

The Fishery

2004 commercial fishery and regulation changes

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Abstract

This section presents the 2004 regulations and the results of the commercial halibut fishery. All 2004 catch and landing data are preliminary. The data sources are the International Pacific Halibut Commission (IPHC), National Marine Fisheries Service (NMFS), and the Canadian Department of Fisheries and Oceans (DFO).

Regulatory areas for 2004

Regulatory areas for the 2004 commercial halibut fishery are shown in Figure 1. Boundary lines for the regulatory areas have remained the same since 1990. The southeastern flats in the Bering Sea, excluding Bristol Bay, remained closed in 2004 to all halibut fishing. A brief description of the regulatory areas for the 2004 halibut fishery follows:

Area 2A - all waters off the coast of the States of California, Oregon, and Washington.

Area 2B - all waters off the coast of British Columbia.

Area 2C - all waters off the coast of Alaska, south and east of Cape Spencer.

Area 3A - all waters between Cape Spencer and Cape Trinity, Kodiak Island.

Area 3B - all waters between Cape Trinity and a line extending southeast from Cape Lutke, Unimak Island.

Area 4A - all waters west of Area 3B and the Bering Sea closed area that are south of 56°20' N. and east of 172°00' W.

Area 4B - all waters in the Gulf of Alaska and the Bering Sea west of Area 4A and south of 56°20' N.

Area 4C - all waters in the Bering Sea north of Area 4A and the closed area that are east of longitude 171°00' W., south of latitude 58°00' N., and west of longitude 168°00' W.

Area 4D - all waters in the Bering Sea north of Areas 4A and 4B, north and west of Area 4C, and west of longitude 168°00' W.

Area 4E - all waters in the Bering Sea north and east of the closed area, east of Areas 4C and 4D, and south of 65°34' N.

Changes to the regulations for 2004

The regulations for the 2004 fishery were adopted at the Commission's 2004 Annual Meeting in Juneau, Alaska and were later approved by the Canadian and United States governments with one exception. The Canadian government, again, specifically chose not to approve the regulation that required commercially caught halibut to have their gills and entrails removed before being

offloaded from a vessel, thereby allowing the landing of live halibut caught in British Columbia waters.

At the Annual Meeting, the Commission conducted a broad discussion on the season extension issue and fishing season dates. The staff reported to the Commission on a joint agency – industry meeting that investigated the logistical issues that would need to be addressed to extend the halibut season. It was generally agreed that a 10.5-month season could be implemented with approximately one year lead time but a 12-month season was significantly more difficult to implement. The 2004 season dates that were adopted were similar to the 2003 dates. An agreement was made to open the fishery on a Sunday to facilitate marketing. The Canadian Individual Vessel Quota (IVQ) fishery in Area 2B and the United States Individual Fishing Quota (IFQ) and Community Development Quota (CDQ) fisheries in Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, and 4E commenced at 12 noon local time on February 29 and closed at 12 noon local time on November 15. The treaty Indian commercial fishery in Area 2A had to occur during the same calendar period (February 29 to November 15).

The Commission adopts biologically-based catch limits for all individual Regulatory Areas and for Areas 4CDE combined. The individual catch limits adopted for Regulatory Areas 4C, 4D, and 4E were determined by the catch sharing plan implemented by the North Pacific Fishery Management Council (NPFMC). This catch sharing plan also allowed Area 4D CDQ to be harvested in Area 4E.

The Pacific Fishery Management Council (PFMC) allocates halibut catch limits between user groups in Area 2A through a catch sharing plan. In 2000, the courts ordered an adjustment in the halibut allocations for the years 2000 through 2007. Therefore in 2004, after the allocation percent by tribal (35%) and non-tribal (65%) was applied, 25,000 pounds of catch limit was transferred from non-tribal to tribal fisheries. The Area 2A licensing regulations have remained the same since 2000. All fishers had to choose between a commercial or sport charter license. Further, commercial fishers had to choose between a license for (1) retaining halibut caught incidentally during the salmon troll fishery, or (2) fishing in the directed commercial halibut fishery (south of Point Chehalis) and/or retaining halibut caught incidentally in the primary sablefish fishery (north of Point Chehalis). The deadline dates for mailing license applications remained the same as previous years: March 31, 2004 for the incidental halibut license for the salmon season, and April 30, 2004 for the directed commercial fishery and the incidental halibut during sablefish fishery license

In Area 2A, the non-treaty directed commercial fishery had 10-hour fishing periods beginning at 8:00 a.m. and closing at 6:00 p.m. local time scheduled for June 23, July 14, July 28, August 11, August 25, September 15, and September 29. Generally, the fishing season dates are set two weeks apart but the second fishing period (July 14th) lagged a week to miss the week of July 4th. The fishery closed when the catch limit was taken.

For the first time, IPHC adopted a combined sport and commercial catch limit (13.8 million pounds) for Area 2B that was to be allocated to the sport and commercial user groups by the DFO. DFO initially allocated 12,141,000 pounds or 88% of the total catch limit to the commercial fishery. Late in the season there was a reallocation of 409,000 pounds, the difference between the 12% sport catch ceiling and the projected recreational catch, from the recreational fleet to the commercial fleet.

The obsolete regulation that made the implementation of the Alaska Subsistence fishery or the Customary and traditional Fishing Regulations in Alaska contingent on NMFS' publications

of regulations for this fishery was removed. Other regulations pertaining to this fishery remained in effect. The dates for this fishery and for the Area 2A treaty Indian subsistence fishery were from January 1 through December 31.

The Commission approved several minor modifications to the tagged fish retention regulations. The changes included defining the tag as an external tag, and clarifying that any fisher at any time can retain a halibut that has an IPHC tag attached. The halibut is required to have the tag attached at the time of landing and made available to the Commission or an authorized officer. Only commercially licensed halibut vessels can sell legal-sized tagged halibut.

The Commission revised the regulation referring to Prohibited Species Donation Program administered by NMFS to state that a person can “retain, possess, and dispose” of halibut from this program. The changes allowed the offal of halibut donated under this program to be used as fish meal and oil.

Lastly, for the U.S. fishery, the requirement to mark the setline buoys was revised to state that in addition to a vessel’s state license or registration number the vessel name could be used, but not as the only marking.

Regulations, catch limits, commercial catch, and seasons for the Area 2A, Metlakatla, and the Quota Share fisheries

For comparison, the commercial catch and catch limits by regulatory area for 1996 through 2004 are shown in Table 1. A detailed summary of the 2004 catch and seasons by regulatory area is provided in Table 2. Prior to 1995, the IPHC research catch was included in the commercial catch and not shown separately. For comparisons between years, total catch should be used. The following paragraphs review catch limits, commercial catch, seasons, and trends for each area.

Area 2A

Area 2A was managed to provide a total allowable catch of 1,480,000 pounds for all user groups (Table 3). The allocation between user groups was recommended to the IPHC by the PFMC, and the IPHC adopted the recommendations. The sport fishery was allocated 569,971 pounds and is discussed in another section of this Report of Assessment and Research Activities (Blood 2005). The treaty Indian fishery was allocated a total of 543,000 pounds (19,400 pounds for ceremonial and subsistence use and 523,600 pounds for their commercial fishery). The PFMC catch sharing plan stated that if the Area 2A total allocation were over 900,000 pounds, the primary limited entry longline sablefish fishery north of Point Chehalis, WA would be allocated part of the Washington sport allocation poundage. Therefore, there was an incidental halibut fishery during this sablefish season with a catch limit of 70,000 pounds. The remaining non-treaty commercial catch limit was 297,029 pounds, with 252,475 pounds allocated to the directed fishery and 44,554 pounds to the incidental catch in the salmon troll fishery. The directed commercial fishery was restricted to waters south of Point Chehalis, WA (46°53’18”N. latitude) and the incidental halibut fishery during the sablefish season was restricted to waters north of Point Chehalis, WA (46°53’18”N. latitude) under regulations promulgated by the NMFS.

IPHC licensed sport charter and commercial vessels in Area 2A. In 2004, the IPHC issued 697 Area 2A vessel licenses: 344 licenses for the incidental commercial catch of halibut during the salmon troll fishery; 215 for the directed commercial fishery and the incidental halibut during sablefish fishery; and 138 for the sport charter fishery.

In the incidental commercial halibut fishery conducted during the salmon troll season, the allowable incidental catch ratio was one halibut per three chinook (*Oncorhynchus tshawytscha*), and an "extra" one halibut regardless of ratio, but the total number of incidental halibut landed per vessel could not exceed 35. The ratio of halibut to number of chinook has remained the same since 2000 but had increased over the previous years, from the one to twenty ratio seen in the first year of the program (1995). The incidental commercial halibut fishery during the salmon season opened on May 1 and closed on July 28 north of Florence, Oregon and closed on July 29th south of Florence, Oregon. The closing dates were chosen to coincide with the salmon troll opening and closing dates. The halibut catch was 4% (1,600 pounds) under the catch limit.

The directed commercial fishery consisted of four 10-hour fishing periods with fishing period limits (Table 4). The fishing period limits by vessel class remained high for the first two openings with H-class vessels receiving 7,000 pounds. The last two openings had lower limits with H-class vessels receiving 2,000-2,500. The total directed commercial catch was 3% (6,500 pounds) under the catch limit.

The incidental halibut fishery during the limited-entry sablefish season opened May 1 and closed at the end of the sablefish season on October 31. The catch limit has been 70,000 pounds for two years, compared to 88,389 pounds in 2002. The decrease in catch limit was due to a change in allocation between users by the PFMC. The catch was close to the catch limit, within 3% or 2,000 pounds.

In 2004, the Treaty Indian tribes agreed on a new management plan that included allocation to tribes or a group of tribes. In the tribal fishery, 75% of the commercial catch limit was allocated to the tribes or tribal groups and occurred between February 29 and July 30. The remaining catch limit (25%) was open to all tribes and had per vessel per day limits of 500 or 250 pounds. The total tribal commercial catch was within 1% of the catch limit.

Area 2C Metlakatla fishery

The Metlakatla Indian Community was authorized by the United States government to conduct a commercial halibut fishery within the Annette Islands Reserve. Fourteen 48-hour fishing periods took place between April 16 and October 17, producing a total catch of 90,000 pounds (Table 5) which was included in the Area 2C commercial catch. The catch was similar to last year's catch of 82,000 pounds, and the total catch has varied over time from a high of 126,000 pounds in 1996 to a low of 12,000 pounds in 1998.

The Quota Share fisheries

The Quota Share (QS) fisheries of Area 2B and Alaska were open from February 29 to November 15. The following paragraphs discuss the fisheries by area and landing patterns.

Area 2B

As previously mentioned, IPHC adopted a combined sport and commercial catch limit of 13.8 million pounds for Area 2B that was to be allocated to the user groups by the DFO. The total catch limit for the commercial fleet was 12.55 million pounds with an additional 140,000 pounds available from the 2003 underage/overage program. From the catch limit, each vessel was allocated a fixed poundage of halibut, or an IVQ, as calculated by the DFO. The Area 2B catch of 12.086 million pounds was within 4% of the catch limit.

When the initial IVQ program was implemented in 1991, four hundred and thirty-five vessels

received IVQs. Each initial IVQ was split into two shares called blocks. Starting in 1993, the blocks could be transferred between vessels, on the condition that a single vessel could fish a maximum of four blocks. The fleet size decreased with the implementation of the transfer program; however, it remained at around 280 vessels from 1995 to 1998. In 1999, subject to minimum and maximum holdings, vessel owners were permitted to make unlimited permanent or temporary reallocation of halibut IVQ. Since 1999, the number of active vessels has varied from year to year, ranging between a high of 257 (in 1999) and a low of 214 (in 2002). In 2004, just over nine million pounds or 71% of the catch limit was transferred between vessels, with 384,351 pounds of it transferred permanently.

The Native Communal Commercial Fishing Program (F licenses) had 19 active vessels in 2004 compared to 17 in 2003. Total landings, from 85 separate deliveries, amounted to 503,803 pounds, which is slightly more than 2003 landings.

Several small sub-areas in Area 2B were closed to halibut fishing to protect localized stocks of non-halibut species and to provide improved access to food fish for the First Nations' communities.

Alaska

The IFQ halibut and sablefish fisheries have been in effect in Alaska since 1995. NMFS allocated halibut QS to recipients by IPHC regulatory area. Quota share transfers were permitted with restrictions on the amount of QS a person could hold and the amount that could be fished per vessel. In early December 2004, NMFS reported that 3,332 persons held quota shares, down from the initial 4,830 persons at the start of the program.

The total 2004 catch from the IFQ halibut fishery for the waters off of Alaska was 59.1 million pounds, 4% under the catch limit. For Areas 2C, 3A, 3B, and 4A, the commercial QS catches were within 2% to 3% of the catch limits and Areas 4B catch was within 5% of the catch limit. Since 2002, the IFQ regulations have allowed 4D CDQ to be taken in Area 4E. This was not a biological concern to the IPHC because Areas 4CDE are managed as one stock. This was a change from 2001, as a NMFS enforcement waiver was given allowing CDQ from Area 4E to be taken in 4D, or 4D CDQ to be taken in Area 4E. The combined Area 4DE catch was 6% under the combined limit. Area 4C was the one area where the catch was substantially under the catch limit, with 55% of the Area 4C catch limit taken. Since the implementation of the QS fishery, this area has always had catches under the catch limit. From 2002-2004, 44% to 60% of the catch limit were landed, while in previous years the range was from 79%-88% of the catch limit being caught. There was one exception, in 1997 when the catch was 5% under the catch limit (1.1 million pounds).

Landing patterns and highlights

The 2004 average ex-vessel price was similar to 2003 at around \$3.00 per pound (U.S. dollars).

Homer received over 10.6 million pounds of halibut, or about 17% of the 59.0 million pounds of commercial Alaskan catch. Kodiak and Seward were the second and third largest ports, each moving between 11%-14% of the Alaskan commercial catch. In southeast Alaska, Sitka received 3.7 million pounds, Juneau 3.3 million pounds, and Petersburg 3.0 millions pounds. Only 2.7% of the QS catch was landed outside of Alaska.

A total of 1,072 commercial trips from Area 2B were delivered into 14 different ports in 2003. Several small ports (Bella Coola, Campbell River, Comox, Port McNeill, Sooke) that received fewer than three deliveries in 2003 received no deliveries in 2004. However, the three ports of Prince Rupert/Port Edward, Port Hardy, and Vancouver were the major landing locations, again receiving about 88% of the Area 2B commercial catch. Port Hardy and Prince Rupert/Port Edward each received about 40% of the B.C. commercial landings.

The QS fishery landings were spread over, essentially, nine months of the year (Table 6). On a month-to-month comparison with the 2003 fishery, May was the still busiest month for Alaska landings, as it has been for the last four years. May landings, represented 17.2% of the 2004 total catch, which was an increase from 15.8% in 2003. As in 2003, March was the busiest month for poundage delivered in British Columbia. In 2003, 17.6% of the overall catch was landed in March compared with 15.9% of the 2003 catch being delivered during the same month last year.

The landing of live halibut from Area 2B was legally allowed by DFO. In 2004, live fish landings totaled approximately 13,600 pounds compared to a low of 7,900 pounds in 1998 and a high of 103,000 pounds in 1999. Six vessels made a total of 17 landings with live halibut and no halibut were penned. The landings were made in Port Hardy and Prince Rupert.

Electronic reporting project for Alaska

Since 2002, IPHC, ADF&G, and NMFS staffs have worked with contractors hired by Pacific States Marine Fisheries Commission (PSMFC) to analyze and work towards developing a cooperative interagency electronic fishery information collection and management program in Alaska. The project has included a needs assessment, technology demonstrator, several interagency meetings to the review program, and a meeting with the agency Directors to discuss a Memorandum of Understanding for the implemented program. The initial goal was to develop a program for reporting groundfish and halibut landings in Alaska. In 2003, the goal changed to include electronic reporting for the Bering Sea and Aleutian Island (BSAI) crab as the NPFMC adopted a plan to implement a crab rationalization fishery. In 2004, the interagency steering committee worked with a contractor hired by the PSMFC to design an electronic reporting system for BSAI crab, statewide groundfish and halibut that would be implemented for the rationalized crab fishing in August 2005. The groundfish and halibut reporting will occur after the implementation for the crab fishery and likely at the beginning of 2006.

References

Blood, C. L. 2005. 2004 sport fishery. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2004: this volume.

Table 1. Commercial catch (including IPHC research catch) and catch limits of Pacific halibut by IPHC regulatory area (in thousands of pounds, net weight), 1996 - 2004.

Regulatory Area	Commercial Catch ¹								
	1996	1997	1998	1999	2000 ²	2001	2002	2003 ²	2004 ³
2A ⁴	296	413	460	450	482	680	851	819	892
2B	9,545	12,420	13,172	12,705	10,811	10,288	12,074	11,789	12,161
2C	8,872	9,920	10,196	10,143	8,445	8,403	8,602	8,410	10,295
3A	19,693	24,628	25,698	25,316	19,288	21,541	23,131	22,748	25,052
3B	3,662	9,072	11,161	13,835	15,413	16,336	17,313	17,231	15,614
4A	1,699	2,907	3,418	4,369	5,155	5,015	5,091	5,024	3,476
4B	2,069	3,318	2,901	3,571	4,692	4,466	4,080	3,863	2,708
4C	680	1,117	1,256	1,762	1,737	1,647	1,210	886	956
4D	706	1,152	1,308	1,891	1,931	1,844 ⁵	1,753 ⁵	1,965 ⁵	1,667 ⁵
4E	120	251	188	264	351	479 ⁵	555 ⁵	415 ⁵	310 ⁵
Total	47,342	65,198	69,758	74,306	68,305	70,699	74,660	73,141	73,131
Regulatory Area	Commercial Catch Limits ⁶								
	1996	1997	1998	1999	2000	2001	2002	2003	2004
2A ⁴	275	374.2	440.9	412.5	468.1	681.4	817.9	817.9	890.4
2B	9,520	12,500	13,000	12,100	10,600	10,510	11,750	11,750	12,550
2C	9,000	10,000	10,500	10,490	8,400	8,780	8,500	8,500	10,500
3A	20,000	25,000	26,000	24,670	18,310	21,890	22,630	22,630	25,060
3B	3,700	9,000	11,000	13,370	15,030	16,530	17,130	17,130	15,600
4A	1,950	2,940	3,500	4,240	4,970	4,970	4,970	4,970	3,470
4B	2,310	3,480	3,500	3,980	4,910	4,910	4,180	4,180	2,810
4C	770	1,160	1,590	2,030	2,030	2,030	2,030	2,030	1,720
4D	770	1,160	1,590	2,030	2,030	2,030	2,030	2,030	1,720
4E	120	260	320	390	390	390	390	390	345
Total	48,415	65,874.2	71,440.9	73,712.6	67,138.1	72,721.4	74,427.9	74,427.9	74,665.4

¹ Commercial catch includes IPHC research catch and in Area 2C, the Metlakatla fishery catch.

² Poundage figures have been updated from previous publications.

³ Preliminary.

⁴ Does not include treaty Indian ceremonial and subsistence fish.

⁵ Areas 4D CDQ could be fished in Area 4E by NMFS enforcement waiver (2001) and IFQ regulation (since 2002).

⁶ Additional carryover from the underage/overage plan for the QS programs not included.

Table 2. Commercial fishing periods, number of fishing days, catch limit, commercial, research and total catch (thousands of pounds, net weight) by regulatory area for the 2004 Pacific halibut commercial fishery (preliminary, landing as of November 23, 2004).

Area	Fishing Period	No. Of Days	Catch Limit	Commercial Catch	Research Catch	Total
2A treaty Indian treaty Indian total	2/29 – 7/30	153		377		
	Restricted: 3/21 – 4/30	41		127		
	Restricted: 8/11-12; 8/17-20 8/30-9/1; 9/6-8	8		16		
			523.6	520		520
2A Commercial Incidental in Salmon fishery	May 1 – July 28/29	90	44.6	43		43
Incidental in Sablefish fishery	May 1- Oct 31	184	70.0	68		68
Directed	June 23 ¹	10-hrs		110		
	July 14 ¹	“		95		
	July 28 ¹	“		27		
	August 11 ¹	“		14		
Commercial total			252.5	246	15	261
2A Total			890.4	877	15	892
2B	2/29 – 11/15	246	12,550 ²	12,086 ³	75	12,161
2C	2/29 – 11/15	246	10,500 ⁴	10,179 ⁵	116	10,295
3A	2/29 – 11/15	246	25,060 ⁴	24,602	450	25,052
3B	2/29 – 11/15	246	15,600 ⁴	15,334	280	15,614
4A	2/29 – 11/15	246	3,470 ⁴	3,392	84	3,476
4B	2/29 – 11/15	246	2,810 ⁴	2,672	36	2,708
4C	2/29 – 11/15	246	1,720 ⁴	956		956
4D	2/29 – 11/15	246	1,720 ⁴	1,633 ⁶	34	1,667
4E	2/29 – 11/15	246	345	310 ⁶		310
Alaska Total			61,225	59,078	1,000	60,078
Total				72,041	1,090	73,131

¹ Fishing period limits by vessel class.

² Includes two allocations to commercial fleet of 12,141,000 and 409,000 pounds; an additional 140,000 pounds available as carryover from 2003.

³ Includes the pounds that were landed by Native communal commercial licenses (F licenses).

⁴ Additional net carryover pounds (thousands) from the underage/overage program were 2C = 159; 3A = 136; 3B = 84; 4A = 63; 4B = 91; 4C = 91 and for 4D a negative balance of 10,380.

⁵ Includes 90,000 pounds taken by Metlakatla Indians during additional fishing within reservation waters.

⁶ Areas 4D and 4E CDQ can be fished in either area regardless of quota share designation NMFS enforcement waiver.

Table 3. The Area 2A 2004 catch limits allocated by the Pacific Fishery Management Council catch sharing plan and preliminary catch estimates (pounds).

Area	Catch Limit	Catch
Non-treaty directed commercial	252,475	246,000
Non-treaty incidental commercial with salmon troll fishery	44,554	43,000
Non-treaty incidental commercial with sablefish fishery	70,000	68,000
Treaty Indian commercial	523,600	520,000
Treaty Indian ceremonial and subsistence	19,400	19,400
Sport - North of Columbia River	272,942	244,160
Sport - South of Columbia River	297,029	242,617
Total allocation	1,480,000	1,383,177
IPHC research catch		15,000
Total	1,480,000	1,398,177

Table 4. The fishing period limits (net weight) by vessel class used in the 2004 directed commercial fishery in Area 2A.

Vessel Class		Fishing Periods (Pounds)			
Letter	Feet	June 23	July 14	July 28	August 11
A	0-25	590	590	210	200
B	26-30	735	735	265	210
C	31-35	1,175	1,175	420	335
D	36-40	3,240	3,240	1,160	925
E	42-45	3,485	3,485	1,245	995
F	46-50	4,170	4,170	1,490	1,190
G	51-55	4,655	4,655	1,665	1,330
H	56+	7,000	7,000	2,500	2,000

Table 5. Metlakatla community fishing periods, number of vessels, and halibut catch (net weight), 2004.

Fishing Period Dates	Number Of Vessels	Catch (Pounds)
April 16 – 18	9	3,870
April 30 - May 2	3	548
May 14 – 16	14	4,853
May 28 – 30	14	6,207
June 11 – 13	12	4,659
June 25 – 27	17	13,434
July 9 – 11	19	14,747
July 23 – 25	20	13,647
August 6 – 8	17	6,626
August 20 – 22	16	10,967
September 3 – 5	12	7,303
September 17 – 19	7	2,080
October 1 – 3	3	591
October 15 – 17	0	0
14 Fishing Periods		89,532

Table 6. The total pounds (thousands, net weight) of 2004 commercial landings (not including research catch) of Pacific halibut for Alaska and British Columbia by regulatory area and month (preliminary).

Regulatory Area	March ¹	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
2B	2,131	1,532	1,347	849	1,153	1,503	1,431	1,354	786	12,068
2C	1,287	1,601	1,893	1,445	1,091	1,024	730	822	286	10,179
3A	3,549	3,399	4,561	3,137	2,200	2,839	2,309	1,955	653	24,602
3B	630	1,124	3,132	2,817	2,424	2,558	1,547	724	378	15,334
4A	20	27	351	496	970	806	465	224	33	3,392
4B ²	53	29	208	462	573	819	421	56	51	2,672
4C ²	1	-	-	253	330	172	118	76	6	956
4D ²	-	18	-	61	631	706	196	21	-	1,633
4E ²	-	-	34	110	79	49	34	4	-	310
Alaska Total	5,540	6,198	10,179	8,781	8,298	8,973	5,820	3,882	1,407	59,078
Total	7,689	7,732	11,526	9,657	9,494	10,537	7,264	5,237	2,193	71,146

¹ March includes deliveries made on February 29

² Based on NMFS monthly catch ratios of IFQ landings

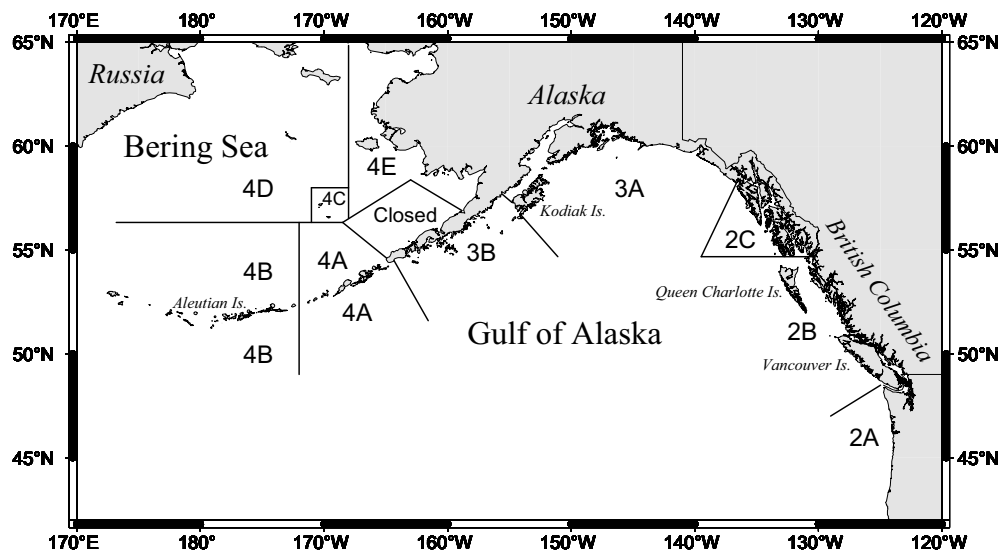


Figure 1. IPHC regulatory areas for the 2004 fishery.

2004 Sport Fishery

Calvin L. Blood

Abstract

Estimates of 1977-2003 Pacific halibut sport fishery landings, with projections for 2004, are summarized. The 2003 sport harvest is the highest ever recorded. Landings in Area 2B, 2C and 3A are the second highest recorded for each area. Current year's harvest and catch performance for Area 2A are also reported.

Regulations

Sport fishing regulations in Alaska and British Columbia remained the same as those that were in effect in 2003. Allocative regulations for sport, commercial, and treaty Indian fisheries in Area 2A specified by the Pacific Fishery Management Council (PFMC) as a Catch Sharing Plan (Plan) were adopted by the International Pacific Halibut Commission (IPHC) at the 2004 IPHC Annual Meeting. In accordance with United States domestic law, the Plan was published in the Federal Register with a request for public comment. The sport fishery in Area 2A was divided into several subareas within which seasons were managed by catch limits (Tables 1 and 2). Charter vessels were required to obtain a license from the IPHC to possess halibut during open seasons. Vessels were also required to declare whether they intended to operate as a sport charter or commercial vessel; licenses could be held for only one category. Minor modifications to the Plan were implemented to facilitate management strategies. Specific area-closures were also in effect to protect certain species of rockfish (*Sebastes* spp.) on sport halibut fishing grounds.

Harvest estimations

The 2004 Area 2A harvest estimates for the various subareas were provided by the Oregon Department of Fish and Wildlife (ODFW) and Washington Department of Fish and Wildlife (WDFW) from in-season creel census estimates. The exception to this was Washington Inside Waters (WIW), which was assessed by a post-season phone survey. The Area 2B harvest estimate was provided by the Canadian Department of Fisheries and Oceans (DFO) and modified by the IPHC to include the Canadian catch landed at Neah Bay, Washington. The Alaska Department of Fish and Game (ADF&G) typically provides final harvest estimates for the previous year for Areas 2C, 3, and 4. Current year projections are made annually by ADF&G staff for the IPHC, and are based on a creel survey in Area 2C, and port sampling in Area 3A. The Area 3A estimate for 2004 was based on a linear projection of halibut numbers harvested during the most recent five annual harvests, excluding Prince William Sound (PWS). Since 2001, independent harvest estimates have been available for eastern and western PWS. Because fishery growth has been more rapid in western PWS than in eastern PWS, harvest was separately projected for each of these areas from the last three years of estimates (Scott Meyer, ADF&G, Division of Sport Fish, 3298 Douglas Place, Homer, Alaska 99603-8027, personal communication). The resultant numbers

were converted to pounds net weight after applying the respective 2004 average weight for each area (Table 4). Harvested biomass in Area 2C was projected based on a linear relationship between Statewide Harvest Survey (SWHS) harvest estimates and the respective combined in-season creel survey estimates for Ketchikan, Juneau, and Sitka during the period 1992-2003. Proportions of the catch from each sampled area based on the final 2003 SWHS estimates were used to determine the overall area specific harvests (SWHS Areas A-G; Walker et al. 2003) for 2004, and the respective charter/private catch ratios within each of those area totals were applied to determine the number of fish harvested within each user group. Estimates of average individual fish weight (hereafter, "average weight") for the current year were then applied to each of those projected harvests, and the harvests summed to generate the overall Area 2C projection of harvested biomass. In the past, Juneau average weights were applied to the harvest in Glacier Bay to act as a surrogate since no sampling occurred there. But because of the commencement of a catch sampling program in Gustavus and Elfin Cove in 2002, the Gustavus/Elfin Cove average weight is now being applied to Glacier Bay harvests. Juneau average weights were still used as the surrogate for Haines/Skagway harvests (Table 4) (Mike Jaenicke, ADF&G, Division of Sport Fish, Box 240020, Douglas, Alaska 99824-0020, pers. comm.). The estimated sport landings for 2003 are the highest on record, with Areas 2B, 2C and 3A reaching their second highest ever landings.

Harvest estimates for Areas 3B and 4 were based on a linear projection of the 1999-2003 harvest estimated from the SWHS. The average weight from 2003 for Kodiak, the nearest sampled port, was applied to the projected numbers of fish harvested in each Area to generate the 2004 estimated net harvest weights (Table 4).

Area 2A

The estimated harvest from Area 2A in 2004 was 486,778 pounds (Table 2). This was about 15 percent under the catch limit of 569,971 pounds. The harvest estimate for WIW was 49,577 pounds, 26,643 pounds under the 76,220 pound catch limit. The resulting catch estimate is considerably lower than recorded last year. The WIW season was split as it was in 2002 so that the area east of Low Point opened three weeks sooner than the area west of Low Point (Michele K. Culver, WDFW, 48 Devonshire Road, Montesano, Washington 98563-9618, pers. comm.). Subsequently, the area east of Low Point closed three weeks earlier than the area west of Low Point. The Washington North Coast fishery closed within an estimated 2,628 pounds of the 126,857 pound quota. The North Coast average weight of 21.1 pounds through May was slightly lower than the 24.2 pound average weight during July. The Washington South Coast fishery, centered principally out of Westport, closed an estimated 1,258 pounds above the quota. The average weight of South Coast halibut was 18.2 pounds. The Columbia River area closed slightly more than 500 pounds over its quota and fishing days were far fewer than in previous years. Whereas much of this catch in previous years was attributed to the Washington fleet, primarily from Ilwaco, high interest emerged on the Oregon side this year, as well. Pacific halibut caught in the Columbia River area averaged about 17 pounds on the Washington side, while halibut measured in the Oregon ports weighed about two pounds more. As in previous years, a very high proportion of the catch was sampled to provide the average weights for their respective areas.

As in 2003, the Oregon sport halibut fishery harvest was considerably under the overall area quota and resulted in several more open days than were expected (Don Bodenmiller, ODFW, Marine Region, 2040 SE Marine Science Drive, Newport, Oregon 97365, pers. comm.). Halibut fishing was, once again, open for a considerably longer period than last year because an abundant

source of salmon (*Onchorynchus* spp.) offered a more desired alternative fishery. Albacore (*Thunnus alalunga*) fishing also diverted anglers away from halibut later in the season. Quota remaining from the early season Oregon Central Coast fishery provided more fishing opportunity in August, September, and October. The overall average weight for the Oregon sport halibut fishery was 20 pounds in 2004, nearly the same as in 2003. The nearshore fishery also under-harvested its quota by a considerable margin, catching a mere nine percent of the 22,574 pounds allowed. As in Washington, a significant portion of the available harvest was measured to determine the average weight.

Area 2B

The catch in numbers of halibut for 2003 was provided to the Commission by the Pacific Region of DFO. This catch estimate was based on a methodology developed in 1998 by King and Gjernes (1999). Since average weight information was lacking from British Columbia waters, average weights compiled in adjacent areas were used to expand the catch in numbers of fish to total pounds. The catch in the northern DFO region (statistical areas 1-11; King and Gjernes 1999) was expanded by an average weight from Area 2C (preferably the Ketchikan area) and the catch in the southern DFO region (statistical areas 12-29) King and Gjernes (1999) was expanded by the average weight from the Neah Bay, Washington catch.

The 2004 projected harvest (Table 4) was estimated by using a linear regression to predict the catch in numbers. The catch from the years 1999-2003 was summarized by DFO statistical areas 1-11 and 12-29 and extrapolated by linear regression. The resultant catch in numbers was then expanded into pounds by the aforementioned average weights from Alaska and Washington for 2004. The Commission will use average weights from British Columbia waters when they become available.

In 2004, Washington anglers caught 9,277 halibut in Canadian waters and landed them in Neah Bay, a number that is over 1,500 fewer than in 2003 and comparable to the number harvested in 2002. Using the average weight of 21.6 pounds provided by WDFW, the estimated harvest was 200,662 pounds.

Area 2C

The updated 2003 Area 2C harvest was estimated to be 2.258 million pounds net weight (Table 3) and the 2004 projected harvest was estimated to be 2.306 million pounds (Table 4). The numbers of fish harvested were identified by SWHS area and were converted to net weight using the average weight from each respective user group. Length data were gathered in Ketchikan, Craig, Petersburg, Wrangell, Sitka, and Juneau. In 2002, a catch sampling program was initiated in Gustavus so the Gustavus average weight is now applied to Glacier Bay. Neither Haines nor Skagway have been sampled for length information, so their harvests have historically been projected using Juneau average weights as a surrogate. The overall average weight for Area 2C in 2003 was 18.9 pounds net weight and preliminary indications showed the average net weight to have been 19.6 pounds in 2004.

Area 3A

The Area 3A projected harvest biomass for 2004 was 4.743 million pounds (Table 3 and 4). The updated 2003 harvest was corrected to 5.427 million pounds. As in Area 2C, when SWHS numbers become available, the 2004 catch estimate will be updated. The Area 3A harvest biomass

was also estimated for each user group from numbers supplied by the SWHS and average weight generated from length data collected from the primary ports of sport landings. The sampled ports for 2004 included Yakutat, Whittier, Valdez, Seward, Homer, Deep Creek and Anchor Point beaches, and Kodiak. Care was taken to properly account for harvests by the charter, private, and military recreation camps. The average weight for 2003 was 19.3 pounds. Preliminary indications suggest the average net weight in 2004 was moderately lower at 16.8 pounds.

Areas 3B and 4

As in Areas 2C and 3A, SWHS numbers are not yet available for Areas 3B and 4 for 2004 so an estimate of the catch was made. When the survey data become available, harvest figures will be updated. In 2003 and 2004, the average weight obtained from ADF&G sport fish sampling on Kodiak Island was used to estimate the Areas 3B and 4 harvests in pounds. Since the average weight has apparently decreased from 23.1 pounds to 19.6 pounds, the projected harvest for 2004 also showed a decrease (Tables 3 and 4). This may or may not reflect the actual catches. Anecdotal information gleaned from sport fish publications and conversations with local charter operators suggested that average weight may have been quite high in Dutch Harbor and Unalaska; therefore, the harvest in Areas 3B and 4 may have been higher than reported in this document.

References

- King, J. R. and Gjernes, T. W. 1999. Estimate of 1998 recreational catch in British Columbia waters. Can. Stock Assessment Secretariat Res. Doc. 99/121.
- Walker, R. J., Olnes, C., Sundet, K., Howe, A.L., and Bingham, A. E. 2003. Participation, catch, and harvest in Alaska sport fisheries during 2000. Alaska Dept. Fish Game, Fish. Data Ser. No. 03-05, Anchorage.

Table 1. Fishing dates, opportunity, size limits, and bag limits for the 2004 Pacific halibut sport fishery.

Area	Fishing dates	Fishing days	Days open	Size limit	Bag limit
2A					
WA Inside Waters (east of Low Point)	May 6 –July 24	58	5 (Thur-Mon)	None	1
WA Inside Waters (Low Point to Sekiu River)	May 27-Aug 14	58	5 (Thur-Mon)	None	1
WA North Coast (Sekiu River to Queets River)	May 11-20	8	5 (Tues-Sat)	None	1
	May 29	1	Sat	None	1
	June 15-19	5	5 (Tues-Sat)	None	1
WA South Coast (all depths; Queets River to Leadbetter Point)	May 2-July 1	45	5 (Sun-Thur)	None	1
	July 2-3	2	7	None	1
Columbia River (Leadbetter Point to Cape Falcon)	May 1-July 25	86	7	First @ 32"	1
OR Central Coast (Spring, all depths; Cape Falcon to Humbug Mt.)	May 13-15	3	3 (Th-Sat)	First @ 32"	1
	May 20-22	3	3 (Th-Sat)	First @ 32"	1
	May 27-29	3	3 (Th-Sat)	First @ 32"	1
	June 10-12	3	3 (Th-Sat)	First @ 32"	1
	June 25-26	2	2 (Fri-Sat)	First @ 32"	1
	July 10	1	Sat	First @ 32"	1
	July 24	1	Sat	First @ 32"	1
	August 6-7	2	2 (Fri-Sat)	First @ 32"	1
	August 20-21	2	2 (Fri-Sat)	First @ 32"	1
	Sept 3-4	2	2 (Fri-Sat)	First @ 32"	1
OR Central Coast (Summer/Fall, all depths; Cape Falcon to Humbug Mt.)	Sept 17-18	2	2 (Fri-Sat)	First @ 32"	1
	Sept 24-26	3	3 (Fri-Sun)	> 32"	2
	Oct 1-3	3	3 (Fri-Sun)	> 32"	2
	Oct 8-10	3	3 (Fri-Sun)	> 32"	2
	Oct 15-17	3	3 (Fri-Sun)	> 32"	2
	Oct 22-24	3	3 (Fri-Sun)	> 32"	2
	Oct 29-31	3	3 (Fri-Sun)	> 32"	2
	May 1-Sept 21	144	7	First @ 32"	1
	Sept 22-Oct 31	40	7	> 32"	2
	OR Coast (<40 fathoms; Cape Falcon to Humbug Mtn.)	May 1-Oct 31	194	7	First @ 32"
OR/CA (south of Humbug Mt.)	Feb 1-Dec 31	335	7	No	2
2B, 2C, 3 and 4					

Table 2. 2004 harvest allocations and catch estimates (in pounds, net weight) by subarea within Regulatory Area 2A

Subarea	Allocation	Catch Estimate	Over/under
WA Inside Waters	76,220	49,577	-26,643
WA North Coast	126,857	124,229	-2,628
WA South Coast	61,565	62,823	+1,258
Columbia River	14,241	14,761	+520
OR Central Coast (all depths)	194,703	186,209	-8,494
OR Coast	64,901	38,640	-26,661
OR Coast (<40 fathoms)	22,574	2,028	-20,546
OR/CA (south of Humbug Mt.)	8,911	8,911	0

Table 3. Estimated harvest by sport fishers (millions of pounds, net weight) by IPHC regulatory area, 1977-2004.

Year	Area 2A	Area 2B	Area 2C	Area 3A	Area 3B	Area 4	Total
1977	0.013	0.008	0.072	0.196			0.289
1978	0.010	0.004	0.082	0.282			0.378
1979	0.015	0.009	0.174	0.365			0.563
1980	0.019	0.006	0.332	0.488			0.845
1981	0.019	0.012	0.318	0.751		0.012	1.112
1982	0.050	0.033	0.489	0.716		0.011	1.299
1983	0.063	0.052	0.553	0.945		0.003	1.616
1984	0.118	0.062	0.621	1.026		0.013	1.840
1985	0.193	0.262	0.682	1.210		0.008	2.355
1986	0.333	0.186	0.730	1.908		0.020	3.177
1987	0.446	0.264	0.780	1.989		0.030	3.509
1988	0.249	0.252	1.076	3.264		0.036	4.877
1989	0.327	0.318	1.559	3.005		0.024	5.233
1990	0.197	0.381	1.330	3.638		0.040	5.586
1991	0.158	0.292	1.654	4.264	0.014	0.127	6.509
1992	0.250	0.290	1.668	3.899	0.029	0.043	6.179
1993	0.246	0.328	1.811	5.265	0.018	0.057	7.725
1994	0.186	0.328	2.001	4.487	0.021	0.042	7.065
1995	0.236	0.887	1.759	4.511	0.022	0.055	7.470
1996	0.229	0.887	2.129	4.740	0.021	0.077	8.084
1997	0.355	0.887	2.172	5.514	0.028	0.069	9.025
1998	0.383	0.887	2.501	4.702	0.017	0.096	8.585
1999	0.338	0.859	1.843	4.228	0.017	0.094	7.379
2000	0.344	1.021	2.258	5.305	0.015	0.073	9.017
2001	0.446	1.015	1.925	4.675	0.016	0.029	8.106
2002	0.399	1.260	2.090	4.202	0.013	0.048	8.011
2003	0.404	1.218	2.258	5.427	0.009	0.031	9.348
2004 ¹	0.487	1.373	2.306	4.743	0.009	0.015	8.933

¹ Only Area 2A is current; all other areas are projected harvests.

Table 4. 2004 Projections for Areas 2B, 2C, 3A, 3B, and 4 sport halibut harvests.

Regulatory Area	Areas	Numbers projected	Average weight	Net weight in pounds
2B	DFO Areas 1-11	42,895	18.8	806,426
	DFO Areas 12-29	16,906	21.6	365,677
	WDF&W Neah Bay	9,277	21.6	200,662
	Total	69,078		1,372,764
2C	Southeast Alaska	117,496	19.6	2,306,000
3A	Southcentral Alaska	281,927	16.8	4,743,000
3B	Kodiak Island West	465	19.6	9,114
4	Bering Sea/Aleutians	785	19.6	15,386
	Total	400,673		7,073,500

Wastage in the 2004 Pacific halibut fishery

Heather L. Gilroy

Abstract

Wastage in the commercial fishery includes legal-sized halibut killed by lost and abandoned longline gear and sublegal-sized halibut that are discarded and die. Information on lost gear is collected through logbook interviews and fishing logs received by mail. The ratio of sublegal- to legal-sized halibut is determined from the International Pacific Halibut Commission (IPHC) stock assessment charters. Wastage estimates from the commercial halibut fishery from 1985-2004 are presented.

Overview

The removals of Pacific halibut from the population accounted for in the stock assessment include commercial and sport catch, personal use (subsistence), bycatch, and wastage. Since 1997, the commercial fishery wastage estimate included in the stock assessment has represented legal-sized removals occurring from lost or abandoned gear. The mortality of discarded sublegal halibut is accounted for when setting the exploitation rate. Prior to 1997, wastage from the mortality of discarded sublegal halibut was deducted in setting the setline constant exploitation yield (CEY). The mortality of discarded sublegal halibut is reported in this paper so there will be a record of the amount, although it will not be shown under total removals in the 2004 stock assessment tables. The 2004 data are preliminary and the 2003 data were recalculated using the final catch figures.

Wastage can also occur if more gear is set than is needed to obtain fishing period limits in Area 2A, individual vessel quota (IVQ) in Area 2B, and individual fishing quota (IFQ) and community development quota (CDQ) in the Alaska regulatory areas. In addition, halibut may occasionally be discarded at sea due to poor fish quality, which can result from sand flea, shark, or other predation. The amount of legal-sized halibut caught in excess of quota, or catch limits, and discarded at sea is recorded during logbook interviews. At this time, these amounts are reviewed and over-limit legal-sized discards are not currently included in the wastage removals.

Wastage from lost or abandoned gear

Information on the amount of gear lost or abandoned in the halibut longline fishery was collected through logbook interviews or from fishing logs received via mail. Fishery-wide estimates are extrapolated from qualified logbook catch and effort statistics to total catch values. Gear types vary considerably as to the length of skates, hook size, and hook spacing but the data are standardized. Only this standardized gear is used in subsequent calculations. Some log data cannot be standardized and are not used in the calculation of effective skates because there are missing data or because the gear fishes differently. With the IFQ fishery in Alaska and the Area 2A incidental catch during the sablefish longline fishery, there are mixed halibut and sablefish trips as well as trips which target sablefish and land incidentally-caught halibut. Sablefish gear is

considered a non-standard halibut gear that fishes differently, and therefore is not included in the calculation.

Wastage is calculated from the ratio of effective skates lost to effective skates hauled and multiplied by total catch. The calculation is performed using both fixed hook and snap gear in all areas. Prior to 1998, the gear type used for the wastage calculation was the gear type used to calculate catch per unit effort (fixed hook gear was used in Alaska and a combination of fixed hook and snap gear was used in B.C. and Area 2A). The Area 2A catch includes the non-treaty directed commercial catch, treaty commercial catch, and incidental catch during the longline sablefish fishery. Wastage from lost or abandoned gear was first calculated in 1985 and the wastage estimates by regulatory area are provided in Table 1.

The 2004 ratios of effective skates lost to effective skates hauled by regulatory area are as follows: Area 2A = 0.0; Area 2B = 0.002; Area 2C = 0.003; Area 3A = 0.003; Area 3B = 0.002; and Area 4 = 0.004. Since the implementation of the quota share fisheries in 1995, the ratios have fluctuated slightly between years, but are still lower than they were during the derby fisheries. No lost gear was reported in Area 2A, therefore, no wastage is being reported.

Discard mortality of sublegal halibut

Discussions at the 1999 Annual Meeting resulted in changes to the calculations for estimating wastage from sublegal-sized halibut. It was suggested that the grid survey catch ratio of sublegal to legal-sized fish did not represent that of the commercial fleet as the survey vessels catch more sublegal fish. Prior to 2000, the amount of sublegal halibut caught in the commercial fishery was estimated from the setline survey catch ratio of sublegal to legal pounds. The current method used to estimate sublegal catch by the commercial fleet is to calculate the sublegal/legal ratio from the grid survey stations that represent the highest one-third of the legal catch weight. The ratios of sublegal to legal pounds from these data were calculated from the 2004 grid survey data and are as follows: Area 2A = 0.08; Area 2B = 0.15; Area 2C = 0.17; Area 3A = 0.17; Area 3B = 0.29; and Area 4 = 0.09. These adjusted ratios are 56 to 84 percent of the ratios resulting from calculations using all stations. In comparison to the 2003 ratios, the 2004 ratios of sublegal to legal pounds were similar in most areas, with an increase in Area 2C and a decrease in Area 2A. The discard mortality rate that has been used since 1995 is 16 percent for all areas. This rate was originally based on the bycatch discard mortality observations of 1992 to 1993 in the Bering Sea/Aleutians sablefish hook and line fishery, where the pace is similar to that of the quota fisheries. The observer data from the 1996 and 1997 sablefish IFQ fishery also had a 16 percent discard mortality rate, confirming that this is an appropriate rate to use at this time. The 16 percent discard mortality rate has been used since 1991 for the Canadian IVQ fishery. For the 1993 and 1994 United States fisheries, a rate of 25 percent was used, based on observations from the 1992-1993 Gulf of Alaska sablefish fishery.

To calculate the pounds of sublegal-sized halibut in the commercial fishery, the ratios of sublegal halibut from the surveys were multiplied by the estimated commercial catch in each regulatory area. The resulting poundage was then multiplied by the discard mortality rate (16 percent) to obtain the estimated poundage of sublegal-sized halibut killed in the commercial fishery (Table 2).

Table 1. Estimates of legal-sized Pacific halibut, in thousands of pounds (net weight), killed by lost and abandoned longline gear in the commercial halibut fishery by IPHC regulatory area for 1985 through 2004.

Year	Regulatory Area						Total
	2A	2B	2C	3A	3B	4	
1985	n/a	n/a	n/a	n/a	n/a	n/a	1,600
1986	n/a	n/a	n/a	n/a	n/a	n/a	3,200
1987	3	173	368	1,580	341	257	2,722
1988	<1	49	206	1,506	122	69	1,952
1989	7	46	193	1,458	194	130	2,029
1990	15	117	327	1,110	216	238	2,023
1991	2	72	347	1,143	418	245	2,227
1992	7	53	245	643	181	126	1,255
1993	9	96	192	341	63	113	814
1994	1	69	228	845	39	107	1,289
1995	3	39	54	128	9	24	257
1996	1	29	44	177	22	74	347
1997	6	37	40	74	54	79	290
1998	1	53	41	154	56	54	359
1999	7	40	67	117	71	93	395
2000	7	28	38	59	58	69	257
2001	3	46	37	65	32	88	246
2002	5	36	26	139	34	51	290
2003	2	35	25	68	35	49	214
2004 ¹	0	23	26	67	26	33	176

¹preliminary

Table 2. Estimates of sublegal-sized Pacific halibut, in thousands of pounds (net weight), killed in the commercial halibut fishery by IPHC regulatory area, 1987 to 2004.

Year	Regulatory Area						Total
	2A	2B	2C	3A	3B	4	
1987	12	359	160	550	246	138	1,465
1988	10	377	171	665	225	94	1,542
1989	9	296	153	604	190	99	1,351
1990	4	249	147	508	257	109	1,274
1991	10	161	130	743	298	75	1,417
1992	12	171	147	870	216	83	1,499
1993	16	238	169	739	196	78	1,436
1994	8	222	156	807	97	67	1,357
1995	3	169	75	411	50	38	746
1996	3	214	142	410	88	42	899
1997	4	338	143	670	261	168	1,584
1998	4	379	179	576	286	174	1,598
1999 ¹	2	343	165	438	264	158	1,370
2000 ¹	1	181	133	420	314	133	1,184
2001 ¹	3	247	155	390	448	184	1,427
2002 ¹	4	182	110	484	484	132	1,396
2003 ¹	8	320	102	616	602	133	1,781
2004 ^{1,2}	4	299	276	672	723	130	2,104

¹ sublegal to legal ratio from the setline surveys from the highest one-third of the legal catch

² preliminary

Revised estimates of the personal use harvest, including new estimates for the subsistence fishery off Alaska

Gregg H. Williams

Abstract

Halibut is taken throughout its range as a personal use (subsistence) harvest from several sources. The main sources are: the treaty Indian ceremonial & subsistence fishery in Area 2A, the First Nations food fish fishery in Area 2B, and a newly created subsistence fishery off Alaska. Estimates for 2003 total 1.38 million pounds, substantially higher than in past years. This increase reflects new information about the amount of subsistence harvest in Alaska, based on a survey conducted by ADF&G, and not an increase in personal use harvests.

Introduction

The removals of Pacific halibut which are used in the stock assessment include commercial and sport catch, bycatch, wastage, and personal use. Personal use includes removals from a variety of sources for which little documented data are available. Sources of personal use harvest include (1) the subsistence fishery in Alaska, (2) the sanctioned First Nations food fish fishery in Canada, (3) ceremonial and subsistence (C&S) removals in the Area 2A treaty Indian fishery, and (4) sublegal halibut retained in Areas 4D and 4E under International Pacific Halibut Commission (IPHC) regulations.

Reported harvests by area

The treaty Indian C&S allocation is included in the Area 2A Catch Sharing Plan. Since 1995, all take-home fish from the commercial halibut fisheries in Alaska and Canada has been included in the commercial catch and not under personal use. Table 1 presents the personal use catch estimated since 1991. A methodology for Alaska was developed by Trumble (1999) in 1998, but has been superseded by a postal survey (Fall et al. 2004) due to the creation of a subsistence fishery for halibut.

Alaska

With the implementation of the Individual Fishery Quota (IFQ) fishery, take-home fish or the amount recorded as “retained weight” is counted as part of a person’s IFQ. Thus, personal use fish only includes the non-commercial and non-sport caught halibut.

Prior to 2003, estimates of personal use were based on methodology developed in 1998 by Trumble (1999). He used information gathered by household interviews and postal surveys conducted by the Alaska Department of Fish and Game (ADF&G). The interview and survey results were adjusted to account for some amount of overlap in the reporting of sport fishery catches and for areas where no data were collected.

In 2003, a subsistence fishery for halibut was created by the North Pacific Fishery Management Council, and governed by a separate set of fishery regulations which vary somewhat by IPHC regulatory area. A provision of the subsistence fishery management program was a survey of fishers to determine the annual harvest. The survey was conducted by the Subsistence Division of the Alaska Department of Fish and Game (ADF&G), with results reported by Fall et al. (2004).

The estimates from the survey are shown in Table 1 and total 1,041,500 pounds (net weight) for the 2003 fishery off Alaska. While this estimate is substantially higher than the estimate previously used by IPHC, *it should be noted that this does not imply that subsistence harvests have increased but that harvests are greater than believed previously*, due to:

(1) the liberal nature of subsistence fishery regulations relative to the previous set of regulations governing personal use and sport fishing in Alaska, and

(2) better information on the subsistence fishery through improved methods of surveying fishers.

The ADF&G survey indicates that roughly 60 percent of the total subsistence harvest in Alaska occurs in Area 2C, with 27 percent harvested in Area 3A. The areas comprising the Bering Sea/Aleutians totaled 105,900 pounds or roughly 10 percent of the coast-wide harvest. The communities within Area 4E accounted for half of the harvest in the Bering Sea/Aleutian areas.

Formerly, IPHC also added the amount of sublegal halibut retained in the Area 4D/4E Community Development Quota (CDQ) fishery to its estimates of personal use (Williams 2004). The ADF&G survey included all registered subsistence fishers and households in all areas, but fishermen that retained sublegal halibut as part of their Area 4D/4E harvest were not required to register for the subsistence fishery and therefore did not participate in the survey. Therefore, the sublegal harvests described by Williams (this volume) should be added to the subsistence harvest estimates reported here. Specific information on the 2004 Area 4D/4E sublegal harvest can be found in Williams (this volume).

British Columbia

In the Individual Vessel Quota (IVQ) fishery, take-home fish is monitored and weighed at the time of the offload by the port monitors and is therefore included as part of the vessel's quota.

The primary source of unreported personal use halibut in British Columbia is the First Nations food fish fishery, which is estimated by Fisheries and Oceans Canada (DFO) at 300,000 pounds. Currently, IPHC receives some logbook and landing data for this harvest from DFO but those data do not represent the complete 300,000 pounds.

Washington, Oregon, and California

In Area 2A (Washington, Oregon, and California), the catch limit is allocated by the Pacific Fishery Management Council to directed and incidental commercial fisheries, sport fisheries, and treaty Indian fisheries operating off northwest Washington. For 2003, the treaty Indian ceremonial & subsistence fishery was allocated 27,000 pounds.

State regulations require that personal use fish from the halibut fisheries be recorded on the fish tickets. The personal use removals from the directed commercial fishery have been included in the commercial catch, which is consistent with the procedure used in the quota share fisheries.

Discussion

Information in this document revises the harvest reported by Williams (2004) for 2003. The new information provided by Fall et al. (2004) for the 2003 Alaskan subsistence fishery results in a significantly higher estimate, from 767, 000 to 1.37 million pounds. Roughly 72 percent of the personal use harvest occurs in Alaska. There is no program to collect biological data from the personal use harvest in any area, so the size composition is unknown. Finally, the year lag in estimating harvest in Alaska results in the recommendation to use the 2003 estimate also for 2004, until an estimate for 2004 becomes available.

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Table 1. Estimates of pounds (thousands of pounds, net weight) of halibut used for personal or ceremonial & subsistence use.

Year	Regulatory Area						Total	
	2A	2B	2C	3A	3B	4		
1991	10.0	50	720	-----1,000-----		230	2,010	
1992	14.2	100	-----1,000-----					1,114
1993	15.8	300	108	328	59	121	932	
1994	10.9	300	108	328	59	121	927	
1995	14.2	300	n/a	97	37	94	542	
1996	15.0	300	n/a	97	37	94	543	
1997	14.8	300	n/a	97	37	94	543	
1998	10.5	300	170	74	20	166	741	
1999	10.5	300	170	74	20	170	745	
2000	17.5	300	170	74	20	175	757	
2001	16.0	300	170	74	20	192	772	
2002	16.0	300	170	74	20	180	760	

Year	Regulatory Area										Total
	2A	2B	2C	3A	3B	4A	4B	4C	4D	4E	
<i>2003 Subsistence</i>											
	27.0	300.0	628.0	279.6	28.0	20.7	2.5	23.8	4.4	54.5	1,368.5
<i>2003 Area 4D/4E Sublegal</i>											
	-	-	-	-	-	-	-	-	3.0	11.3	14.3
<i>2003 Total</i>											
	27.0	300.0	628.0	279.6	28.0	20.7	2.5	23.8	7.4	65.8	1,382.8

Retention of sublegal halibut in the Areas 4D/4E CDQ fishery: 2004 harvests

Gregg H. Williams

Abstract

Since 1998, sublegal halibut (<32 inches) have been retained by the Area 4E Community Development Quota (CDQ) commercial halibut fishery, under an exemption requested by the North Pacific Fishery Management Council and approved by the International Pacific Halibut Commission. Beginning in 2002, the retention allowance was expanded to include Area 4D for only those vessels that land all of their annual catch in Areas 4D or 4E. The amount of retained halibut has grown from 3,590 pounds in 1998 to 30,267 in 2001. For 2004, a total of 16,188 pounds was reported by three CDQ organizations, a 13 percent increase from 2003.

Program history

The International Pacific Halibut Commission (IPHC) initially approved a two-year exemption to the retention of sublegal halibut in Area 4E at the 1998 Annual Meeting. A reporting requirement was added for the 1999 fishery. Another two-year exemption was approved at the 2000 Annual Meeting, covering the 2000 and 2001 fishing seasons. At the 2002 Annual Meeting, IPHC agreed to extend the allowance to CDQ operations in Area 4D, and to amend the regulation to apply only to vessels that land all of their catch in Areas 4D or 4E. The staff agreed to review the regulation at the end of 2002 to see if it was still necessary under the subsistence fishery regulations being drafted by the North Pacific Fishery Management Council (NPFMC) and National Marine Fisheries Service (NMFS). Such determination will likely wait until NMFS makes its harvest report for the 2003 subsistence fishery.

Results for 2004

Reports for 2004 were received from three organizations: Coastal Villages Regional Fund (CVRF), Bristol Bay Economic Development Corp. (BBEDC), and Norton Sound Economic Development Corp. (NSED). Their reports are summarized below, and the reported amount of retained sublegal halibut is shown in Table 1. Overall sublegal landings in 2004 totaled 16,188 pounds, up 13 percent from 2003.

Bristol Bay Economic Development Corp. (BBEDC)

BBEDC's report was received on October 25. BBEDC fishers fill out a reporting log, which includes the lengths of any retained sublegal halibut. Lengths are tabulated by BBEDC at the conclusion of the season and converted to weights from the IPHC length/weight table, and summed to estimate the total catch. As in previous years, halibut were landed by BBEDC vessels at two locations (Togiak and Dillingham), and fish is also sold in "over the side" retail sales in Dillingham and Naknek.

BBEDC reported that 30 of 33 active fishers turned in their sublegal halibut report. Fishers retained 515 halibut for a total of 4,826 pounds. The fish had an average size of 9.4 pounds, and 88 percent of the halibut were 28-31 inches in length. The non-reporting fishers were “averaged” into the sublegal landings total based on the fisher’s total catch. Fishers reported that the fish were used for subsistence food in the form of dried, smoked, and shared in general with community members.

Norton Sound Economic Development Corp. (NSEDC)

NSEDC’s report was received on November 24. NSEDC required their vessels to offload all halibut, legal and sublegal. The sublegal halibut were weighed then returned to the vessel. NSEDC had landings from July 18 through October 8 and reported 531 sublegal halibut weighing 4,919 pounds in head-on with slime weight, or 4,242 pounds net weight (head-off, no ice/slime). The fish had an average weight of 8.0 pounds. As in past years, fish were landed only in Nome.

Coastal Villages Regional Fund (CVRF)

The report from CVRF was received on December 2. Crews at Coastal Villages Seafoods facilities in six locations separate undersize halibut during offloads and then weigh them separately from the legal halibut. Once this has been completed, the plant’s record keeper records on a tally sheet the name, number of halibut, and the poundage of the sublegal halibut retained by the fishermen. Each plant sends the tally sheets into the Coastal Villages Seafoods headquarters on a weekly basis, where the information is entered onto a spreadsheet. In 2004, plants in at Chefornak, Hooper Bay, Kipnuk, Mekoryuk, Toksook Bay, and Tununak, recorded sublegal halibut during May 21 through August 9. No halibut were reported landed in Quinhagak. CVRF reported 7,120 pounds being landed, a 41 percent increase from 2003. A total of 831 halibut were recorded, for an average weight of 8.6 pounds. Over 69 percent of the fish were landed at Toksook Bay and Mekoryuk, similar to previous years.

Table 1. Reported amount (pounds, net weight) of sublegal (<32 inches, 82 cm) halibut retained by Community Development Quota programs fishing in Areas 4D and 4E.

Year	CVRF	BBEDC		Total
1998	900	2,690	-	3,590
1999	7,483	418	-	7,901
2000	9,618	3,772	-	13,390
2001	19,494	10,773	-	30,267
2002	7,473	6,593	4,371	18,437
2003	5,034	6,346	2,961	14,341
2004	7,120	4,826	4,242	16,188

Commercial catch sampling

Lara M. Hutton and Tracee O. Geernaert

Abstract

This paper describes the 2004 International Pacific Halibut Commission (IPHC) commercial catch sampling program for halibut in Alaska, British Columbia, Washington, and Oregon. Commercial catch sampling involves collecting otoliths, halibut lengths, logbook information, and final ticket weights. The collected data are used in stock assessment and are useful for research purposes. Otoliths collected provide age composition. Lengths of sampled halibut, in combination with age data, provide the basis for growth analyses and estimates of mean weight. Mean weights are combined with ticket weights to estimate catch in numbers. Copied logbook information provides catch per unit effort (CPUE) data, fishing location for the landed weight, and data for research projects. Finally, tags are collected to provide information on migration, exploitation rates, and natural mortality.

Fishery background

Individual Quota (IQ) systems remained in place in Alaska and British Columbia during 2004. The commercial fisheries off Washington, Oregon, and California (Area 2A) were allocated catch limits by the Pacific Fishery Management Council (PFMC). The Area 2A directed commercial fishery was restricted to waters south of Point Chehalis, Washington (46°53'18" N. latitude). The incidental halibut fishery during the sablefish season and the treaty Indian tribes' commercial fisheries were prosecuted north of Point Chehalis.

Sampling objectives

The primary objective in sampling landings of commercially caught halibut is to obtain halibut samples that are representative of the total commercial halibut removals. To accomplish this, random sampling techniques are applied and an equal proportion of the catch is sampled within each regulatory area over the entire landing period, or season, using prescribed sampling rates that vary among areas and sometimes ports. In addition to catch sampling, other objectives include copying fishing logs and their respective ticket weights for as many halibut trips as possible throughout the entire season, as well as collecting tags.

Inherent in the sampling program is the positioning of field sampling staff in ports where there is an opportunity to sample a majority of the catch for each regulatory area. To ensure that proportional sampling occurs by regulatory area and port, landing patterns have been reviewed annually, sampling protocols established based on the weights landed, and different days assigned for sampling in each port. Also, in some cases, different sampling percentages were assigned by port and by regulatory area. Finally, sampling priorities by regulatory area within ports were assigned for cases where multiple concurrent landings precluded the IPHC port sampler's ability to obtain samples from all vessels.

For Area 2A, the sampler positioned in Bellingham sampled the incidental halibut catch during the sablefish season at a rate of five percent. The 2A directed halibut catch was sampled in Newport during two of the four openings at a rate of 20 percent. The 2A Treaty Indian halibut catch was sampled during the first opening at a rate of five percent. For Area 2B, samplers in Vancouver and Prince Rupert sampled three days per week at one percent, while in Port Hardy sampling was conducted three and a half days per week at one percent. For Area 2C, samplers in all ports sampled five days per week at two and a half percent.

For halibut captured in Area 3A, the samplers in Kodiak and Homer sampled three and a half days per week at one percent, while samplers in all other ports sampled Area 3A fish three days per week at one percent. Differences in sampling rates among ports were due to sampling conflicts arising in ports with more poundage and landings. For fish captured in Area 3B, samplers in all ports sampled three days per week. The sampler in Seward sampled at a rate of one percent while all other samplers sampled at one and a half percent. For fish from Areas 4A, 4B, 4C and 4D, all samplers sampled five days a week; a four percent sampling rate was used for Area 4A, and six percent for Areas 4B, 4C, and 4D.

Samplers use judgment when there are sampling conflicts that preclude sampling all landings. For example, it is common to have more than one boat unloading from the same regulatory area simultaneously. In such cases, the vessel with the larger poundage is usually sampled. In other instances, a sampler may be working at an unloading facility where there is a constant stream of halibut offloads, and the sampler may opt to stay at the one location. Finally, there may be sampling conflicts arising from simultaneous landings from different regulatory areas. Sampling priorities are assigned for these regulatory area conflicts. In Canada, when a sampler is presented with a choice of regulatory areas, landings from Areas 2B and 2C are given equal priority and are sampled before Areas 3A and 3B. In Alaskan ports, Area 4 is sampled first, followed by Area 2C, then Areas 3A and 3B. Areas 3A and 3B are treated equally for all ports except Homer, where 3B is given priority over 3A. Finally, the priority scheme for Area 4 is to sample Area 4B first, followed by Areas 4C and 4D, and then Area 4A.

The last objective of the catch sampling program involves collecting a target number of otoliths from each regulatory area. In addition, length data are collected for all fish from which otoliths are extracted. Otolith sampling rates are established to optimize work effort and achieve target sample sizes. A target of 1,500 otoliths (plus or minus 500) and halibut lengths was set for each of Regulatory Areas 2B, 2C, 3A, 3B, 4A, 4B, and Areas 4C and 4D combined in 2004 (Table 1). In Area 2A, the target was 1,000 otoliths with corresponding fish lengths. The Area 2A target was further subdivided to obtain an equal sample from both the treaty Indian and directed commercial fishery, relative to each fishery component's proportion of the overall 2A catch limit. This resulted in a target of 650 otoliths/lengths for the treaty Indian fishery and 350 otoliths/lengths for the non-treaty directed commercial fishery.

Sampling rates

The otolith sampling targets for 2004 were decreased from those for 2003. The otolith sampling target in 2004 was 1,500 otoliths (plus or minus 500) per area, which was a 500 otolith decrease from the 2,000 otolith targets for 2003. This decrease in sampling number reflected a decrease in the number of otoliths that were actually aged in 2003: while 2,000 otoliths were sampled in each area, only 1,500 were used for aging purposes (Forsberg 2005). Therefore, sampling rates were

adjusted somewhat to reflect this decrease in otolith sampling targets. Several factors determined whether and to what extent the sampling rates were adjusted. These included the number of otoliths actually collected in 2003 relative to the otolith target for 2004, staffing of ports in 2004, and the change in the catch limit for each regulatory area for 2004 from that of 2003. The sampling rate for some regulatory areas remained unchanged between years, or changed very slightly, dependent on the effects of the factors listed above.

Alaskan Individual Fishing Quota (IFQ)

To meet Alaskan sampling objectives, the ports of Homer, Kodiak, Seward, Juneau, Sitka, Petersburg, and Bellingham were staffed throughout the entire IFQ season (February 29 to November 15). Dutch Harbor was staffed from May 6 until the end of the season (November 15). St. Paul was staffed during the Area 4C CDQ fishery from June 23 through August 22. A sampling summary is presented in Table 1. Otolith/length samples for each Alaskan regulatory area fell within target ranges, with the exception of Area 4B which was well below the target. This may have been, at least in part, due to the limited amount of pounds delivered from this area in 2004. Other factors may have also affected this. In 2004, Dutch Harbor was essentially the only IPHC staffed port that received landings from area 4B. In addition, a high volume of halibut was landed in Dutch Harbor from a variety of other regulatory areas leading to more sampling conflicts where offloads occurred simultaneously. The reasons for the 4B sampling shortfall will be investigated further and adjustments will be made to ensure that this does not happen in 2005.

The goal of having sampled weight proportional to landed weight in each sampled port was met acceptably (Table 2). There continues to be relatively low variation among ports that are within the sampled catch harvest area. The regulatory area information on the Prior Notice of Landing (PNOL) List and the PNOL List itself plays a large role in making this possible. The PNOL List is compiled from Restricted Access Management (RAM) data on vessels notifying the US National Oceanic and Atmospheric Administration's Office of Law Enforcement (NOAA OLE) of their intention to land IFQ fish. The PNOL List includes poundage of halibut and sablefish to be landed by vessel name and accompanying Alaska Department of Fish and Game (ADF&G) number, the unloading port, the unloading location, and the unloading date and time. The advance knowledge of which regulatory area the catch is from helps samplers set sampling priorities. In August of 2003 the required notification period prior to landing was reduced from six hours to three hours. This led to greater conflicts both in sampling and log collection, and more trips were missed in 2004 as a result.

IPHC samplers copied about 3,250 Alaskan logs from ports where the IPHC has a presence, and another 300 logs for Alaskan landings in to other ports (Table 3). Samplers have an opportunity to collect logs from other locations when they encounter transient halibut vessels in their own ports.

Canadian Individual Vessel Quota (IVQ)

IPHC samplers were in place in Prince Rupert, Port Hardy, and Vancouver from February 29 to November 15. The samplers collected 2,185 otoliths which exceeded the target range of 1000-2,000 (Table 1). These otoliths represent just over a third of the coast-wide Area 2B poundage. Canadian samplers collected 890 logs in their ports. In addition, 81 U.S. logs were obtained in

Bellingham and Vancouver by the local sampler (Table 2). Most of the Area 2B catch (88%) was landed in these three ports (Table 3).

Halibut wire tag collection

U.S. and Canadian Samplers collected 243 wire tags of which 229 were from the double-tagging project carried out in the autumn of 2003. In Port Hardy alone, 152 wire tags were recovered from the double-tagging project. Tag data collected dockside includes fork length, otoliths and location of the recovery. This total of 243 recovered wire tags does not include recoveries from the sport charter catch-and-release program.

Washington and Oregon

Treaty Indian managers worked cooperatively with the IPHC and sampled the Area 2A-1 catch. There were 154 fish sampled in the tribal fishery, which was less than the sampling target of 650 otoliths. We are hoping to work with the Treaty Indian managers in 2005 to increase the number of fish sampled in order to reach the otolith target for this sector.

The Area 2A non-treaty commercial sampling was conducted in Newport, Oregon and in Bellingham, Washington where sampling targets were met and surpassed, with 1,184 fish being sampled. To ensure this, multiple Area 2A directed commercial openings were sampled with multiple samplers. Both tactics (extra samplers and multiple openings sampled) have substantially improved Area 2A non-treaty commercial fishery sampling efforts.

References

Forsberg, J. E. 2005. Age distribution of the commercial halibut catch for 2004. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2003: this volume.

Table 1. Summary of 2004 otolith targets, collected otoliths, vessels sampled and the percentage of the catch sampled.

Regulatory Area	Otolith Target	Collected otoliths	No. landings sampled	% of catch sampled-lbs
2A-1	650	154	7	4
2A	350	1,184	69	44
2B	1,500	2,185	234	36
2C	1,500	2,168	180	26
3A	1,500	2,096	153	20
3B	1,500	1,228	50	12
4A	1,500	1,258	39	29
4B	1,500	380	9	8
4C&D	1,500	1,476	36	36
Totals	11,500	12,129	777	22

Table 2. Proportion of 2004 halibut landings sampled by weight, separated by IPHC regulatory area and listed by key ports.

Port	2A	2B	2C	3A	3B	4A	4B	4C&D
Newport	0.68							
Neah Bay	0.37							
Vanc/Bell*	0.53	0.49	0.75	0.57				
Port Hardy		0.42						
Prince Rupert		0.39						
Petersburg			0.33	0.14				
Sitka			0.39	0.21				
Juneau			0.41	0.26				
Seward				0.25	0.15			
Homer				0.19	0.13	0.70		1.00
Kodiak				0.20	0.26	0.33		
Dutch Harbor					0.16	0.31	0.22	0.53
St. Paul								0.42

*"Vanc/Bell" = Vancouver and Bellingham, combined

Table 3. The number of halibut fishing logs collected for key ports in 2004, as well as the total number of logs collected from all ports.

Port	US	Canada	Total
Newport	40		40
Neah Bay	41		41
Bellingham	81		81
Port Hardy		337	337
Prince Rupert		417	417
Vancouver		50	50
Petersburg	325		325
Sitka	484		484
Juneau	207		207
Seward	395		395
Homer	551		551
Kodiak	558		558
Dutch Harbor	248		248
St. Paul	317		317
Total key ports	3,247	804	4,051
Total all ports	3,572	890	4,462

The presence of swivels on snap hook gear in the halibut fishery

Lara M. Hutton and Tracee O. Geernaert

Abstract

For several years there appears to have been an increase in the use of swivels on snap-on (snap) gear during commercial halibut fishing. Since 2001, data documenting the presence of swivels on snap gear have been collected during the logbook interviews in British Columbia (B.C.). In 2003, this data collection was extended to encompass all areas of the eastern Pacific halibut fishery. The relative percentage of trips with swivels on the snap gear is summarized by area in this report. The relative percentage of snap gear with swivels in B. C. has increased each year from 2001 through 2003. Areas 2A and 2B were found to have the highest incidence of swivel snap gear, with Areas 4C, 4D, and 2C having the lowest. The possible effects of this gear type on catch rates have not been assessed. However, the collection of these data by the current method will continue for the 2005 season.

Introduction

The use of swivels on snap-on (snap) gear on commercial halibut fishing trips was reported initially by the IPHC port samplers in Canadian ports. In an attempt to reduce the loss of hooked rockfish, swivels have been added to the snap gear for a number of years. In snap gear, the hook and gangion are attached to a metal snap, which is clipped onto the groundline. When swivels are used with snap gear, the swivel is inserted between the snap and the gangion (Fig. 1). It is thought that the swivel reduces the coiling and snarls created when a rockfish spins on the hook, thus the swivel prevents the gangion from parting. Swivel gear usually utilizes Perlon line for the gangion. This clear, heavy, monofilament line is thought, by some fishers, to increase catch rates because of its invisibility. It is presently unknown how this affects halibut catch rates. It is possible that swivels also reduce the loss of halibut from hooks. No research has been undertaken to assess the effects of this change in gear type. The IPHC has initiated data collection to establish a base line for determining the prevalence of this gear type.

In 2001, the IPHC port sampling program in B.C. was expanded to allow for the collection of more specific gear information. In 2001 and 2002, halibut fishers in B.C. were queried as to whether or not their snap gear incorporated swivels. In 2002, similar data were collected during logbook interviews at the U.S. port of Seward, and it was noted that swivels were also used with snap gear by U.S. fishers. Therefore, in 2003 the collection of these data was extended to encompass all IPHC staffed ports.

Methods

The logbook interview section of the port sampling program was expanded as follows. Once it was ascertained that snap gear had been used for a given trip, the skipper was queried further as to whether his snap gear incorporated swivels. Gear type was assigned on a trip basis. Snap gear without swivels was coded as 'SN'. Snap gear with swivels was coded as 'SS' (for swivel-snap). If both regular snap and swivel-snap gear were fished on the same trip, the trip was coded SN and SS. If it was unknown whether the snap gear for a particular trip included swivels, the trip was assigned the code 'SU'. However, most 'snap gear unknown' trips were those for which the skipper was not interviewed. For the purpose of final data analysis, trips that were assigned an SU code were excluded.

Results

In 2001, 34% of the trips used swivel snap gear in B.C. (Regulatory Area 2B). This number rose to 46% in 2002, to 62% in 2003, and dropped slightly to 58% in 2004. The percentage of trips with swivels on their snap gear for all IPHC regulatory areas changed only slightly from 2003 to 2004, from 38% to 41%. For all areas combined in 2004, it was determined for more than 85% of snap gear trips whether the gear included swivels. Area 4B had the greatest percentage of trips with unknown snap gear at 50%, followed by Areas 4C and 4D at 36% (Table 1).

Of the known snap gear types, 41% of the trips for all areas consisted of swivels (Table 2). Area 4B had the highest relative percentage of trips with swivels on snap gear at nearly 100% (Table 2). However, there was only one record available for this area. Area 2A had the second highest percentage of snap gear with swivels at 71%, followed by Area 2B at 58%, and then Areas 4A, 3A, 3B, and 2C. Areas 4C and 4D had the lowest percentage of swivel-snap gear, at less than one percent. No obvious geographic trends were noted.

Discussion

British Columbia (Area 2B) was the area where the use of swivels on snap gear was first recognized. Since 2001, the relative percentage of snap gear that includes swivels has risen considerably in B.C. and has surpassed that of snap gear without swivels. It seems that the fleet is recognizing the presence of swivels on snap gear as an important modification. Some of the trips coded as 'snap unknown' were from vessels making the switch from regular snap gear to swivel-snap gear.

It was thought initially that the use of swivels was primarily an Area 2B phenomenon or restricted to areas where rockfish bycatch was a concern. However, this was not the case. The overall percentage of trips deploying snap gear with swivels was higher than expected coastwide. It is difficult to say whether the prevalence of this gear type is changing across all IPHC regulatory areas because, with the exception of area 2B, only two years of data are available. However, by continuing with detailed snap gear questions during logbook interviews in the port sampling program, the relative prevalence of swivel-snap gear may be monitored and assessed.

The question remains as to the effect and importance of this gear modification. By linking these data to the catch per unit effort data, the effect of swivel-snap gear on catch rates may be

investigated. The results presented here concern the number of trips that were delivered for each gear type, not the total amount of fishing effort represented by each gear type. Snap and swivel snap gear, may account for a high number of trips because many smaller boats, making frequent small poundage trips, may favour this gear type. Conversely, larger vessels, making fewer larger deliveries, may favour fixed gear. Further analysis must be done to determine the actual prevalence of this gear in the water; i.e. the number of hooks hauled by gear type. This may then be compared to the landed poundage for which this gear accounts, aiding in further assessments of the prevalence and significance of this gear type. This data collection will continue in its current format for the 2005 season, with the intent to further assess the effect of this change in gear type.

Table 1. Relative percentage of regular snap, swivel-snap and snap unknown gear by regulatory area, 2004.

Regulatory Area	Type of snap gear		
	Regular snap	Swivel-snap	Snap unknown
2A	21.0	72.4	6.6
2B	34.5	47.2	18.3
2C	74.0	16.8	9.2
3A	52.0	39.4	8.6
3B	60.8	32.2	7.0
4A	47.1	36.7	16.2
4B	0.0	50.0	50.0
4C&D	63.9	0.5	35.6
Total	50.9	34.9	14.2

Table 2. Relative percentage of ‘known’ snap gear (i.e. with or without snaps) by regulatory area, 2004.

Regulatory Area	Type of Snap Gear		
	Regular snap	Swivel-snap	Total number
2A	22.5	77.5	71
2B	42.2	57.8	597
2C	81.5	18.5	356
3A	56.9	43.1	617
3B	65.4	34.6	185
4A	56.1	43.9	57
4B	0.0	100.0	1
4C&D	99.3	0.7	139
Total	59.3	40.7	2023



Figure 1. Snap gear with a swivel.

Age distribution of the commercial halibut catch for 2004

Joan E. Forsberg

Abstract

The age distribution of halibut sampled from the 2004 commercial catch is summarized. Fish from four to 48 years old were captured, with 10-year-olds comprising the largest age group in the overall catch. Average fork length and average age were both lower in 2004 than 2003, for all areas combined.

Age distribution

The age distribution of the commercial catch of Pacific halibut is summarized in Table 1. The average values for age, length, and estimated weight by regulatory area are presented in Table 2. Mean age of halibut by regulatory area for the years 1995-2004 is presented in Table 3. Average age of samples in all areas except Areas 3 and 4C decreased from 2003. The average age from all areas combined decreased by one year in 2004 relative to 2003, but overall average age in 2004 was still 0.9 years higher than it was in 1995.

Average size (measured fork length) of sampled halibut increased in Area 3A in 2004 but decreased in all other areas. Average fork length for all areas combined decreased by 2.3 cm from 2003.

The 1994 year class (10-year-olds) accounted for the largest proportion (in numbers) of the overall commercial catch (13%) in 2004. The next most abundant year classes were 1995, 1988, and 1987, accounting for 12%, 9%, and 9% of the catch, respectively. Ten-year-olds were also the most abundant age class in Regulatory Areas 2C, 4A, 4B, and 4D, and the second most abundant in Areas 2A, 2B, and 4C. Nine-year-olds (1995 year class) made up the most abundant age class in Regulatory Areas 2A, 2B, and 4C, while 17-year-olds (1987 year class) were the most abundant age class in Area 3.

The youngest and oldest halibut in the 2004 commercial or “market” samples were determined to be four and 48 years old, respectively. There were nine four-year-olds; one captured in Area 2A measuring 85 cm, and the other eight from Area 2B measuring between 83 and 99 cm. The 48-year-old was captured in Area 4A, and had a fork length of 142 cm. The largest halibut in the 2004 commercial samples was a 200-cm fish from Area 2C, which was determined to be 21 years old.

There were larger numbers of four- and five-year-olds in the commercial catch in 2004 than in recent years. Four- and five-year-olds comprised 0.63% of the sampled catch (in numbers) in 2004, whereas these two age groups made up only 0.14% of the catch in 2003.

Table 4 contains percent agreement values for quality control (QC) readings. All QC readings from 2002 through 2004 were made on burned or baked otolith sections. QC readings for years prior to 2002 were either surface ages or burned/baked section ages. In the past, QC readings were

not conducted until the following spring. This year, a portion of the QC ages for the 2004 market sample collection was available at the time of writing.

Production aging timeline

The peak month for aging in 2004 was August, followed by September and July (Fig. 1). In contrast, March was the peak month for aging in 2003, due to the re-aging (by break-and-bake) of all 2002 market samples (MS) and general series (GS) setline survey otoliths that were previously only surface-aged (Forsberg 2004). Otoliths from the 2004 commercial samples were aged between April and November, with July being the busiest month. Current-year setline survey otoliths were aged between June and October, with August being the busiest month. The MS otoliths aged in March were samples collected in 2003 that were not sent to the office until the following spring. The number of “priority areas” for both market sample and setline survey otoliths remained the same in 2004 and included all areas except Areas 2A, 4C, and 4D. The priority designation meant that otoliths from those areas were aged first, since they were used in the stock assessment. All priority area ages were available for use in assessment analyses by the October 15 deadline.

Relatively few otoliths from recovered tagged fish have been aged over the past several years due to the lack of recent tagging experiments. However, over 450 otoliths were collected from recaptured tagged fish in 2004. These were mainly recoveries from the 2003/2004 PIT tag releases or the 2003 double-tagging experiment (Geernaert 2005). Tag recovery otoliths are aged the year following recovery.

In 2004, over 12,000 market sample otoliths were putatively collected, however only 11,392 otoliths had been aged at the time of writing. About 150 otoliths had not yet been aged and the remaining difference in the two totals was the combined result of discards (crystallized, right-side, or broken otoliths; mixed-up samples) and counting errors (incorrect otolith totals reported on market sample form). When the number of priority areas was increased in 2003, the commercial otolith aging targets were reduced from 2,000 to 1,500 per regulatory area or regulatory area combination so that it would be possible to meet the October 15 aging deadline. Since the number of priority areas remained the same in 2004, the commercial otolith target remained at 1,500 per area as well. In 2003, otoliths were subsampled after collection, however, in 2004, sampling rates were adjusted to meet the reduced target. Significant under-sampling (25% or more under target) occurred in Area 4B in 2004, while over-sampling occurred in Areas 2B, 2C, and 3A (see Hutton and Geernaert 2005).

References

- Forsberg, J. E. 2004. Age distribution of the commercial halibut catch for 2003. *Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2003*: 83-88.
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Table 1. Age distribution of commercial catch of Pacific halibut by regulatory area, 2004.

Age (years)	Number of otoliths aged by Regulatory Area									Total by age
	2A	2B	2C	3A	3B	4A	4B	4C	4D	
4	1	8								9
5	3	57	1	1				1		63
6	6	55	10	3	7			5		86
7	25	81	26	10	11	13	1	13	3	183
8	101	134	111	19	27	44	15	68	28	547
9	301	314	251	61	66	131	31	149	86	1,390
10	265	311	284	105	92	158	44	141	116	1,516
11	115	181	155	94	60	83	17	73	61	839
12	85	122	168	118	86	52	16	38	60	745
13	67	117	151	146	92	48	19	26	63	729
14	40	104	134	131	84	57	17	37	38	642
15	42	116	128	198	86	114	22	38	58	802
16	62	132	203	234	134	107	44	33	68	1,017
17	50	130	168	246	173	109	44	25	61	1,006
18	21	56	73	165	73	51	19	11	15	484
19	6	31	44	119	44	21	13	7	8	293
20	5	13	28	104	32	19	11	6	14	232
21	10	7	26	104	38	26	7	6	8	232
22	4	5	11	58	20	24	6	7	6	141
23	2	9	10	28	17	13	8	7	4	98
24	2	3	10	24	16	28	3	11	5	102
25	2	5	6	24	7	20	5	9	1	79
26	3	9	19	29	19	41	22	10	5	157
Total by Reg. Area	1,218	2,000	2,017	2,021	1,184	1,159	364	721	708	11,392

Table 2. 2004 commercial samples: average length, age, weight by regulatory area, and otoliths collected and aged.

Regulatory Area	Average age (years)	Average length (cm)	Average weight¹ (lbs)	Otoliths collected²	Otoliths aged³
2A	11.3	97.0	20.1	1,338	1,218
2B	11.7	97.1	21.1	2,185	2,000
2C	13.1	109.4	31.0	2,168	2,017
3A	16.0	104.4	26.4	2,096	2,021
3B	15.0	100.6	22.9	1,204	1,184
4A	14.5	107.5	29.0	1,258	1,159
4B	15.4	104.9	26.8	380	364
4C	12.1	102.2	24.7	743	721
4D	13.1	111.3	33.3	733	708
All Areas	13.5	103.5	25.9	12,105	11,392

¹Weights calculated from measured fork lengths

²Summarized from market sample forms entered by November 23, 2004. This number is higher than the number of otoliths that will be aged since the “*Otoliths collected*” value includes otoliths that are discarded and not aged and may also incorporate counting errors

³Numbers of otoliths aged by November 23, 2004

Table 3. Mean age (in years) of Pacific halibut by regulatory area, 1995-2004.

Area	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
2A	10.5	9.6	10.3	10.6	11.3	12.1	12.5	13.3	12.0	11.3
2B	11.9	11.6	11.3	11.8	12.6	12.5	12.7	13.0	12.2	11.7
2C	12.8	12.2	12.1	12.3	12.8	13.1	12.9	13.6	13.5	13.1
3A	13.0	13.0	13.2	13.7	14.1	14.5	14.9	15.8	15.3	16.0
3B	12.4	12.9	12.8	13.5	14.2	14.3	14.7	15.2	14.3	15.0
4A	13.6	13.0	12.8	12.5	12.9	13.8	14.5	14.5	15.2	14.5
4B	14.6	14.0	14.7	14.2	15.1	15.3	16.0	16.4	17.1	15.4
4C	11.8	10.7	11.5	11.7	12.3	13.4	13.6	13.8	12.0	12.1
4D	12.9	13.4	12.1	12.7	12.5	13.9	16.0	15.5	15.0	13.1
All Areas	12.6	12.3	12.5	12.6	13.3	13.7	14.1	14.7	14.5	13.5

Table 4. Between-reader percent agreement for market sample ages 1996-2004 (CV=coefficient of variation, APE=average percent error).

Year	Tot. aged	No. aged 2X	% agreement	CV	APE
1996	13,452	1,839	66.5	2.8	2.0
1997	15,500	2,203	65.4	2.4	1.7
1998	14,395	2,110	63.6	2.6	1.8
1999	12,796	1,117	63.4	2.5	1.8
2000	13,982	1,002	58.8	3.0	2.1
2001	13,181	2,025	45.2	3.9	2.8
2002	17,770	2,135	48.8	3.2	2.3
2003	13,738	984	45.3	3.9	2.8
2004	11,866	809	46.6	3.6	2.5

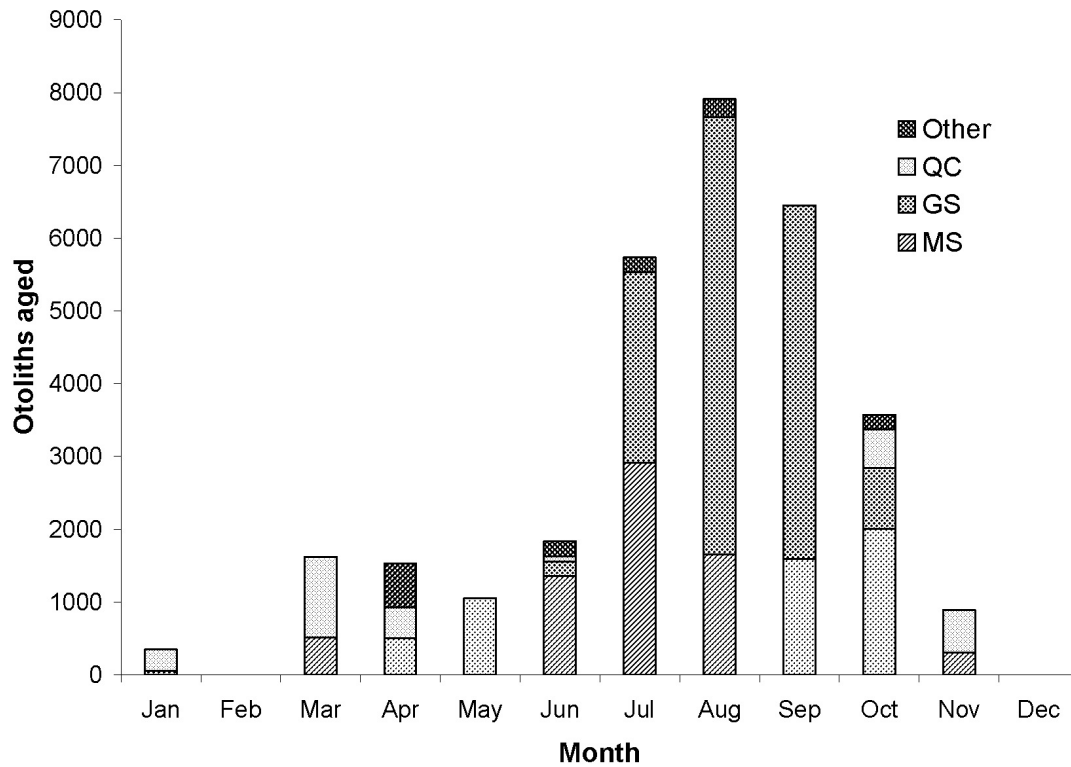


Figure 1. Aging workload January through November of 2004. “Other” category includes otoliths for research projects, reference set, tag recovery ages, and resolved ages. “Resolved” age refers to a single age assigned by two readers viewing the otolith together under a microscope with two sets of eyepieces. “QC” refers to second or quality control ages; “GS” refers to general series (IPHC setline and NMFS trawl survey); and “MS” refers to market sample (commercial) otoliths.