of B_{msy} and the limit reference point for mortality (Z_{lim}) is Z_{msy} . Recent CPUE values have stayed high, while the area fished has contracted and survey biomass indices have decreased, and CPUE is not now considered a reliable index of biomass. The weight given to it in the model was therefore reduced in 2011. The median estimate of MSY in 2012 was 132 000 t/yr.

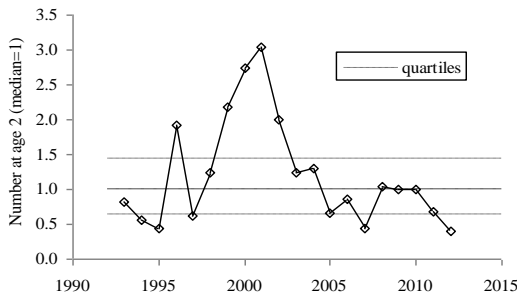


Biomass. A stock-dynamic model showed a maximum biomass in 2003 with a continuing decline since; the probability that biomass will be below B_{msy} in 2012 with projected catches at 110 000 t was estimated at 51%; of its being below B_{lim} at 1–2%.

Mortality. The mortality caused by fishing and cod predation (Z) is estimated to have stayed below the upper limit reference (Z_{msy}) from 1996 to 2005, but is estimated to have averaged 2.6% over the limit value in 2006 - 2012. With catches projected at 110 000 t the risk that total mortality in 2012 would exceed Z_{msy} was estimated at about 56%. Atlantic cod is, in 2012, more concentrated in southerly areas where shrimps are now scarce, and predation is expected to be moderate or low.



Recruitment. The stock structure in 2012 is deficient in fishable males, presaging poor short-term recruitment to the spawning stock. Pre-recruits (CL 14–16.5 mm), expected to enter the fishery in 2013, have been few since 2008 in absolute terms. Numbers at age 2 in 2012 have declined to their lowest-ever level, so medium-term recruitment is also expected to be poor.



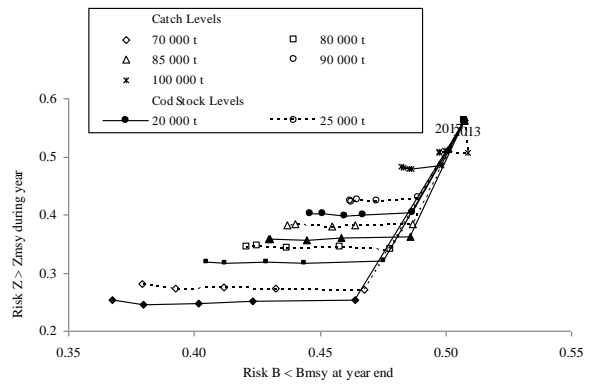
State of the Stock. Modelled biomass is estimated to have been declining since 2004. At the end of 2012 biomass is projected to be close to B_{msy} . Total mortality is projected to exceed Z_{msy} . Recruitment to the fishable and spawning stock in the short- and medium-term is expected to remain low.

Short-term predictions: Estimated risks for 2013 with an “effective” (the amount of cod biomass overlapping the shrimp biomass) 25 000 t cod stock are:

25 000 t cod	Catch option ('000 t)						
	70	75	80	85	90	95	100
Risk of transgressing (%):							
Bmsy, end 2013	47	48	48	49	49	50	51
Blim, end 2013	1	1	1	1	1	1	2
Zmsy, in 2013	27	31	34	38	43	47	51
Zmsy, in2014	27	31	34	38	42	47	51

Medium-term Predictions: Projected probabilities of transgressing precautionary reference levels after 3 years in the fishery for Northern Shrimp on the West Greenland shelf with ‘effective’ cod stocks assumed at 20 000 t (20Kt) and 25 000 t (25Kt) were estimated at:

Catch (Kt/yr)	Prob. biomass < B_{MSY} (%)		Prob. biomass < B_{lim} (%)		Prob. mort > Z_{msy} (%)	
	20 Kt	25 Kt	20 Kt	25 Kt	20 Kt	25 Kt
	70	40	41	2	3	25
75	41	43	2	3	28	31
80	43	44	2	3	32	34
85	44	45	3	3	36	38
90	46	47	3	3	40	43
95	47	49	3	3	44	46
100	48	50	3	3	48	51



Special Comments: Scientific Council notes that the fishable biomass offshore comprises a high proportion of females, so fishing on this stock in this state will disproportionately reduce the spawning stock biomass. Recruitment in absolute terms is expected to be low in both the short and medium term.

Scientific Council was not in a position to predict the cod stock so assumed that the cod stock in 2013 would be at the same level as 2012 in its analysis. Should the cod stock increase beyond this assumption, catches may have to be decreased further.

Sources of Information: SCR Docs 04/75, 04/76, 08/62, 12/44, 12/45, 12/46, 12/48, 11/57, SCS Doc. 04/12.

Bilag 2. b) Northern shrimp in Denmark Strait and off East Greenland

Recommendation: Scientific Council finds no basis to change its previous advice at this time and recommends that catches should remain below 12 400 tons in 2012.

Scientific Council notes that stock indicators have declined after 2009. If this trend continues, future catch levels may need to be reduced.

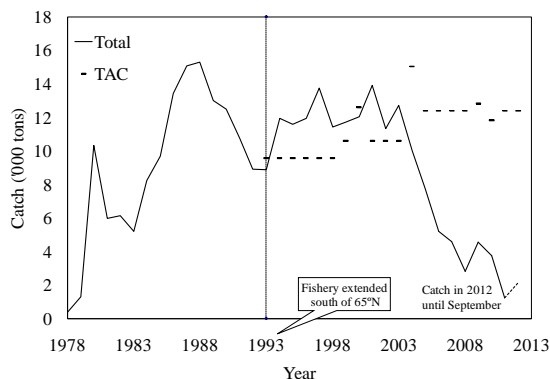
Background: The fishery began in 1978 in areas north of 65°N in Denmark Strait, where it occurs on both sides of the midline between Greenland and Iceland. Areas south of 65°N in Greenlandic waters have been exploited since 1993. Until 2005 catches in the area south of 65°N accounted for 50 - 60% of the total catch but since 2006 catches in the southern area has decreased and since 2008 accounted for about 10% of the total catch.

Fishery and Catches: Greenland, EU (Denmark) and EU (Estonia) participated in the fishery in 2012. Catches in the Icelandic EEZ decreased from 2002-2005 and since 2006 no catches have been taken. Recent catches and recommended TACs are as follows:

Year	Catch ('000 t)		TAC ('000 t)	
	NIPAG	Recommended	Greenland EEZ	Iceland EEZ ¹
2008	2.8	12.4	12.4	
2009	4.6	12.4	12.8	
2010	3.7	12.4	11.8	
2011	1.2	12.4	12.4	
2012	2.1 ²	12.4	12.4	

¹ Fishery unregulated in Icelandic EEZ;

² Catch till September 2012.

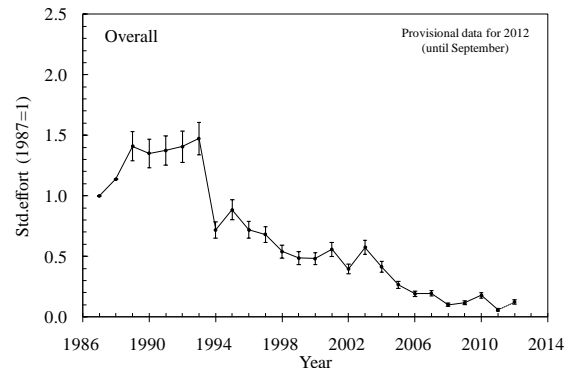


Data: Catch and effort data were available from trawlers of several nations. Annual surveys have been conducted since 2008.

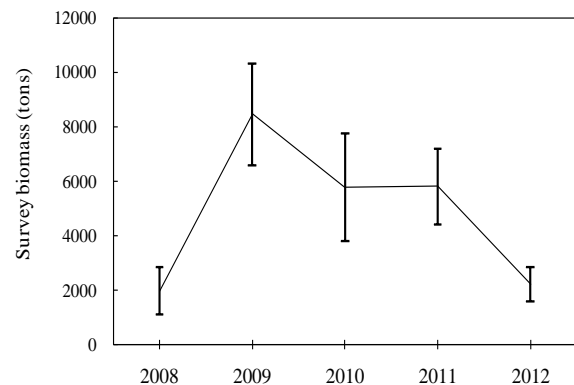
Assessment: No analytical assessment is available. Evaluation of the status of the stock is based on analysis of commercial fishery data and survey data.

Recruitment: No recruitment estimates were available.

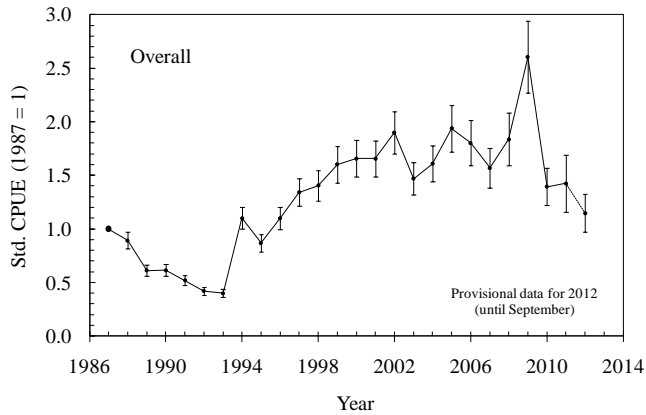
Exploitation rate: Since the mid 1990s exploitation rate index (standardized effort) has decreased, reaching the lowest levels seen in the time series from 2008 - 2012.



Biomass: The survey biomass index has decreased since 2009 and is now at the level seen at the beginning of the short time series in 2008.



CPUE: The combined standardized catch rate index for the total area remained at a high level from 2000 to 2009. Since then the combined index has been declining and is now lower than seen during the 2000s,



State of the Stock: Indices of stock biomass indicate a decline during the last 3 years. The biomass is now believed to be slightly lower than the relatively high level seen during most of the 2000s.

Special Comments: Effort has decreased in recent years. This decrease may be related to the economics of the fishery.

Sources of Information: SCR Doc. 12/62, 12/63.

Coastal States

Scientific Council is informed that a Working Group has been established in Greenland to consider a revision of the harvest control rule and to propose one or more candidate rules of which a preferred one would presumably be included in a revised Management Plan. Until more information is available on how the Working Group will proceed and what it will recommend as a harvest control rule, SC is unable to make much progress with complying with this request from Greenland.