

Staff regulatory proposals: 2004

Bruce M. Leaman and Heather L. Gilroy

In making catch limit recommendations for 2004, staff has considered the results of the analytic assessment, changes in the commercial and survey indices used to monitor the stock, the implications of separate male and female assessments, and an appropriate harvest strategy. Consideration of all of these elements and the latter two in particular, lead us to recommend caution in setting catch limits for 2004.

Commercial catch rates in 2003 improved or were stable with those of 2002 in Areas 2A through 3A, with a notable increase in Area 3A. Those in the west, Areas 3B and 4, continued their decline of recent years. In all of these western areas, commercial CPUE has been declining since 2000 and in the case of Areas 4C and 4D, for longer periods. The coherence of CPUE changes in these latter two areas is consistent with the staff's view that Areas 4C/D/E comprise a single stock management unit. However, with the exception of Area 4C, the commercial CPUE in regulatory sub-areas of Area 4 is near the long-term average value.

In contrast, the IPHC setline survey CPUE values decreased in 2003 in all regulatory areas. The declines in Areas 2C and 3A are from higher CPUE values seen in 2002, and are now similar to the CPUE observed in 2001. Western area survey CPUE values continued to show declines similar to the commercial CPUE values.

The major changes in the stock assessment for 2003 are the development of a sex-specific model for the stock which uses a length-specific selectivity, allowance for bias and variance in age estimation, and the first analytical estimates of abundance for Areas 3B, 4A, and 4B (Clark and Hare 2004). Previously, the sexes have been combined in the IPHC stock assessment but the change in halibut growth rates over the past decade and the consequent effect on the selectivity of fish by age has prompted the staff to separate the sexes for assessment. While recruitment estimates for Areas 2B, 2C, and 3A are higher than previous estimates, the estimates of exploitable biomass are lower because we are using updated length-specific commercial selectivities that show the lower selectivities associated with lower growth rates over the past decade. This results in fewer fish being fully recruited to the fishing gear, especially males in Area 3A. The new analytical estimates of exploitable biomass in Areas 3B, 4A, and 4B are substantially lower than the previous survey-based estimates.

Catch limit recommendations

The analytic stock assessment has been conducted on a sex-specific basis for the first time. Our recommendations have been developed in consideration of the sex-specific differences in selectivity from previous estimates. In addition, the Conditional Constant Catch (CCC) policy, outlined by Hare et al. (2004) is used in making recommendations to the Commission for use in the management of the Pacific halibut stock. The CCC policy uses a ceiling harvest rate and a ceiling (or cap) on total removals as a means to stabilize harvest over longer periods. The lower selectivities used in this year's assessment will likely require an upward revision of the existing 20% Constant Exploitation Yield (CEY) harvest rate but this analysis is not yet complete. In the interim, the

yield estimates have been calculated using a 25% harvest rate in Areas 2 and 3, but we maintain the 20% harvest rate in Area 4 because of uncertainty about the underlying productivity of stocks in this region.

The staff recommendations totaling 73.78 million pounds are presented in Table 1. The Area 2A recommendation includes all removals (commercial, treaty Indian, sport) allocated by the Pacific Fishery Management Council's Catch Sharing Plan. For the first time, the Area 2B catch limit recommendation includes totals for the commercial and sport fisheries. The Department of Fisheries, Canada will allocate the adopted catch limit between the sport and commercial fisheries.

The Area 3A estimated exploitable biomass for 2003 increased considerably over the previous year but we believe some caution is required before the CEY based on this estimate should be adopted. Accordingly, we are recommending that the catch limit for Area 3A be increased by only 50 percent of the potential increase. The stock assessment indicates lower biomass in Area 3B and we recommend using the setline CEY based on this estimate.

We are concerned that the productivity of the Bering Sea halibut is less than that of the Gulf of Alaska and more southerly areas. In addition, the data set providing the exploitable biomass estimate is of relatively short duration, and we have seen a sequence of years with declining CPUE for these areas. Accordingly, we recommend continuation of a 20% exploitation rate for this area until either the results of a recent tagging experiment or continued application of the analytic model indicate a higher rate is appropriate. The historical record of recommended catch limits, catches and CPUE values by regulatory area, from 1999-2003 are included in Table 2.

Future directions

The full implementation of the sex-specific assessment is not yet complete and there are several aspects of the assessment that require additional work. In addition, we wish to continue our examination of the CCC harvest policy in light of the results of the sex-specific assessment. The change in growth rates in the central region of the stock and the associated change in selectivity to longline gear requires that we re-examine the suitability of our current minimum commercial size limit. While increased yield per recruit could be achieved with a lower size limit, primarily from the harvest of a higher fraction of males, there are potential negative impacts on mortality of immature females and the possibility of highgrading by harvesters. This requires an examination of spawning contributions of recruiting females and the use of a variety of minimum size limits. Lastly, the PIT tagging experiment undertaken in 2003 will provide a valuable anchor on the validity of our assessment model, through an independent estimate of biomass and exploitation rates. Estimates using recoveries from the PIT tagging program are expected to begin in 2004 and be refined in subsequent years as tags continue to be recovered from the approximately 44,000 tags applied in 2003.

Fishing periods

As in past years, the staff recommends March 15 to November 15 opening and closing dates for the quota share fishing season. This recommendation is a compromise between minimizing interceptions of migrating fish and providing opportunity for market presence of fresh wild fish. The Area 2A fishery should also occur within this period.

Elsewhere in this volume, the staff reports on the joint industry-agency working group report on extension of the existing halibut season. While the staff would prefer to minimize the issues created by the interception of migrating fish during fishing outside of the existing season, we recognize the desire for longer market presence of wild fish by the industry. Leaman et al. (2002) concluded that conservation for the halibut stock as a whole would not be compromised by an extended fishing season. The annual stock assessment would continue to guarantee conservative harvest for the coastwide spawning stock. The essence of the concerns about winter fishing for halibut involving its biology is the potential shifts in biomass distribution that could occur as a result of interceptions of migrating fish. Interceptions will create differential exploitation rates among areas, since catch limits are set on a regulatory area basis. The magnitude of the changes would be proportional to the magnitude of the winter fisheries.

For the Area 2A directed commercial fishery, the staff recommends fishing periods similar to those in effect in 2003: A series of 10-hour periods, with fishing period limits to ensure that the catch limit is not exceeded. The size of the fishing period limits will be determined when more information on fleet participation is available.

The staff recommends a subsistence fishing season in Alaska of January 1 to December 31, in accordance with National Marine Fisheries Service regulations.

Catch sharing plans: Areas 2A and 4CDE

The Commission does not make allocative decisions within regulatory areas or among different user groups. However, for Areas 2A and 4CDE the staff recommends that the Commission endorse the catch sharing plans developed by the Pacific and North Pacific Fishery Management Councils for these areas, respectively.

Proposed changes to the IPHC regulations

Retention of tagged halibut

Current regulations allow the retention of halibut only by commercial harvesters. The Commission staff recommends allowing any person at any time to be able to retain a halibut that bears a Commission tag. The halibut would need to have the tag attached at the time of landing and it would be made available to the Commission or an authorized officer. Therefore, Section 20 of the IPHC Regulations would apply to all fishing whereas it applies currently to commercial halibut fishing only. If this proposal is adopted, we also recommend that the sale of tagged halibut be restricted to legal-sized halibut caught by commercially licensed vessels. In addition, we recommend changing the regulation to define the tag as an external tag that was applied by IPHC or with IPHC permission.

Permit required to retain halibut for research purposes

The Commission staff recommends an addition to the regulations that would require individuals or organizations to obtain written permission from IPHC to collect and retain halibut for scientific, experimental, or educational projects. The Commission has given permission and worked with organizations in the past to complete research projects on halibut. In most cases, individuals do obtain a permit to allow them to possess halibut. We recommend a new regulation section that would be for halibut retained outside of the licensed user groups. It would state that it is unlawful to possess, transport, and retain halibut, except in accordance with the terms of a permit issued by the IPHC.

Request NMFS to change date-specific regulations

It was the consensus of the season extension work group that the Commission should request that NMFS restructure the current date-specific quota share regulations to instead reference a time relative to the season opening or closing dates when operational events (such as permit calculations and issuance) will occur, rather than on a specific date. The Commission staff agrees with this recommendation and believe it is appropriate even if the halibut season were not changed in the near future, as it would allow the Commission and NMFS flexibility in implementing alternate season dates. The halibut season (quota share) opening date is now partially restricted by the NMFS date-specific regulations.

Customary and traditional fishing in Alaska

At the request of the National Marine Fisheries Service, we recommend that IPHC regulations be changed to require that the data collected in the subsistence fishery remain confidential.

References

- Clark, W. G. and Hare, S. H. 2004. Assessment of the Pacific halibut stock at the end of 2003. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2003: 171-200.
- Hare, S. H., Clark, W. G., and Leaman, B. M. 2004. The conditional constant catch (CCC) harvest policy: Summary and estimated CCC yield for 2004. Int. Pac. Halibut Comm. 2004 Annual Meeting Handout (Bluebook): 51-62.
- Leaman, B. M., Geerneart, T. O., Loher, T., and Clark, W. G. 2002. Further examination of biological issues concerning an extended commercial fishing season. Int. Pac. Halibut Comm. 2002 Annual Meeting Handout (Bluebook): 39-58.

Table 1. 2003 setline catch limits, 2004 estimated yields under the CCC harvest policy, 2003 other removals, and staff recommended catch limits for 2004, by IPHC regulatory area (million lbs, net weight).

Regulatory Area	2003 Catch Limit	2004 CCC		2004 Setline Yield	2004 Recommended Setline Catch Limit	
		Estimated Yield	Estimated Other Removals			
2A	1.31	1.69	0.30	1.39	1.39	¹
2B	11.75	13.00	0.47	12.53	12.53	²
2C	8.50	12.00	2.97	9.03	9.03	
3A	22.63	35.00	6.52	28.48	25.56	
3B	17.13	16.25	0.65	15.60	15.60	³
4A	4.97	4.20	0.73	3.47	3.47	³
4B	4.18	3.00	0.19	2.81	2.81	³
4CDE⁴	4.45	5.96	2.57	3.39	3.39	³
Total	74.92	91.10	14.40	76.70	73.78	

¹ Catch limit for 2A includes commercial, sport, and treaty subsistence catch

² 2004 Catch limit for 2B includes commercial and sport catch

³ Catch limits for Area 4 use 0.2 exploitation rate because of uncertainty about productivity

⁴ Individual catch limits for Areas 4C, 4D, and 4E are determine by North Pacific Fishery Management Council catch sharing plan

Table 1. Estimated setline CEY, staff recommended catch limits, catch limits adopted by the Commission, catch, percent of catch limits taken, survey and commercial CPUE of Pacific halibut by IPHC regulatory area (in thousands of pounds, net weight), 1999-2003.

Regulatory Area	ESTIMATED SETLINE CEY					STAFF RECOMMENDATIONS									
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
2A ¹	690	830	1,120 ²	1,310	1,290	690	830	1,140 ²	1,130	1,310	690	830	1,140 ²	1,130	1,310
2B	11,210	7,850	10,510 ²	11,750	11,320	11,210	9,970	9,990 ²	11,750	11,750	11,210	9,970	9,990 ²	11,750	11,750
2C	10,490	6,310	8,780	8,500	9,110	10,490	8,400	8,780	8,500	8,500	10,490	8,400	8,780	8,500	8,500
3A	24,670	11,940	21,890	24,140	34,220	24,670	18,310	21,890	22,630	22,630	24,670	18,310	21,890	22,630	22,630
3B	26,830	18,360	25,460	28,560	29,190	13,370	15,031	18,500	17,130	17,130	13,370	15,031	18,500	17,130	17,130
4A	8,420	6,420	9,820	11,960	11,220	4,240	4,970	4,970	4,970	4,970	4,240	4,970	4,970	4,970	4,970
4B	6,710	6,770	10,060	7,510	7,760	3,980	4,910	4,910	3,440	4,180	3,980	4,910	4,910	4,180	4,180
4CDE	9,800	4,130	7,630	11,810	13,820	4,130	4,130	4,450	4,450	4,450	4,130	4,130	4,450	4,450	4,450
Total	98,820	62,610	94,770	105,540	117,930	72,780	66,550	74,630	74,180	74,920	72,780	66,550	74,630	74,180	74,920
Regulatory Area	CATCH LIMITS ³					CATCH ⁴									
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003 ⁵	1999	2000	2001	2002	2003 ⁵
2A ¹	760	830	1,140	1,310	1,310	780	845	1,126	1,253	1,234	780	845	1,126	1,253	1,234
2B	12,100	10,600	10,510	11,750	11,750	12,214	10,630	10,207	11,987	11,681	12,214	10,630	10,207	11,987	11,681
2C	10,490	8,400	8,780	8,500	8,500	9,902	8,266	8,273	8,455	8,327	9,902	8,266	8,273	8,455	8,327
3A	24,670	18,310	21,890	22,630	22,630	24,310	18,166	21,100	22,614	22,282	24,310	18,166	21,100	22,614	22,282
3B	13,370	15,030	16,530	17,130	17,130	13,160	14,888	15,993	17,003	17,141	13,160	14,888	15,993	17,003	17,141
4A	4,240	4,970	4,970	4,970	4,970	4,220	4,960	4,915	5,002	4,895	4,220	4,960	4,915	5,002	4,895
4B	3,980	4,910	4,910	4,180	4,180	3,452	4,560	4,388	4,030	3,827	3,452	4,560	4,388	4,030	3,827
4CDE	4,450	4,450	4,450	4,450	4,450	3,917	3,951	3,926	3,458	3,195	3,917	3,951	3,926	3,458	3,195
Total	74,060	67,500	73,180	74,920	74,920	73,954	68,266	71,929	73,802	72,582	73,954	68,266	71,929	73,802	72,582
Regulatory Area	PERCENT OF CATCH LIMIT TAKEN					AVERAGE SURVEY (S) AND COMMERCIAL (C) CPUE ⁶									
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
2A ¹	103	102	99	96	94	37	NA	41	33	22	37	NA	263	181	183
2B	101	100	97	102	99	95	104	117	107	85	95	213	229	222	240
2C	94	98	94	99	98	204	199	233	261	240	204	199	233	244	223
3A	99	99	96	100	98	241	437	272	299	229	241	437	272	299	229
3B	98	99	97	99	100	438	538	373	399	356	438	538	373	399	356
4A	100	100	99	101	98	382	500	286	402	388	382	500	286	402	388
4B	87	93	89	96	92	203	310	216	174	159	203	310	216	174	159
4CDE	88	89	88	78	72	-	-	-	-	-	-	-	-	-	-

¹ Area 2A includes sport catch and treaty Indian catch
² With the lower series of Area 2B sport catch estimates (including .887 Mlb in 2001), Area 2AB exploitable biomass is 66.71. With 11% of the total in Area 2A, the 2001 setline CEY is 1.12 Mlb in 2A and 10.51 Mlb in 2B. With a sport catch estimate of 1.58 Mlb in 2001, the exploitable biomass for 2AB is 67.62 Mlb and the 2001 setline CEY is 1.14 Mlb in 2A and 9.99 Mlb in 2B
³ Catch limits do not include additional pounds from underage/overage programs
⁴ Catch does not include IPHC research catch
⁵ 2003 data are preliminary
⁶ lbs/skate: no Area 2A surveys in 1998 or 2002 and refer to Clark and Hare (2003) for Areas 4C and 4D CPUEs