



Ilisimatitsissut Raajat

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Brevnr.:

Kitaani Tunumilu 2011-mi raajartassissutigineqartussat pillugit biologit siunnersuinerannut tunngasoq.

Matumuuna 2011-mi raajarniarnissamut biologit siunnersuutaat ilisimatitsissutitut nassiunneqarput. Kitaata Tunullu imartaanni raajartassanik siunnersuineq 2010-mi oktobarip ulluisa 21-aniit 27-ata tungaanut NAFO-mi/ICES-imi ataatsimiinnermi kingullermi oqaasertalersorneqarpoq.

Raajat Kitaata imartaani:

2004-miit 2008-ip tungaanut Kitaata imartaa raajalerujussuuvoq. 2009-mi raajat 2003-misut amerlatigilerput. 2010-mit paasissutissat takutippaat raajat ikileriarsimangitsut taamaattumillu 2011-mi raajartarineqartussat 120.000 tonsit sinnissanngikkaat NAFO-mit siunnersuutigineqarpoq. 2010-mi raajartassiissutissatut siunnersuinermi 110.000 tonsiunissaat siunnersuutigineqarsimavoq.

Ukiuni 2004-miit 2008-p tungaanut raajartarineqartartut ukiumut (Figur 1) 150.000 tonsiusarput. Kalaallit Nunaannut raajartassiissutigineqartut ikilisinneqarnerisa kingunerisaanik 2009-mi raajat pisarineqarsimasut 135.000 tonsinut ikileriarput. 2010-p naanerani raajartarineqartussat 138.000 tonsiunissaat naatsorsuutigineqarpoq.

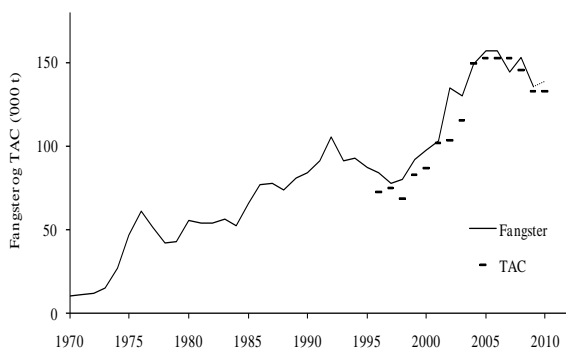
Raajaqassutsimik nalilersuineq matematiskiusumik periuseq **saarullit raajanik nerisartagaasa amerlassusiannik** tunngaveqarpoq. Aalisartut pisaminnik nalunaarsortagaasa takutippaat raajartarineqartartut 2008-miit 2010-p tungaanut ikileriarsimasut, akerlianik biologit misissuinerisa takutippaat raajat 2009-miit 2010-p

tungaanut (figur 4) amerliariarujussuarsimasut tamannalu ilutigalugu 2008-miit 2010-p tungaanut saarullit (Kitaata avataani) ikileriarujussuarsimapput, tamatumalu 2010-mi raajat 2009-misut amerlatiginnarnerannut pissutaaqataasorineqarpoq.

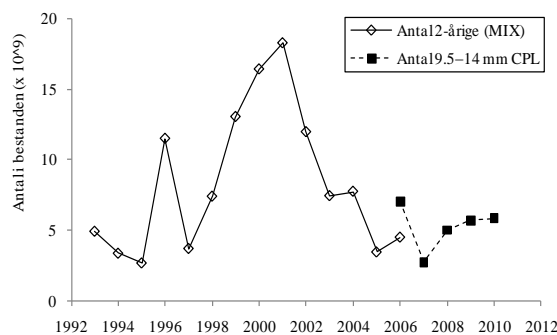
2011-mi 120.000 tonsinik raajartassiisoqarnissaa siunnersuutigineqarpoq taamaalillutillu raajartassatut siunnersuutigineqartut siornarnit 10.000 tonsinik amerlanerupput. Ukioq manna biologit nalilersuinerat siornamut sanilliullugu allaanerugaanngilaq kisiannili pissutsit pingaarutillit pingasut allatut siunnersuineranut aalajangiisuupput:

1. Misissueqqissaarinerit nutaat takutippaat raajat mikisut takkussuuttartut 2008-miit 2010-p tungaanut amerlassusiat allanggorpiarneq ajortut (figur 2). 2009-mi paasisutissat erumatitsipput, tassami paasisutissat malillugit raajat mikisut takkussuuttartut ikileriarujussuurtussaasut ilimagineqarmata.
2. Aalisartulli nalunaarsugaannik pitsaannerusumik misissuinerit takutippaat raajarniartartut sumiiffinni annikitsuinnarni raajarniarneq ajortut. Sumiiffinni annikitsuni raajarniarnerit 2009-mi erumatitsipput (figur 3), tassami sumiiffit annertunerusunik misissueqqissaarifigineqarsimapput.
3. Saarullit (Kitaata imartaani) 2007-imiit ikileriarujussuarsimapput, tamannalu 2010-mi raajaqassutsip 2009-misut inneranut pissutaaqataassagatinneqarpoq.

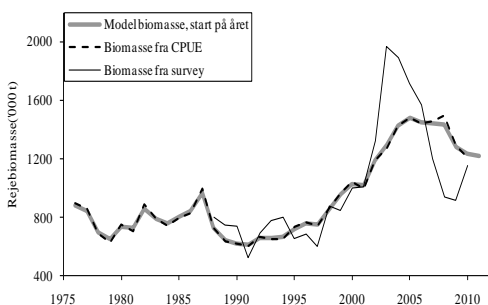
Ilanngussami 1-mi NAFO-mit siunnersuinerit tuluttut eqikkarneqarput. Pinngortitaleriffimmit katillugit arfineq marlunnik allakkiaqarluni saqqummersitsisoqarsimavoq, tamakkulu ataatsimut katillugit Kitaata imartaani siunnersuineranut tunngaviupput.



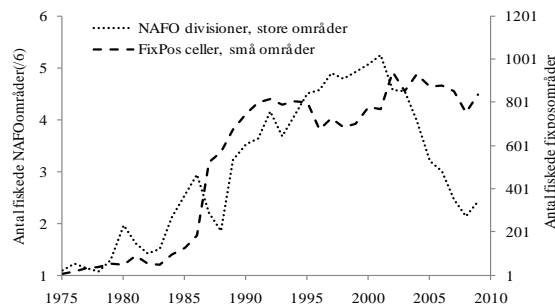
Figur 1. Pisarineqartut tamakkiisut (2009: Kalaallit Nunaat 134.890 tons, Canada 420 tons) pisassiissutillu (2009: Kalaallit Nunaat 127.300 tons, Canada 18.417 tons).



Figur 2. Raajat mikisut takkussuuttut amerlassusiat (raajat siunissami aalisarinnansi pisarineqartartussat).



Figur 3. 1975-imiit 2010-p tungaanut raajat amerlassusiisa nikerarnerat.



Figur 4. Raajat siammarsimassusiannik misissueqqissaarinerit (pisanik nalunaarsukkanit). Misissuinerit nutaat takutippaat 2009-mi

erumassutigineqaraluartumut sanilliullugu sumiiffinni
ikittuinnarni aalisartoqarsimannitsoq.

Tunup imartaani raajat:

Tunup imartaani 2011-mi raajartassatut siunnersuutigineqartigineqartut allanngoratik 12.400 tonsiussapput. 2004-miit rajartassissutigineqartarsimasut 12.400 tonsiniittarsimapput. 2003-mi raajat 13.000 tonsingajaat pisarineqartarsinnarlutik 2008-mi 3.000 tonsit inortalersimavaat. 2009-mi raajartarineqarsimasut 4.500 tonsinut amerleqqipput 2010-mi aamma taamatut pisaqartoqarnissaa naatsorsuutigineqarpoq.

Aalisarnernit (pisanik nalunaarsuinernit nammineq pisat) paasissutissat aamma ukiuni 2008-2010-mi biologit misissuineranit paasissutissat tunngavigalugit siunnersuisoqarpoq. Nammineq pisat ilimanarsisippaat raajat amerlassusiat aalajaatsuusut kisiannili raajat amerlassusiisa nikerarnerat nammineq pisatut amerlatiginersut nalornissutigineqarpoq. Pisakinnerusalernerit aningaasanik imaluunniit raajat ikiliartornerannik pissuteqarnersoq nalornissutigineqarpoq. Biologit ukiuni pingasuni misissuinerat allanngorartorujussuuvoq taamaattumillu ersarissumik takussutissartaqanngillat.

Ilanngussami 2-mi NAFO-mit siunnersuinerit tuluttut eqikkarneqarput. Pinngortitaleriffimmit katillugit marlunnik allakkiaqarluni saqqummersitsisoqarsimavoq, tamakkulu ataatsimut katillugit Tunup imartaani siunnersuineranut tunngaviupput.

Pisortatigoortumik siunnersuinerit NAFO-p nittartagaani takuneqarsinnaapput (www.NAFO.int). NAFO-mit siunnersuisunit tuluttut nalunaarusiarineqartut pappilissat A4-t 100-t sinneqarput tamakkulu assilineqarnerat Aalisarnermut Naalakkersuisoqarfimmit aamma Aqutsisoqarfimmit pissarsiarineqarsimapput.

Inussiarnersumik inuulluaqqusillunga

Helle Siegstad

Immikkoortortaqarfimmi pisortaq

Bilag 1. Northern shrimp in Subareas 0 and

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.

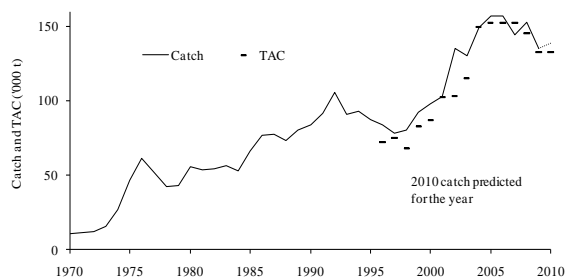
Fishery and Catches: The fishery is prosecuted mostly by Greenland in SA 1 and Canada in Div. 0A. Canada did not fish in 2008 and fished little in 2009, but has resumed fishing in 2010. Recent catches are:

Year	Catch ('000 t)		TAC ('000 t)	
	NIPAG	21A ¹	Advised	Actual ²
2007	144.2	144.1	130	152.4
2008	152.7	148.6	110	145.7
2009	135.3	134.0	110	133.0
2010	138.5 ³	-	110	133.0

¹ Provisional.

² Total of TACs set by Greenland and Canada.

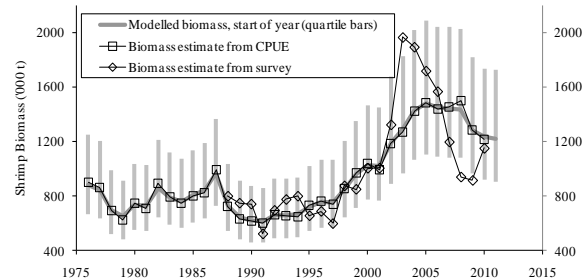
³ Predicted to year-end by industry observers.



Data: Catch, effort, and position data were available from all vessels. Series of biomass and recruitment indices and size-composition and sex-composition data were available from research surveys. Series of cod biomass and cod consumption were also available.

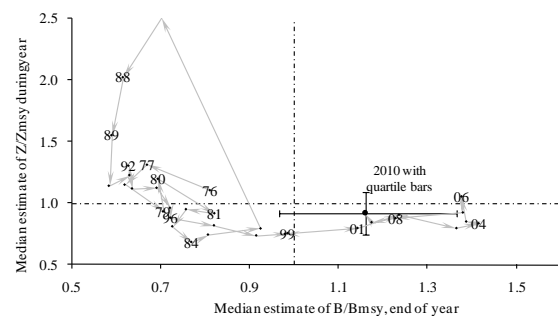
Assessment: An analytical assessment framework was used to describe stock dynamics in terms of biomass (B) and mortality (Z) relative to biological reference points. The model used was a stochastic version of a surplus-production model including an explicit term for predation by Atlantic cod, stated 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} . The model fitted the data well. Median estimate of MSY was 147 000 t/yr.

Indices of how widely the stock and the fishery were distributed were calculated from catch positions in the fishery and the survey.



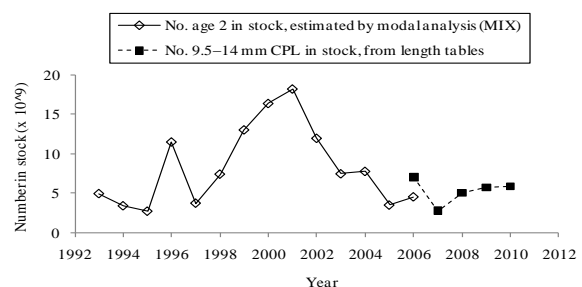
Biomass. A stock-dynamic model showed a biomass peaking in 2005 and declining since. The probability of biomass below B_{msy} at end 2010 with projected catches at 138 500 t was estimated at 28% and of its being below B_{lim} at less than 1%.

Mortality. The mortality caused by fishing and cod predation (Z) has been stable below the upper limit reference (Z_{msy}) since 1995. With catches in 2010 projected at 138 500 t the risk of total mortality in 2010 exceeding Z_{msy} was estimated at about 37.5%.



Recruitment. A recruitment index based on survey numbers of small shrimps fell to low levels in 2005–2006. A second index remained near its 2006 level until 2010.

State of the Stock. Modelled biomass is estimated to have been declining since 2005. However, at the end of 2010 biomass is projected to be still above B_{msy} and total mortality below Z_{msy} . Recent estimates of recruitment indices have been low.



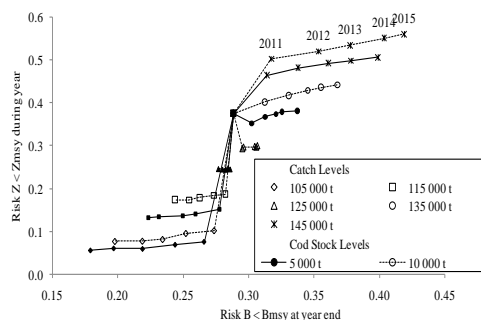
Short-term predictions: Estimated risks for 2011 with a 5 000 t cod stock are:

5 000 t cod	Catch option ('000 t)				
Risk (%), in 2011, of:	105	115	125	135	145
falling below B_{msy}	27	28	28	30	31
falling below B_{lim}	<1	<1	<1	<1	<1
exceeding Z_{msy}	8	15	25	35	46

Medium-term Predictions: Medium-term predictions over five years are based on the assessment model, which does not take into account either below-average recent year classes or changes in the area being fished. Percentage risks of transgressing precautionary limits after five years at cod stock biomass levels of 5 000 and 10 000 t were estimated at:

Catch (Kt/yr)	B_{MSY}		B_{lim}		Z_{msy}	
	5 Kt	10 Kt	5 Kt	10 Kt	5 Kt	10 Kt
105	18	20	<1	<1	6	8
115	22	24	<1	<1	13	17
125	28	30	<1	<1	25	30
135	34	37	<1	<1	38	44
145	40	42	1	1	51	56

and the joint evolution of precautionary-approach risks over five years 2011–2015, with an ‘effective’ cod stock at 5 000 or 10 000 t, was predicted to be:



Recommendations: The concerns of Scientific Council related to recruitment prospects and to contraction of the area of distribution of the resource are less grave than in 2009. None the less, Scientific Council considers that catches should be set at a level bearing a low risk of exceeding Z_{msy} . Scientific Council therefore advises that catches in 2011 should not exceed 120 000 t.

Special Comments: The Scientific Council advice is for catch weight, correctly reported, without overpacking or allowances.

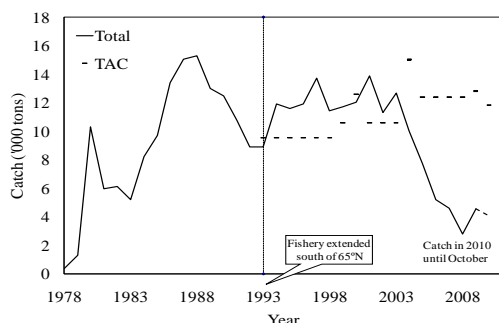
Sources of Information: SCR Doc. 02/158, 03/74, 04/75, 76, 10/51, 53, 54, 56, 57; SCS Doc. 04/12.

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

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 accounted for 25% or less of the total catch.

Fishery and Catches: Four nations participated in the fishery in 2010. Catches in the Iceland EEZ decreased from 2002-2005 and since 2006 no catches has been taken. Recent catches and recommended TACs are as follows:

Year	Catch ('000 t)		TAC ('000 t)	
	NIP AG	Recommended	Greenland EEZ	Iceland EEZ ¹
2006	5.2	12.4	12.4	
2007	4.6	12.4	12.4	
2008	2.8	12.4	12.4	
2009	4.6	12.4	12.8	
2010	4.1 ²	12.4	11.8	



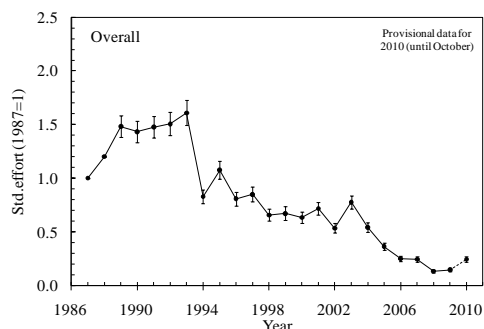
¹ Fishery unregulated in Icelandic EEZ;

² Catch till October 2010.

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

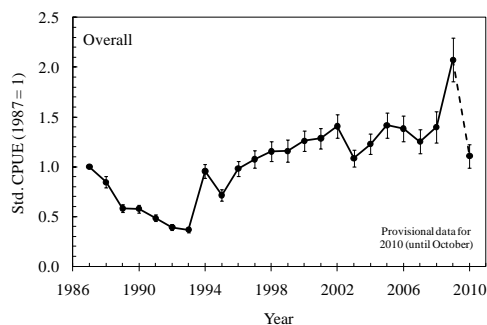
Assessment: No analytical assessment is available. Evaluation of the status of the stock is based on interpretation of commercial fishery data and survey data.

Recruitment: No recruitment estimates were available.



Exploitation rate: Since the mid 1990s, the exploitation index (standardized effort) has decreased, reaching the lowest levels seen in the time series from 2008 to 2010. **Biomass:** The biomass index from 2008-2010 varied greatly with no clear trend.

CPUE: Combined standardized catch-rate index for the total area decreased steadily from 1987 to 1993, showed an increase to a relatively high level at the beginning of the 2000s, and has fluctuated around this level until 2008. In 2009 the standardized catch rate rose to the highest level ever seen, but probably does not reflect a corresponding increase in biomass. In 2010 the standardized catch rate is back to the level seen from the beginning of the 2000s.



State of the Stock: The stock biomass is believed to be at a relatively high level, and to have been there since the beginning of the 2000s.

Recommendation: Scientific Council finds no basis to change its previous advice and recommended that catches should remain below 12 400 t in 2011.

Special Comments: The predominant fleet, accounting for 40% of total catch, has decreased their effort in recent years, which gives some uncertainty on whether recent index values are a true reflection of the stock biomass. This decrease may be related to the economics of the fishery.

Sources of Information: SCR Doc. 03/74, 10/59, 10/69.