

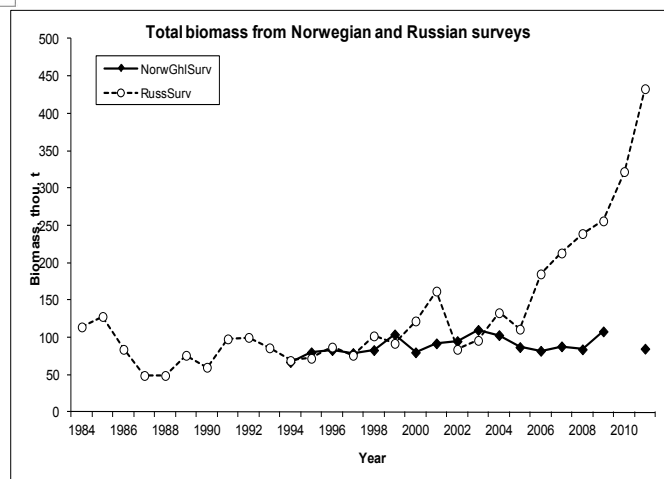
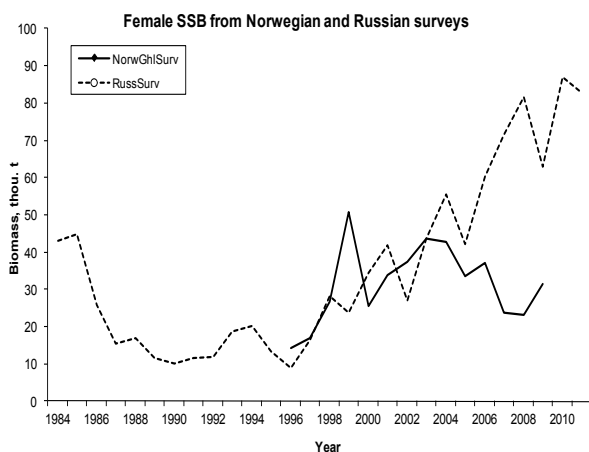
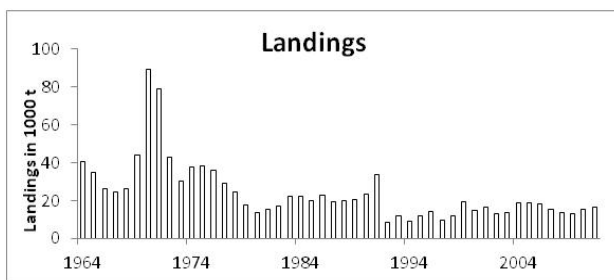
**ECOREGION**      **Barents Sea and Norwegian Sea**  
**STOCK**            **Greenland halibut in Subareas I and II**

**Advice for 2013**

ICES advises on the basis of precautionary considerations that catches should not be allowed to increase and should not exceed 15 000 t.

**Stock status**

F (Fishing Mortality)	
	<b>2008–2011</b>
MSY ( $F_{MSY}$ )	Unknown
Precautionary approach ( $F_{pa}, F_{lim}$ )	Unknown
SSB (Spawning-Stock Biomass)	
	<b>2009–2012</b>
MSY ( $B_{trigger}$ )	Unknown
Precautionary approach ( $B_{pa}, B_{lim}$ )	Unknown
Qualitative evaluation	Increasing trend



**Figure 3.4.7.1**

Greenland halibut in Subareas I and II. Top left: Landings. Below left: Biomass (swept area) estimate of the mature female biomass (Norwegian Greenland halibut survey along the continental slope in August and Russian autumn trawl survey). Below right: Total biomass estimates from the Norwegian Greenland halibut survey along the continental slope in August and Russian autumn trawl survey. No Norwegian survey in 2010.

Only landings and survey trends of biomass are available for this stock. Biomass estimates indicate a stable or increasing trend since 1992. There is no information on the exploitation rate of the stock.

**Management plans**

There are no explicit management objectives for this stock.

## Biology

Greenland halibut is a long-lived species showing considerable sexual dimorphism in growth and maturation. Age-reading methodology for this stock has been reviewed in recent years and there is evidence to show that growth is slower than previously thought.

Tagging studies suggest that some mixing occurs with Greenland halibut in the Iceland/East Greenland area.

## The fisheries

From 2010 the ban against targeted fishery was lifted by the Joint Russian–Norwegian Fisheries Commission (JRNFC) and since then Greenland halibut has been fished in a directed fishery, and also as bycatch in the fishery for other demersal species.

<b>Catch by fleet</b>	Total catch (2011) = 16.3 kt, where 100% landings (58% trawl, 31% longline, 10% gillnet, and 1% others). Not relevant for discards.
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## Quality considerations

None of the current surveys cover the complete stock distribution, but most of the adult distribution area is covered. Biomass estimates from the surveys are not consistent but give evidence of a stable or increasing stock

## Scientific basis

<b>Assessment type</b>	Survey trends-based assessment.
<b>Input data</b>	Two survey indices (Norwegian slope survey (NO-GH-Btr-Q3), Russian autumn survey (RU-BTr-Q4)).
<b>Discards and bycatch</b>	Not included in the assessment.
<b>Indicators</b>	Survey indices. Discards are not included and are considered to be minor.
<b>Other information</b>	A benchmark is planned for 2013.
<b>Working group report</b>	<a href="#">AFWG</a>

**ECOREGION**      **Barents Sea and Norwegian Sea**  
**STOCK**            **Greenland halibut in Subareas I and II****Reference points**

No reference points are defined for this stock.

**Outlook for 2013**

No analytical assessment can be presented for this stock. Therefore, fishing possibilities cannot be projected.

**Precautionary considerations**

ICES advises on the basis of precautionary considerations that catches should not be allowed to increase above 15 000 t, the average catch for the last 10 years.

**Additional considerations***Management considerations*

There are signs that the regulations of the last two decades have improved the status of the stock, and measures should be taken to maintain the positive trends.

The 38th Session of the Joint Russian–Norwegian Fisheries Commission (JRNFC) in 2009 decided to cancel the ban against targeted Greenland halibut fishery and established the annual TAC at 15 000 t for 2010 until 2012. The 40th Session of JRNFC raised the TAC for 2012 to 18 000 t.

The benchmark for the Northeast Arctic (NEA) Greenland halibut stock is planned for 2013.

*Data and methods*

Age-reading issues have not yet been fully resolved for this stock. If the new age-reading methods are to be the basis for advice, a sufficient number of fish need to be aged annually. At present, a routine programme for reading otoliths with the new age-reading methods is being established in Norway.

The ICES Workshop on Age Reading of Greenland Halibut (WKARGH) in 2011 (ICES, 2011b) addressed this issue, and the Russian and Norwegian annual scientists' meeting in March 2012 recommended initiating annual or biannual exchange of otoliths and age-reading experts on these species in order to identify the differences in interpretation and to discuss possibilities for a common approach.

*Surveys*

The Norwegian August survey covers the continental slope from Norway to west of Spitsbergen (68–80°N, 400–1500 m depth) including the main spawning areas, and thus covers the adult part of the population. This survey was not conducted in 2010, but will be continued biennially from 2011 onwards. The Russian October–December survey (100–900 m depth) does not go as far south on the slope (ca 71°N), but covers adult areas on the northern slope and additionally extends east into central parts of the Barents Sea where catches contain a higher proportion of immature Greenland halibut.

*Comparison with previous assessment and advice*

The basis for the assessment and advice is the same as last year: precautionary considerations.

**Sources**

ICES. 2011a. Report of the Arctic Fisheries Working Group, 28 April–4 May 2011. ICES CM 2011/ACOM:05.

ICES. 2011b. Report of the Workshop on Age Reading of Greenland Halibut (WKARGH), 14–17 February 2011, Vigo, Spain. ICES CM 2011/ACOM:41. 39 pp.

ICES 2012. Report of the Arctic Fisheries Working Group, 20 April–26 May 2011. ICES CM 2012/ACOM:05.

**Table 3.4.7.1** Greenland halibut in Subareas I and II. Advice, management, and landings.

Year	ICES Advice	Predicted catch corresp. to advice	Agreed TAC	Official Landings	Discards	ICES Landings
1987	Precautionary TAC	-	-	19	-	19
1988	No decrease in SSB	19	-	20	-	20
1989	F = F(87); TAC	21	-	20	-	20
1990	F = F (89); TAC	15	-	23	-	23
1991	F at F <sub>med</sub> ; TAC; improved expl. pattern	9	-	33	-	33
1992	Rebuild SSB(1991)	6	7 <sup>1</sup>	9	-	9
1993	TAC	7	7 <sup>1</sup>	12	-	12
1994	F < 0.1	< 12	11 <sup>1</sup>	9	-	9
1995	No fishing	0	2.5 <sup>2</sup>	11	-	11
1996	No fishing	0	2.5 <sup>2</sup>	14	-	14
1997	No fishing	0	2.5 <sup>2</sup>	10	-	10
1998	No fishing	0	2.5 <sup>2</sup>	13	-	13
1999	No fishing	0	2.5 <sup>2</sup>	19	-	19
2000	No fishing	0	2.5 <sup>2</sup>	14	-	14
2001	Reduce catch to rebuild stock	< 11	2.5 <sup>2</sup>	16	-	16
2002	Reduce F substantially	< 11	2.5 <sup>2</sup>	13	-	13
2003	Reduce catch to increase stock	< 13	2.5 <sup>2</sup>	13	-	13
2004	Do not exceed recent low catches	< 13	2.5 <sup>2</sup>	19	-	19
2005	Do not exceed recent low catches	< 13	2.5 <sup>2</sup>	19	-	19
2006	Do not exceed recent low catches	< 13	2.5 <sup>2</sup>	18	-	18
2007	Reduce catch to increase stock	< 13	2.5 <sup>2</sup>	15	-	15
2008	Reduce catch to increase stock	< 13	2.5 <sup>2</sup>	14	-	14
2009	Same advice as last year	< 13	2.5 <sup>2</sup>	13	-	13
2010	Same advice as last year	< 13	15 <sup>3</sup>	15	-	15
2011	Same advice as last year	< 13	15 <sup>3</sup>	16	-	16
2012	No increase in catches	< 15	18 <sup>4</sup>			
2013	No increase in catches	< 15				

Weights in thousand tonnes.

<sup>1</sup>Set by Norwegian authorities.<sup>2</sup>Set by Norwegian authorities for the non-trawl fishery; allowable bycatch in the trawl fishery is additional to this.<sup>3</sup>Set by the Joint Russian–Norwegian Fisheries Commission for 2010–2012.<sup>4</sup>Set by the Joint Russian–Norwegian Fisheries Commission for 2012.

**Table 3.4.7.2** Greenland halibut in Subareas I and II. Nominal catch (t) by countries as officially reported to ICES.

Year	Denmark	Estonia	Faroe Isl.	France	Fed. Rep. Germany	Greenland	Iceland	Ireland	Lithuania	Norway	Poland	Portugal	Russia <sup>3,4</sup>	Spain	UK (England & Wales)	UK (Scotland)	Total
1984	0	0	0	138	2,165	0	0	0	0	4,376	0	0	15,181	0	23	0	21,883
1985	0	0	0	239	4,000	0	0	0	0	5,464	0	0	10,237	0	5	0	19,945
1986	0	0	42	13	2,718	0	0	0	0	7,890	0	0	12,200	0	10	2	22,875
1987	0	0	0	13	2,024	0	0	0	0	7,261	0	0	9,733	0	61	20	19,112
1988	0	0	186	67	744	0	0	0	0	9,076	0	0	9,430	0	82	2	19,587
1989	0	0	67	31	600	0	0	0	0	10,622	0	0	8,812	0	6	0	20,138
1990	0	0	163	49	954	0	0	0	0	17,243	0	0	4,764 <sup>2</sup>	0	10	0	23,183
1991	11	2,564	314	119	101	0	0	0	0	27,587	0	0	2,490 <sup>2</sup>	132	0	2	33,320
1992	0	0	16	111	13	13	0	0	0	7,667	0	31	718	23	10	0	8,602
1993	2	0	61	80	22	8	56	0	30	10,380	0	43	1,235	0	16	0	11,933
1994	4	0	18	55	296	3	15	5	4	8,428	0	36	283	1	76	2	9,226
1995	0	0	12	174	35	12	25	2	0	9,368	0	84	794	106	115	7	11,734
1996	0	0	2	219	81	123	70	0	0	11,623	0	79	1,576	200	317	57	14,347
1997	0	0	27	253	56	0	62	2	0	7,661	12	50	1,038	157 <sup>2</sup>	67	25	9,410
1998	0	0	57	67	34	0	23	2	0	8,435	31	99	2,659	259 <sup>2</sup>	182	45	11,893
1999	0	0	94	0	34	38	7	2	0	15,004	8	49	3,823	319 <sup>2</sup>	94	45	19,517
2000	0	0	0	45	15	0	16	1	0	9,083	3	37	4,568	375 <sup>2</sup>	111	43	14,297
2001	0	0	0	122	58	0	9	1	0	10,896 <sup>2</sup>	2	35	4,694	418 <sup>2</sup>	100	30	16,365
2002	0	219	0	7	42	22	4	6	0	7,011 <sup>2</sup>	5	14	5,584	178 <sup>2</sup>	41	28	13,161
2003	0	0	459	2	18	14	0	1	0	8,347 <sup>2</sup>	5	19	4,384	230 <sup>2</sup>	41	58	13,578
2004	0	0	0	0	9	0	9	0	0	13,840 <sup>2</sup>	1 <sup>2</sup>	50	4,662	186 <sup>2</sup>	43	0	18,800
2005	0	170	0	32	8	0	0	0	0	13,011 <sup>2</sup>	0 <sup>2</sup>	23	4,883	660 <sup>2</sup>	29	18	18,834
2006	0	0	204	46	8	0	8	0	196	11,119 <sup>2</sup>	201 <sup>2</sup>	26 <sup>2</sup>	6,055	27 <sup>2</sup>	6	0	17,897
2007	0	0	203	40	8	0	15	+	0	8,229 <sup>2</sup>	200 <sup>2</sup>	47 <sup>2</sup>	6,484	11 <sup>2</sup>	0	0	15,237
2008	0	0	640	42	5	0	28	0	0	7,394 <sup>2</sup>	201 <sup>2</sup>	46 <sup>2</sup>	5,294	112	16	0	13,778
2009 <sup>1</sup>	0	0	422	16	19	20	15	2	0	8,446 <sup>2</sup>	204 <sup>2</sup>	239	3,335	210 <sup>2</sup>	69	0	12,996
2010 <sup>1</sup>	0	0	272	102	14	15	16	0	0	7,685 <sup>2</sup>	3 <sup>2</sup>	11	6,888	190 <sup>2</sup>	26	0	15,221
2011 <sup>1</sup>	0	0	404	32	81	4	3	0	250	8,273 <sup>2</sup>	169	21.5	7,053	8 <sup>2</sup>	40	0	16,337

<sup>1</sup> Provisional figures.

<sup>2</sup> Working Group figures.

<sup>3</sup> As reported to Norwegian authorities.

<sup>4</sup> USSR prior to 1991.