Chapter 1b: Abbreviated assessment of pollock (*Theragra chalcogramma*) from the Bogoslof Island Region

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Executive Summary

In 2008, Bogoslof pollock were moved to a biennial assessment schedule to coincide with the new frequency of trawl surveys conducted in this region. Presently, they are planned to occur on odd-numbered years, and for these years a more complete assessment of this stock component will be conducted. The following updates all available new information on pollock from this region. Results for assessment conditions and management recommendations are essentially the same as from 2007.

Updated catches and ABCs
Prior to 1977, few pollock were caught in the Donut Hole or Bogoslof region (Low and Akada 1978). Japanese scientists first reported significant quantities of pollock in the Aleutian Basin in the mid-to-late 1970's, but large scale fisheries did not occur until the mid-1980's in the Donut Hole. By 1987 significant components of these catches were attributed to the Bogoslof Island region (Table 1b.1), although the actual locations are poorly documented. The Bogoslof fishery primarily targeted winter spawning-aggregations. Since 1992, the Bogoslof management district has been closed to directed pollock fishing.

In 1991, the only year with extensive observer data, the fishery timing coincided with the open seasons for the EBS and Aleutian Islands pollock fisheries (recall that the Bogoslof management district was not yet established). However, after March 23, 1991 the EBS region was closed to fishing and some effort was re-directed to the Aleutian Islands region but adjacent to the Bogoslof district. In subsequent years, seasons for the Aleutian Islands pollock fishery were managed separately. Bycatch and discard levels were relatively low from these areas when there was a directed fishery (e.g., 1991). Updated estimates of pollock bycatch levels from other fisheries are small in recent years (Table 1b.2).

Maximum permissible ABC and OFL estimates for 2009 and 2010 under Tier 5 were used in place of an age-structured stock assessment model. This method relies exclusively on the NMFS survey biomass estimate which has been relatively stable since 2000 averaging about 250,000 t (with an inter-annual coefficient of variation of 15%). The most recent survey of the Bogoslof spawning stock used echo-integration trawl (EIT) methods and occurred during the winter of 2007 (Honkalehto et al. 2008; Table 1b.3). Using Tier 5 and the most recent survey estimate, the maximum permissible ABC value of 43,800 t (assuming M = 0.2). Using an alternative to this value (which includes a target stock size) gives 7,970 t. This latter value was adopted by the SSC in 2007. The value for OFL using the Tier 5 calculation is 58,400 t. These alternatives (from the 2007 assessment) are summarized as follows:

2009 and 2010 ABC and OFL levels		
Maximum permissible ABC:	***Harvest Rule ($F_{40\%}$ = 0.27)***	**yield = 7,967 mt**
	Tier 5 (M = 0.2)	yield = 43,800 mt
	Tier 5 (M=0.3)	yield = 65,700 mt
Overfishing (OFL):	***Tier 5 (M = 0.2)***	**yield = 58,400 mt**
	Tier 5 (M=0.3)	yield = 87,600 mt

Literature cited

Honkalehto, T., D. Mckelvey, and K. Williams. 2008. Results of the March 2007 echo integration-trawl survey of walleye pollock (Theragra chalcogramma) conducted in the southeastern Aleutian Basin near Bogoslof Island, Cruise MF2007-03. AFSC Processed Rep. 2008-01, 37 p. Alaska Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way NE, Seattle WA 98115. (.pdf, 2 MB: http://www.afsc.noaa.gov/Publications/ProcRpt/PR2008-01.pdf).

Ianelli, J.N., T. Honkalehto, and N. Williamson. 2006. An age-structured assessment of pollock (*Theragra chalcogramma*) from the Bogoslof Island Region. *In*: Stock assessment and fishery evaluation report for the groundfish resources of the Bering Sea/Aleutian Islands regions. North Pac. Fish. Mgmt. Council, Anchorage, AK, section 181-218, http://www.afsc.noaa.gov/refm/docs/2006/Bogpollock.pdf

Table 1b.1 Catch in tons from the Donut Hole, the Bogoslof Island area, and the Bogoslof region assuming 60% of the Donut Hole catch was part of the stock corresponding to the Bogoslof region, 1977-2008.

Year	Donut Hole (t)	Bogoslof Island (t)	Total (t)	Bogoslof Island + 60% of Donut Hole catch
1977		11,500	11,500	11,500
1978		9,600	9,600	9,600
1979		16,100	16,100	16,100
1980		13,100	13,100	13,100
1981		22,600	22,600	22,600
1982		14,700	14,700	14,700
1983		21,500	21,500	21,500
1984	181,200	22,900	204,100	131,620
1985	363,400	13,700	377,100	231,740
1986	1,039,800	34,600	1,074,400	658,480
1987	1,326,300	377,436	1,703,736	1,173,216
1988	1,395,900	87,813	1,483,713	925,353
1989	1,447,600	36,073	1,483,673	904,633
1990	917,400	151,672	1,069,072	702,112
1991	293,400	316,038	609,438	492,078
1992	10,000	241	10,241	6,241
1993	1,957	886	2,843	2,060
1994		556	556	556
1995		334	334	334
1996		499	499	499
1997		163	163	163
1998		136	136	136
1999		29	29	29
2000		29	29	29
2001		258	258	258
2002		1,042	1,042	1,042
2003		24	24	24
2004		0.01	0.01	0.01
2005		0.02	0.02	0.02
2006		0.01	0.01	0.01
2007		0.03	0.03	0.03
2008		8.17	8.17	8.17

Table 1b.2. Estimated retained, discarded, and total pollock catch (t) from the Bogoslof region. Source: NMFS Regional office Blend database and catch accounting system.

Year	Discard	Retained	Total
1991	20,327	295,711	316,038
1992	240	1	241
1993	308	578	886
1994	11	545	556
1995	267	66	334
1996	7	492	499
1997	13	150	163
1998	3	133	136
1999	11	18	29
2000	20	10	29
2001	28	231	258
2002	12	1,031	1,042
2003	19	5	24
2004	0.01		0.01
2005	0.02	0.00	0.02
2006	0.00	0.01	0.01
2007		0.03	0.03
2008		8.17	8.17

Table 1b.3. Biomass (tons) of pollock as surveyed in the Bogoslof region, 1988-2008. For additional details see Honkalehto et al. (2008).

Year	Survey biomass estimates (t)	Survey area (nmi2)	Relative error
1988	2,395,737	NA	*22%*
1989	2,125,851	NA	*22%*
1990	No survey		
1991	1,289,006	8,411	12%
1992	940,198	8,794	20%
1993	635,405	7,743	9%
1994	490,077	6,412	12%
1995	1,104,124	7,781	11%
1996	682,277	7,898	20%
1997	392,402	8,321	14%
1998	492,396	8,796	19%
1999	475,311	NA	*22%*
2000	301,402	7,863	14%
2001	232,170	5,573	10%
2002	225,712	2,903	12%
2003	197,851	2,993	22%
2004	No survey		
2005	253,459	3,112	17%
2006	240,000	1,803	12%
2007	292,000	1,870	12%
2008	No survey		

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