

Section 4

**GREENLAND TURBOT**

The stock assessment document was not complete for Greenland turbot at the November Plan Team meeting because the senior assessment author was involved in the preparation of the SEIS and Biological Opinion. However, the Plan team did hear a brief presentation from the stock assessment author. The current assessment is a straightforward update of last year’s assessment, incorporating new catch and survey information.

The SSC has determined that reliable estimates of  $B_{40\%}$ ,  $F_{40\%}$ , and  $F_{35\%}$  exist for this stock, and that this stock therefore qualified for management under Tier 3 of the BSAI Groundfish FMP. The updated point estimates of  $B_{40\%}$ ,  $F_{40\%}$ , and  $F_{35\%}$  from the present assessment are 81,200 t, 0.26, and 0.32, respectively. Projected spawning biomass for 2001 is 136,000 t, placing Greenland turbot in sub-tier “a” of Tier 3. The Plan Team notes that the ratio of spawning biomass to  $B_{40\%}$  has changed slightly since last year’s assessment. The maximum permissible value of  $F_{ABC}$  under Tier 3a is 0.26. A fishing mortality rate of 0.26 translates into a 2001 catch of 27,400 t, which would be the maximum permissible ABC under Amendment 56. The Plan Team concurs with the authors’ recommendation to set the 2001 ABC at a value substantially less than the maximum permissible, using  $F_{ABC} = 0.25 \times \max F_{ABC}$ , which results in a 2001 ABC of 8,400 t. The Plan Team believes that a 2001 ABC well below the maximum permissible value is warranted for the following reasons: 1) estimated age 1+ biomass has trended downward continually since 1972; 2) the 7 most recent age 1 recruitments constitute 7 of the lowest 8 values in the entire time series; and 3) if the maximum permissible ABC of 27,400 t were actually caught, this would constitute the highest catch since 1983, even though spawning biomass in 2001 is projected to be less than half of what it was in 1983.

The OFL fishing mortality rate is computed under Tier 3a,  $F_{OFL} = F_{35\%} = 0.32$ , and translates into a 2001 OFL of 31,000 t. Model projections indicate that this stock is neither overfished nor approaching an overfished condition.

*Recommendations for next year’s assessment*

- 1) Longline catches have represented an increasing share of the reported Greenland turbot catches in recent years. Because killer whales can remove substantial amounts of catch from longlines, the Plan Team recommends that the authors analyze observer data to estimate how much unreported mortality occurs due to killer whale depredation, and include this estimate of unreported mortality in the assessment model.
- 2) Shelf and slope trawl surveys and longline surveys are currently used to index Greenland turbot abundance in the assessment model. The Plan Team recommends that the authors weight the survey likelihood components by the respective annual sampling variances. The Plan Team also recommends that the authors include longline survey data from all available years in the model.

Status and catch specifications (t) of **Greenland turbot** in recent years. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2001 are those recommended by the Plan Team. Catch data are current through 10/28/00.

<u>Area</u>	<u>Year</u>	<u>Age 1+ Bio.</u>	<u>OFL</u>	<u>ABC</u>	<u>TAC</u>	<u>Catch</u>
<b>BSAI</b>	1999	177,000	29,700	14,200	9,000	5,852
	2000	233,000	42,000	9,300	9,300	6,927
	2001	210,000	31,000	8,400	n/a	n/a