

**Greenland halibut in Subarea 0+1 (offshore)**

Advice June 2025 for 2026 – 2027











**Recommendation for 2026 and 2027**

Scientific Council projected the fishing mortality scenarios defined for stocks in the Healthy Zone of the PA Framework, and three additional harvest levels requested by a Coastal State. For all these scenarios the probability that the stock falls below  $B_{lim}$  in 2028 was <1% and below  $B_{trigger}$  was less than 10%.

$F_{target}$  corresponds to catches of 30 243 t and 30 153t in 2026 and 2027, respectively. These catch levels have risks of 35% and 36% of exceeding  $F_{lim}$ , respectively.

**Management objectives**

Canada and Denmark (on behalf of Greenland) requested an assessment of stock status and advice consistent with NAFO's Precautionary Approach Framework (PAF).

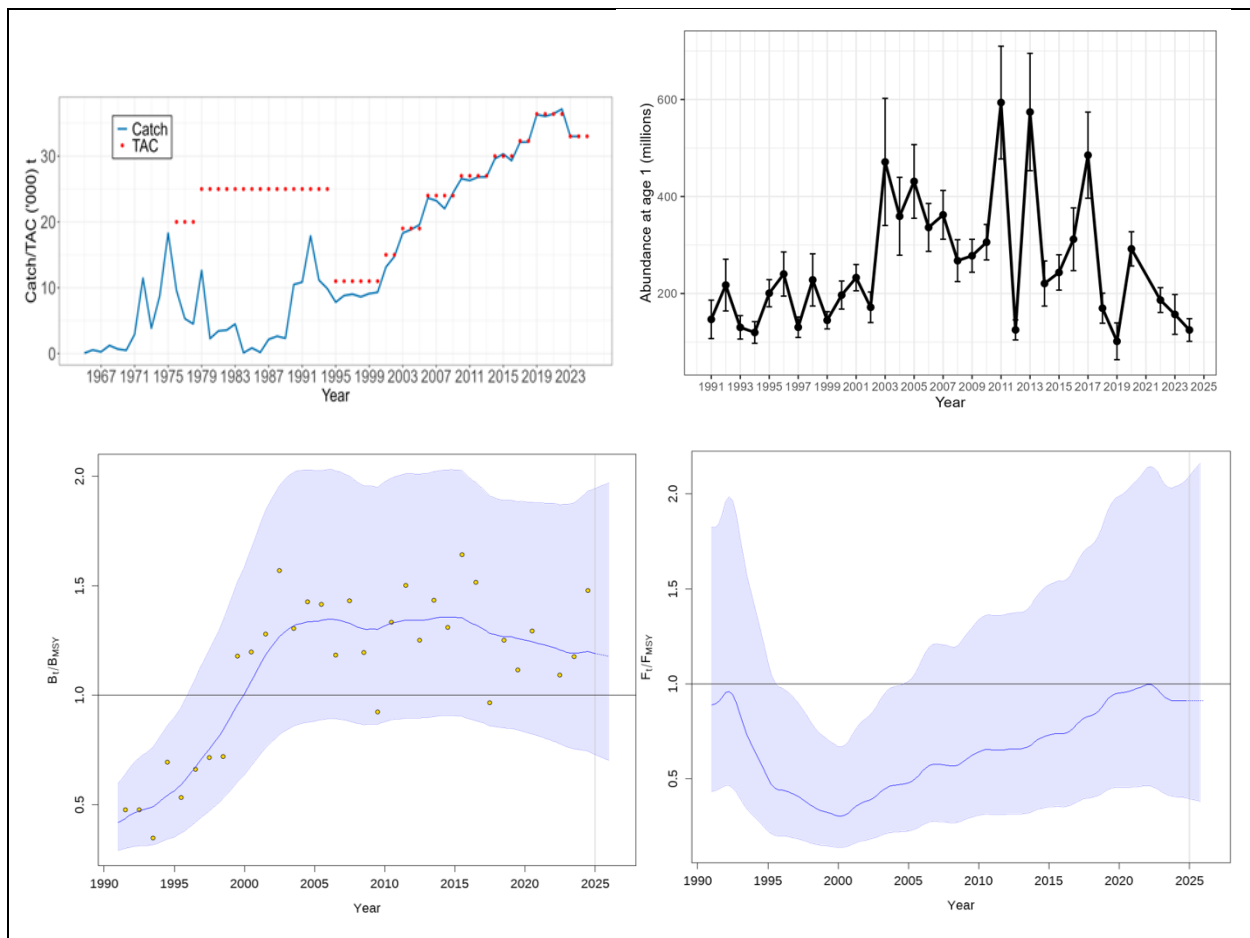
Convention Principle	Status	Comment	
Restore to or maintain at $B_{msy}$		$B > B_{msy}$	 OK
Eliminate Overfishing (Stock)		$F < F_{lim}$	 Intermediate
Eliminate Overfishing (Ecosystem)		TCI undefined	 Not accomplished
Apply Precautionary Approach		All PA reference points defined	 Unknown
Minimize harmful impacts on living marine resources and ecosystems		Directed fishery, VME closures in effect, Effectiveness of bycatch regulations uncertain	
Preserve marine biodiversity		Cannot be evaluated	

**Management unit**

The Greenland halibut stock in Subarea 0 + 1 (offshore) is part of a larger population complex distributed throughout the Northwest Atlantic.

**Stock status**

Median biomass is above  $B_{msy}$  ( $B/B_{msy} = 1.2$ ), the probability of being below  $B_{lim}$  (30%  $B_{msy}$ ) is less than 1%, and the probability of being below  $B_{trigger}$  (75%  $B_{msy}$ ) is 3%. Fishing mortality is below  $F_{msy}$  ( $F/F_{msy} = 0.91$ ), the probability of being above  $F_{lim}$  ( $F_{msy}$ ) is 42%, and the probability of being above  $F_{target}$  (85%  $F_{msy}$ ) is 57%.



## Reference points

$B_{lim}$  is 30%  $B_{msy}$ .  $B_{trigger}$  is 75%  $B_{msy}$ .  $F_{lim}$  is  $F_{msy}$ .  $F_{target}$  is 85%  $F_{msy}$ .

## Projections

Medium-term projections were carried forward to the year 2028 for catch scenarios with catch = TAC = 33 005 t for 2025. Constant  $F$  values were applied from 2026-2027 at several levels of  $F$  including  $F=0$ , the three levels suggested for stocks in the Healthy Zone (75%  $F_{msy}$ , 85%  $F_{msy}$ , and  $F_{msy}$ ), and three catch levels requested by Coastal States ( $F_{status\ quo}$ , current TAC, and 2019-2022 TAC).

For the  $F_{status\ quo}$  projections, the probability that  $F > F_{lim}$  in 2027 was 51%. At 75%  $F_{msy}$ , the probability that  $F > F_{lim}$  in 2027 was 26%. Projected at the level of 85%  $F_{lim}$ , the probability that  $F > F_{lim}$  in 2027 was 36% and for  $F_{msy}$  projections, this probability increased to 50%. For projections at the current TAC (33 005 t) and the 2019-2022 TAC (36 370 t) the probability that  $F > F_{lim}$  in 2027 was 44% and 54%, respectively. For biomass projections, in all scenarios the probability of biomass being below  $B_{lim}$  in 2028 was less than 1%. The probability of biomass being below  $B_{trigger}$  in 2028 ranged from 4% to 9% for the six explored fishing scenarios, except the  $F=0$  scenario. The probability that biomass in 2028 is greater than biomass in 2025 is between 27% and 52% for all projections, excluding the  $F=0$  scenario.

Projections with Catch <sub>2025</sub> = 33 005 t		
Year	Yield (‘000t) median	Projected Relative Biomass (B/B <sub>msy</sub> ) median (80%CI)
F=0		
2025	33005	0.87 (1.19, 1.64)
2026	0	0.84 (1.18, 1.65)
2027	0	0.97 (1.30, 1.74)
2028	-	1.10 (1.42, 1.83)
F = 0.75F <sub>msy</sub>		
2025	33005	0.87 (1.19, 1.64)
2026	26811	0.84 (1.18, 1.65)
2027	27043	0.84 (1.19, 1.67)
2028	-	0.85 (1.20, 1.69)
F = 0.85F <sub>msy</sub>		
2025	33005	0.87 (1.19, 1.64)
2026	30243	0.84 (1.18, 1.65)
2027	30153	0.83 (1.17, 1.66)
2028	-	0.82 (1.17, 1.68)
F = F <sub>msy</sub>		
2025	33005	0.87 (1.19, 1.64)
2026	35328	0.84 (1.18, 1.65)
2027	34618	0.80 (1.15, 1.65)
2028	-	0.77 (1.13, 1.65)
F = F <sub>status quo</sub>		
2025	33005	0.87 (1.19, 1.64)
2026	35502	0.84 (1.18, 1.65)
2027	34768	0.80 (1.15, 1.65)
2028	-	0.77 (1.13, 1.65)
Current TAC		
2025	33005	0.87 (1.19, 1.64)
2026	33221	0.84 (1.18, 1.65)
2027	32789	0.81 (1.16, 1.65)
2028	-	0.79 (1.15, 1.66)
2019-2022 TAC		
2025	33005	0.87 (1.19, 1.64)
2026	36834	0.84 (1.18, 1.65)
2027	35906	0.81 (1.16, 1.65)
2028	-	0.79 (1.15, 1.66)

		Catch 2025 = 33 005 t						
		F=0	Healthy Zone			Coastal State Request		
			F = 0.75F <sub>msy</sub>	F = 0.85F <sub>msy</sub>	F = F <sub>msy</sub>	F status quo	Current TAC	2019-2022 TAC
Yield (50%)	2025	33005	33005	33005	33005	33005	33005	33005
	2026	0	26811	30243	35328	35502	33005	36370
	2027	0	27043	30153	34618	34768	33005	36370
P(F>F <sub>lim</sub> )	2025	42%	42%	42%	42%	42%	42%	42%
	2026	<1%	25%	35%	50%	51%	44%	54%
	2027	<1%	26%	36%	50%	51%	44%	54%
P(B<B <sub>lim</sub> )	2025	<1%	<1%	<1%	<1%	<1%	<1%	<1%
	2026	<1%	<1%	<1%	<1%	<1%	<1%	<1%
	2027	<1%	<1%	<1%	<1%	<1%	<1%	<1%
	2028	<1%	<1%	<1%	<1%	<1%	<1%	<1%
P(F>F <sub>target</sub> )	2025	57%	57%	57%	57%	57%	57%	57%
	2026	<1%	39%	50%	65%	65%	59%	68%
	2027	<1%	39%	50%	64%	64%	59%	68%
P(B<B <sub>trigger</sub> )	2025	3%	3%	3%	3%	3%	3%	3%
	2026	4%	4%	4%	4%	4%	4%	4%
	2027	<1%	4%	5%	6%	6%	6%	7%
	2028	<1%	4%	6%	8%	8%	7%	9%
P(B <sub>2028</sub> >B <sub>2025</sub> )		96%	52%	42%	30%	29%	34%	27%
(B <sub>2028</sub> -B <sub>2025</sub> )/B <sub>2025</sub>		96%	1%	-12%	-31%	-32%	-23%	-37%
P(B <sub>2027</sub> >=B <sub>2025</sub> )		89%	48%	42%	33%	33%	36%	31%
P(B <sub>2027</sub> <B <sub>2025</sub> )		12%	52%	59%	67%	67%	63%	69%

## Assessment

A Stochastic Production model in Continuous Time (SPiCT) was used for the assessment of this stock. Input to this model include landings data and a standardized index of exploitable stock biomass from combined survey data.

The next assessment is expected to be in 2027.

### Human impact

Mainly fishery related mortality has been documented. Other sources (e.g. pollution, shipping, oil-industry) are undocumented.

### Biology and Environmental interactions

No specific studies were reviewed during this assessment.

## Ecosystem sustainability of catches

The impact of bottom fishing activities on VMEs in SA 0 was assessed in 2016. Three areas have been designated as marine refuges, that exclude bottom contact fisheries: Disko Fan, Davis Strait and Hatton Basin. Areas in SA 1 have also been closed to bottom fishing to protect benthic habitats.

Greenland halibut is included in the piscivore guild. There are no EPU nor TCIs defined for this region. The ecosystem sustainability of catches cannot be evaluated. Greenland shark is a bycatch species of concern in the SA 0+1 (offshore) fishery given its low reproductive rate, slow growth rate and limited ecological information.

### **Fishery**

Catches were first reported in 1965. Catches increased from 1989 to 1992 due to a new trawl fishery in Div. 0B with participation by Canada, Norway, Russia, and the Faroe Islands and an expansion of the Div. 1CD fishery with participation by Japan, Norway, and the Faroe Islands. Catch declined from 1992 to 1995 primarily due to a reduction of effort by non-Canadian fleets in Div. 0B. Since 1995 to 2024 catches were near the TAC and increased in step with increases in the TAC, with catches reaching a high in 2022. Catches decreased following a decrease in TAC in 2023.

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
TAC	30.0	32.3	32.3	36.4	36.4	36.4	36.4	33.0	33.0	33.0
SA 0	14.1	15.9	16.0	18.3	17.9	19.1 <sup>2</sup>	18.3 <sup>2</sup>	16.4 <sup>2</sup>	16.5 <sup>2</sup>	
SA 1	15.2	16.2	16.2	18.0	18.1	17.3	18.8	16.6	16.5	
Total STACFIS <sup>1</sup>	29.3	32.1	32.2	36.3	36.0	36.4	37.2	33.0	33.0	

<sup>1</sup> Based on STATLANT, with information from Canada and Greenland authorities to exclude inshore catches.

<sup>2</sup> STACFIS estimate using 1.48 conversion factor for J-cut, tailed product.

### **Sources of information**

SCR 25/020,021,030,031; SCS 25/012.