



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic Atmospheric Administration  
National Marine Fisheries Service  
P.O. Box 21668  
Juneau Alaska 99802-1668

February 15, 2019

MEMORANDUM FOR: Barry Thom  
Administrator, Northwest Region

FROM: James W. Balsiger, Ph.D.  
Administrator, Alaska Region

SUBJECT: 2018 Annual Report for the Alaska Groundfish Fisheries Chinook  
Salmon Incidental Catch and Endangered Species Act Consultation

We are providing to you the annual report on salmon incidental catch in the Alaska groundfish fisheries, including current information on salmon bycatch reduction measures and sources for the genetic composition of salmon caught in these fisheries. This report updates previous annual reports on salmon incidental catch and includes—

- 2018 data on salmon incidental catch in groundfish fisheries, and
- an update of NMFS's efforts to reduce the incidental catch of salmon in groundfish fisheries

North Pacific Observer Program bycatch sampling data from 2018 and coded wire tag (CWT) data from 2018 will be forthcoming in the fall of 2019, after CWT numbers are merged with data on stock of origin, hatchery, and location of origin. In addition, web locations for the NMFS Alaska Fisheries Science Center's reports on stock of origin information from incidental catch of salmon in 2017 groundfish fisheries will be forthcoming in the spring of 2019.

This report fulfills one of the terms and conditions of the December 2, 2009, and the January 11, 2007 (NMFS 2009a and NMFS 2007), supplements to the November 30, 2000, biological opinion (BiOp) regarding authorization of the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA) groundfish fisheries (NMFS 2000).

The most recent BiOp that addresses incidental catch of Chinook salmon in the GOA groundfish fisheries is the supplemental BiOp issued on January 9, 2012. This BiOp concluded that the GOA groundfish fisheries are not likely to jeopardize the continued existence of listed salmon evolutionarily significant units (ESUs) (NMFS 2012).



## Data Reports: Accounting for Chinook Salmon Incidental Catch in the GOA and BSAI Groundfish Fisheries

Tables 1 through 5 provide data on the incidental catch of Chinook salmon by fishery type or target fishery, quarter, and from Western Alaska Community Development Quota (CDQ) Program and non-CDQ Program sources. The annual Chinook salmon incidental catch data in these tables are periodically updated. For example, NMFS revised Tables 1 and 2 on February 8, 2019, while Tables 3, 4, and 5 are automatically updated on a monthly basis. These slightly different revision dates account for small differences in some of the incidental catch estimates in Tables 1 and 2 versus 3, 4, and 5. Updated versions of Tables 3, 4, and 5 are available on the NMFS Alaska Region website.<sup>1</sup>

Tables 1 and 2 provide annual estimates of Chinook salmon incidental catch by fishery target for the groundfish trawl and non-trawl fisheries for the BSAI and GOA from 2004 through 2018. In 2018, approximately 82 percent of the incidental catch of Chinook salmon in the BSAI and GOA occurred in the pollock pelagic trawl fishery. Tables 3 through 5 provide seasonal or quarterly Chinook salmon incidental catch estimates by pollock and non-pollock fishery categories.

In BSAI groundfish fisheries, the majority of the Chinook salmon incidental catch occurs during the A season groundfish fishery from January 20 through June 10 (Tables 3 and 4). In GOA groundfish fisheries, the seasonal distribution of Chinook salmon incidental catch across the pollock fishery is highly variable from year to year, with no consistently predominant quarter or season with high incidental catch (Table 5). In the Bering Sea pollock fishery, most Chinook salmon incidental catch occurs in the non-CDQ groundfish fisheries (Table 4).

The amount of Chinook salmon incidental catch in the Alaska groundfish fisheries in 2018 (Tables 1 and 2) was below the incidental take statement amounts for both the BSAI and GOA groundfish fisheries.

Groundfish Fishery	BSAI Pollock Trawl	BSAI Non-Pollock	GOA Pollock and Non-Pollock Fisheries
Chinook Incidental Take Statement	47,591 to 60,000 Chinook salmon <sup>2</sup>	8,745 Chinook salmon <sup>2</sup>	40,000 Chinook salmon <sup>3</sup>
2018 Incidental Catch of Chinook Salmon	13,724	3,655	16,909

The amount of Chinook salmon incidental catch in the BSAI groundfish fisheries in 2018 was 17,379 salmon (Table 1). Of this amount, 13,724 Chinook salmon were caught in the Bering Sea pollock trawl fishery. The amount of Chinook salmon incidental catch in the 2017 BSAI non-pollock groundfish fisheries was 3,655 salmon, which is below the incidental take permit amount for the non-pollock trawl fishery of 8,745 established in the 2009 BiOp.

<sup>1</sup> [https://alaskafisheries.noaa.gov/sites/default/files/reports/chinook\\_salmon\\_mortality2019.pdf](https://alaskafisheries.noaa.gov/sites/default/files/reports/chinook_salmon_mortality2019.pdf) and <https://alaskafisheries.noaa.gov/sites/default/files/reports/goasalmonmort2019.pdf>

<sup>2</sup> See the 2009 BiOp (NMFS 2009a) for Amendment 91 to the BSAI fishery management plan. The incidental take statement includes the Chinook prohibited species catch limit for non-trawl groundfish of 8,745 salmon.

<sup>3</sup> See the 2012 section 7 consultation for GOA groundfish fisheries (NMFS 2012).



The amount of Chinook salmon incidental catch in the GOA groundfish fisheries in 2018 was 16,909 salmon (Table 2). Of this amount, 14,326 Chinook salmon were caught in the GOA pollock trawl fishery. The total Chinook salmon incidental catch in the GOA was below the annual incidental take limit of 40,000 Chinook salmon established in the 2012 BiOp for groundfish fisheries of the GOA (NMFS 2012) and for the previous 2000 BiOp incidental take of Chinook salmon in GOA groundfish fisheries (NMFS 2000).

### **Current Genetic Analysis of Salmon Incidental Catch in the BSAI and GOA for 2017**

This information will be forthcoming in the spring of 2019.

Technical memorandums providing salmon genetic information for other years may be found at the NMFS Alaska Fisheries Science Center website.<sup>4</sup>

### **Groundfish Management Measures for Salmon Incidental Catch in Groundfish Fisheries**

#### **Bering Sea Management Measures—Amendment 91**

Amendment 91 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) is an innovative approach to managing Chinook salmon bycatch in the BSAI pollock fishery that combines a limit on the amount of Chinook salmon that may be caught incidentally with incentive plan agreements and performance standards. The program was designed to minimize bycatch to the extent practicable in all years, and prevent bycatch from reaching the limit in most years, while providing the pollock fleet with the flexibility to harvest the total allowable catch (TAC). NMFS implemented this program for the 2011 BSAI pollock fishery.

#### **Bering Sea Management Measures—Amendment 110**

In 2016, Amendment 110 to the BSAI FMP was implemented to improve the management of Chinook and chum salmon bycatch in the Bering Sea pollock fishery by creating a comprehensive salmon bycatch avoidance program. This action is necessary to minimize Chinook and chum salmon bycatch in the Bering Sea pollock fishery to the extent practicable while maintaining the potential for the full harvest of the pollock TAC within specified prohibited species catch (PSC) limits.

#### **GOA Management Measures—Amendment 93**

In 2012, Amendment 93 to the GOA FMP was implemented to limit the amount of Chinook salmon caught in the Central and Western GOA pollock fisheries. Amendment 93 established separate PSC limits in the Central and Western GOA for Chinook salmon that would cause NMFS to close the directed pollock fishery in the Central or Western regulatory areas of the GOA, if the applicable limit is reached. This action also requires retention of salmon by all vessels in the Central and Western GOA pollock fisheries until the catch is delivered to a

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<sup>4</sup> <http://www.afsc.noaa.gov/Publications/techmemos.htm>

processing facility where an observer is provided the opportunity to count the number of salmon and to collect scientific data or biological samples from the salmon.

Under Amendment 93, the Chinook salmon PSC in the Central and Western GOA pollock fisheries is limited to no more than 25,000 salmon. This limit, in addition to the total PSC limit established by Amendment 97 (see the following action), is below the annual amount of Chinook salmon established by the 2012 Incidental Take Statement for GOA groundfish fisheries of 40,000 Chinook salmon.

#### GOA Management Measures—Amendment 97

In 2015, Amendment 97 to the GOA FMP established annual Chinook salmon PSC limits for the groundfish trawl fisheries, except for pollock trawl fisheries, in the Western and Central GOA. This action established annual Chinook salmon PSC limits for the non-pollock trawl catcher/processor (C/P) sector of 3,600 Chinook salmon, Rockfish Program catcher vessel (CV) sector of 1,200 Chinook salmon, and Non-Rockfish Program CV sector of 2,700 Chinook salmon. It also established incentives for reducing Chinook salmon PSC for the trawl C/P and Non-Rockfish Program CV sectors, and established seasonal Chinook salmon PSC limits for the trawl C/P sector.

#### GOA Management Measures—GOA Trawl Emergency Rule

On May 3, 2015, all groundfish fisheries for the Non-Rockfish Program catcher vessel sector were closed for the remainder of 2015, because the sector unexpectedly reached its annual Chinook salmon PSC limit for the Western and Central GOA of 2,700 Chinook salmon. A prolonged closure would have been detrimental to the community of Kodiak, harvesters, and processors. In June 2015, the North Pacific Fishery Management Council (Council) therefore recommended and NMFS implemented an emergency rule to provide an additional 1,600 Chinook salmon PSC allowance to the GOA groundfish trawl fisheries for the Non-Rockfish Program catcher vessel sector. Providing the additional limit of 1,600 Chinook salmon PSC restored a substantial portion of the forgone groundfish harvest and associated revenue made unavailable by the closure, by allowing the sector to harvest its recent average amount of groundfish for the remainder of 2015, while keeping the total Chinook salmon PSC at or below 32,500, well below the annual 40,000 threshold. The emergency rule was published in the *Federal Register* on August 10, 2015 (80 FR 47864), and became effective on publication. The effectiveness period ended on December 31, 2015. Between August 10, and December 31, 2015, only 12 additional Chinook salmon PSC of the 1,600 allowed were caught by the Non-Rockfish Program catcher vessel sector.

#### GOA Management Measures—Amendment 103

In 2016, Amendment 103 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP) provided NMFS Inseason Management with the authority to reapportion salmon PSC limits among trawl sectors in the GOA within a fishing year. The purpose is to reduce the chances of closing a fishery due to a sector reaching its limit while ensuring that the total catch of Chinook salmon PSC in the Central and Western GOA trawl fisheries does not exceed the

overall FMP limit of 32,500.

#### GOA Chinook salmon PSC action postponed

In April 2017, the Council initiated an analysis evaluating increasing the GOA catcher vessel Chinook salmon PSC cap. The action could have either increased Chinook salmon PSC limits or added flexibility in the form of annual rollovers of unused PSC for trawl vessels targeting Pacific cod, rockfish, and flatfish in the Central and Western GOA. After reviewing alternatives in April 2018, the Council determined that modifying the limit was not appropriate at this time due to concerns about the status of Chinook salmon stocks that are known to occur as bycatch in the GOA non-pollock trawl fishery. The Council also noted the possibility that Federal actions relating to Chinook salmon removals could create an unintended interference with the decadal renegotiation of the Pacific Salmon Treaty between the United States and Canada, which were ongoing in April. The Council did not identify a future time at which this action should be revisited, but signaled its intent to monitor both the status of Chinook salmon stocks and the performance of the PSC-limited GOA trawl catcher vessel sector. The Council will receive a report on Chinook stock status throughout the Pacific coast and on GOA trawl harvest and participation. The report will likely be made sometime in 2019.

## Literature Cited

- NMFS (National Marine Fisheries Service). 2012. Supplemental Biological Opinion on the Re-initiation of Endangered Species Act Section 7 Consultation on Incidental Catches of Chinook Salmon in the Gulf of Alaska Groundfish Fisheries. January 9, 2012. U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, WA.
- NMFS 2009a. Supplemental Biological Opinion Reinitiating Consultation on the January 11, 2007 Biological Opinion regarding Authorization of Bering Sea/Aleutian Islands (BSAI) Groundfish Fisheries. December 2, 2009. U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, WA.  
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- NMFS. 2000. ESA Section 7 Consultation Biological Opinion and Incidental Take Statement. Activities Considered: Authorization of Bering Sea/Aleutian Islands groundfish fisheries based on the Fishery Management Plan for the Bering Sea/Aleutian Islands Groundfish and Authorization of the Gulf of Alaska groundfish fisheries based on the Fishery Management Plan for Groundfish of the Gulf of Alaska. November 30, 2000. NMFS Alaska Region, P. O. Box 21668, Juneau, Alaska 99802. URL:  
[https://alaskafisheries.noaa.gov/sites/default/files/fmp\\_sec07-NOV30\\_2000\\_FINAL.pdf](https://alaskafisheries.noaa.gov/sites/default/files/fmp_sec07-NOV30_2000_FINAL.pdf).



**Table 1. BSAI groundfish fisheries total Chinook salmon incidental catch compared against total groundfish catch: 2004 through 2018**

BSAI Chinook Count			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Trawl Gear	Pelagic	Pollock Target	48,733	67,362	82,695	121,770	21,481	12,406	9,693	25,499	11,344	13,034	15,031	18,329	21,926	30,076	13,724
		Pacific Cod Target	5,599	3,764	3,620	6,287	2,063	1,054	1,256	404	927	864	1,304	1,419	3,354	2,117	1,361
	Non-Pelagic	Flatfish	2,166	2,950	725	1,169	246	166	636	19	175	557	1,173	4,542	6,492	2,339	1,202
		Other Targets	404	135	13	279	308	354	883	644	434	1,537	556	894	746	1,715	1,019
Non-Trawl Gear	All Targets		57	56	31	74	10	11	12	44	50	15	34	69	44	33	72
TOTAL			56,960	74,266	87,084	129,579	24,107	13,990	12,479	26,609	12,930	16,007	18,098	25,254	32,561	36,280	17,379
BSAI Groundfish			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Trawl Gear	Pelagic	Pollock Target	1,452,486	1,461,803	1,474,864	1,341,395	980,866	810,475	803,513	1,198,527	1,202,056	1,247,743	1,257,199	1,294,714	1,318,911	1,333,698	1,347,077
		Pacific Cod Target	109,816	81,230	85,564	93,077	43,859	38,238	36,938	44,978	53,720	53,781	53,862	41,585	56,645	46,571	47,954
	Non-Pelagic	Flatfish	180,893	192,555	194,683	217,734	293,334	245,561	277,416	309,567	324,415	348,303	333,209	269,442	281,728	262,236	263,539
		Other Targets	75,530	78,422	80,320	85,251	83,688	99,496	100,458	81,813	79,235	63,297	70,799	96,213	93,310	107,053	117,011
Non-Trawl Gear	All Targets		160,425	167,103	146,677	122,831	144,323	143,798	136,863	177,669	196,002	193,739	207,206	209,632	216,519	218,128	188,669
TOTAL			1,979,151	1,981,113	1,982,108	1,860,289	1,546,070	1,337,568	1,355,187	1,812,554	1,855,427	1,906,863	1,922,276	1,911,585	1,967,113	1,967,686	1,964,249
BSAI Chinook Rate			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Trawl Gear	Pelagic	Pollock Target	0.034	0.046	0.056	0.091	0.022	0.015	0.012	0.021	0.009	0.010	0.012	0.014	0.017	0.023	0.010
		Pacific Cod Target	0.051	0.046	0.042	0.068	0.047	0.028	0.034	0.009	0.017	0.016	0.024	0.034	0.059	0.045	0.028
	Non-Pelagic	Flatfish	0.012	0.015	0.004	0.005	0.001	0.001	0.002	0.000	0.001	0.002	0.004	0.017	0.023	0.009	0.005
		Other Targets	0.005	0.002	0.000	0.003	0.004	0.004	0.009	0.008	0.005	0.024	0.008	0.009	0.008	0.016	0.009
Non-Trawl Gear	All Targets		0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL			0.029	0.037	0.044	0.070	0.016	0.010	0.009	0.015	0.007	0.008	0.009	0.013	0.017	0.018	0.009

Updated February 8, 2019

**Table 2. GOA groundfish fisheries total Chinook salmon incidental catch compared against total groundfish catch: 2004 through 2018**

Gulf of Alaska Chinook Count			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Trawl Gear	Pelagic	Pollock Target	12,506	26,631	15,564	35,127	10,667	2,916	42,885	12,419	16,004	12,210	10,859	13,450	19,363	21,357	14,326
		Other Targets	-	63	6	304	726	126	148	59	598	154	38	894	8	372	31
	Non-Pelagic	Pollock Target	908	41	882	624	436	111	435	440	291	741	24	162	1,519	35	229
		Pacific Cod Target	2,800	2,853	1,909	2,654	2,804	3,784	7,750	1,349	520	387	278	1,158	34	2,136	401
		Flatfish	885	387	263	1,732	1,514	1,181	1,448	4,481	1,581	7,665	3,300	2,253	598	736	1,503
		Other Targets	646	1,296	380	50	30	278	1,893	1,039	999	2,183	1,209	1,025	384	163	338
Non-Trawl Gear	All Targets	32	-	-	47	-	-	-	-	-	-	4	43	27	174	81	81
TOTAL			17,777	31,270	19,004	40,539	16,176	8,397	54,559	19,787	19,992	23,344	15,750	18,969	22,080	24,881	16,909

Gulf of Alaska Groundfish			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Trawl Gear	Pelagic	Pollock Target	57,984	83,218	73,225	52,832	47,182	39,558	74,743	72,912	99,615	86,277	133,928	162,573	175,713	180,810	153,311
		Other Targets	977	1,433	3,497	4,647	4,522	3,381	4,743	3,905	4,452	2,173	4,308	3,851	2,385	4,682	6,993
	Non-Pelagic	Pollock Target	7,195	897	3,259	1,351	3,556	1,921	2,994	9,328	3,616	9,924	11,756	7,169	4,190	6,263	7,478
		Pacific Cod Target	16,785	12,443	11,403	13,590	22,857	8,736	17,230	13,945	20,075	20,056	21,273	21,745	16,542	14,149	1,728
		Flatfish	20,449	29,622	41,313	42,572	47,085	52,052	42,619	45,608	32,502	38,237	52,634	25,789	28,647	36,779	29,192
		Other Targets	26,094	21,884	22,149	20,337	20,452	22,579	24,203	20,466	23,627	22,980	24,209	27,173	30,134	24,369	27,532
Non-Trawl Gear	All Targets	59,180	50,758	53,912	54,101	56,181	55,019	71,117	85,617	74,846	70,523	78,142	76,280	66,733	54,015	29,472	
TOTAL			188,664	200,254	208,758	189,429	201,835	183,246	237,649	251,782	258,733	250,169	326,251	324,580	324,344	321,067	255,707

Gulf of Alaska Chinook Rate			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Trawl Gear	Pelagic	Pollock Target	0.216	0.320	0.213	0.665	0.226	0.074	0.574	0.170	0.161	0.142	0.081	0.083	0.110	0.118	0.093
		Other Targets	-	0.044	0.002	0.065	0.161	0.037	0.031	0.015	0.134	0.071	0.009	0.232	0.004	0.080	0.004
	Non-Pelagic	Pollock Target	0.126	0.045	0.271	0.462	0.123	0.058	0.145	0.047	0.080	0.075	0.002	0.023	0.363	0.006	0.031
		Pacific Cod Target	0.167	0.229	0.167	0.195	0.123	0.433	0.450	0.097	0.026	0.019	0.013	0.053	0.002	0.151	0.232
		Flatfish	0.043	0.013	0.006	0.041	0.032	0.023	0.034	0.098	0.049	0.200	0.063	0.087	0.021	0.020	0.052
		Other Targets	0.025	0.059	0.017	0.002	0.001	0.012	0.078	0.051	0.042	0.095	0.050	0.038	0.013	0.007	0.012
Non-Trawl Gear	All Targets	0.001	-	-	0.001	-	-	-	-	-	0.000	0.001	0.000	0.003	0.001	0.003	
TOTAL			0.094	0.156	0.091	0.214	0.080	0.046	0.230	0.079	0.077	0.093	0.048	0.058	0.068	0.077	0.066

Updated February 8, 2019



**Table 3. Chinook salmon mortality in BSAI groundfish fisheries (including pollock)**

Year	ANNUAL WITH CDQ	ANNUAL NO CDQ	ANNUAL CDQ	SEASON A	SEASON B	SEASON A	SEASON B	SEASON A	SEASON B
				With CDQ	No CDQ	No CDQ	CDQ Only		
1991	48,880	48,880		46,392	2,488	46,392	2,488		
1992	41,954	41,954		31,418	10,536	31,418	10,536		
1993	46,013	46,013		24,688	21,325	24,688	21,325		
1994	43,821	40,613	3,207	38,921	4,899	36,698	3,915	2,222	984
1995	23,436	21,430	2,005	18,939	4,497	18,284	3,145	654	1,351
1996	63,204	60,744	2,460	43,316	19,888	42,027	18,716	1,288	1,171
1997	50,530	48,046	2,483	16,401	34,128	14,902	33,144	1,499	984
1998	60,548	55,431	5,117	19,869	40,679	18,930	36,500	939	4,178
1999	14,599	12,937	1,662	8,793	5,805	8,204	4,732	589	1,073
2000	8,222	7,473	749	6,567	1,655	6,137	1,336	430	319
2001	40,547	37,986	2,561	24,871	15,676	23,093	14,893	1,778	783
2002	39,683	37,580	2,103	26,276	13,407	24,858	12,722	1,418	685
2003	53,661	50,948	2,713	40,058	13,603	38,262	12,685	1,795	918
2004	60,038	57,028	3,010	30,766	29,272	29,626	27,402	1,140	1,870
2005	75,084	73,028	2,056	33,622	41,462	32,326	40,702	1,296	760
2006	87,115	85,325	1,790	62,547	24,568	60,943	24,381	1,603	187
2007	130,000	124,356	5,644	78,156	51,844	75,062	49,294	3,094	2,550
2008	23,837	23,197	640	18,828	5,009	18,223	4,973	604	36
2009	14,115	13,668	447	11,289	2,825	10,931	2,736	358	89
2010	12,401	12,066	335	9,480	2,921	9,144	2,921	335	0
2011	26,609	25,845	764	7,602	19,007	7,171	18,673	430	334
2012	12,930	12,552	378	8,981	3,949	8,636	3,915	344	34
2013	16,007	15,346	661	9,186	6,821	8,714	6,632	472	189
2015	25,254	23,805	1,449	17,502	7,752	16,453	7,351	1,048	401
2016	32,561	29,576	2,985	25,721	6,840	23,476	6,100	2,245	740
2017	36,280	33,011	3,269	27,008	9,272	24,126	8,884	2,881	388
2018	17,379	15,627	1,752	11,249	6,130	10,167	5,459	1,081	671
2019	7,181	6,583	598	7,181	0	6,582	0	598	0

Updated February 7, 2019

**Table 4. Chinook salmon mortality in BSAI pollock directed fisheries.**

Year	ANNUAL WITH CDQ	ANNUAL NO CDQ	ANNUAL CDQ	SEASON A With CDQ	SEASON B No CDQ	SEASON A No CDQ	SEASON B CDQ Only	SEASON A CDQ Only	SEASON B CDQ Only
1991	40,906	40,906		38,791	2,114	38,791	2,114		
1992	35,950	35,950		25,691	10,259	25,691	10,259		
1993	38,516	38,516		17,264	21,252	17,264	21,252		
1994	33,136	30,572	2,564	28,451	4,686	26,871	3,701	1,580	985
1995	14,984	12,978	2,006	10,579	4,405	9,924	3,053	655	1,351
1996	55,623	53,162	2,460	36,068	19,554	34,780	18,383	1,289	1,172
1997	44,909	42,434	2,475	10,935	33,973	9,445	32,989	1,490	985
1998	56,440	51,322	5,118	16,132	40,308	15,193	36,130	939	4,179
1999	11,978	10,381	1,597	6,352	5,627	5,768	4,614	584	1,013
2000	4,961	4,242	719	3,422	1,539	2,992	1,250	430	289
2001	33,444	30,937	2,507	18,484	14,961	16,711	14,227	1,773	734
2002	34,495	32,402	2,093	21,794	12,701	20,378	12,024	1,416	677
2003	45,661	43,096	2,565	33,478	12,183	30,913	12,183	2,565	0
2004	51,762	48,796	2,966	24,925	26,837	21,959	26,837	2,966	0
2005	68,184	66,251	1,933	27,960	40,224	26,027	40,224	1,933	0
2006	82,752	81,015	1,737	58,547	24,205	56,810	24,205	1,737	0
2007	124,723	116,575	8,148	72,943	51,780	67,323	49,252	5,620	2,528
2008	21,307	20,667	640	16,495	4,811	15,891	4,775	604	36
2009	12,579	12,132	447	9,882	2,697	9,524	2,608	358	89
2010	9,720	9,385	335	7,649	2,071	7,314	2,071	335	0
2011	25,499	24,735	764	7,137	18,362	6,707	18,028	430	334
2012	11,344	10,995	349	7,765	3,579	7,421	3,574	344	5
2013	13,034	12,514	520	8,237	4,797	7,765	4,749	472	48
2015	18,329	17,298	1,031	12,304	6,025	11,523	5,775	781	250
2016	21,926	20,329	1,597	16,828	5,098	15,583	4,746	1,245	352
2017	30,076	27,572	2,504	21,828	8,248	19,712	7,860	2,116	388
2018	13,724	12,433	1,291	8,629	5,095	7,696	4,737	933	358
2019	5,729	5,131	598	5,729	0	5,131	0	598	0

**Notes:**

Starting in 2011, the sampling method for salmon in BS pollock directed fisheries changed to census counts

Non-CDQ data for 1991-2002 from blend program database (bsahalx.dbf)

Non-CDQ data for 2003-2010 from Catch Accounting System database (akfish\_cas2.v\_cas\_psc\_estimate)

Non-CDQ data for 2011-2012 from Catch Accounting System database (akfish\_cas2.v\_cas\_txn\_primary\_psc)

CDQ data for 1992-1997 from blend program database (bsahalx.dbf)

CDQ data for 1998 from blend program database (boatrate.dbf)

CDQ data for 1999-2007 from CDQ catch report database (akfish.v\_cdq\_catch\_report\_total\_catch)

CDQ data for 2008-2010 from Catch Accounting System database (akfish\_cas2.v\_cas\_psc\_estimate)

CDQ data for 2011-2012 from Catch Accounting System database (akfish\_cas2.v\_cas\_txn\_primary\_psc)

A season - January 1 to June 10

B season - June 11 to December 31

For specific pollock season dates by year see <http://www.alaskafisheries.noaa.gov/sustainablefisheries/plckseas.pdf>

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**Table 5. Chinook salmon incidental catch (numbers of salmon) by quarter from 1991 through 2018 in the GOA pollock and other non-pollock groundfish fisheries**

Year	Annual Total	Chinook salmon mortality in GOA groundfish fisheries					Other Fisheries
		GOA Pollock Fisheries					
		First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Annual	
1991	38,893	3,239	538	1,799	2,862	8,438	30,455
1992	16,788	2,289	2,663	1,457	1,801	8,210	8,578
1993	19,260	6,499	157	2,730	4,192	13,578	5,682
1994	13,616	3,685	88	1,973	1,474	7,220	6,396
1995	14,653	1,408	32	2,342	1,136	4,918	9,735
1996	15,761	4,802	57	6,421	100	11,380	4,381
1997	15,229	4,622	48	4,742	30	9,442	5,787
1998	16,983	1,672	1	8,550	4,005	14,228	2,755
1999	30,600	10,408	35	5,981	10,003	26,427	4,173
2000	26,730	4,298	2,313	9,744	2,058	18,413	8,317
2001	15,104	4,204	3,107	754	1,466	9,531	5,573
2002	12,919	1,505	640	553	2,463	5,161	7,758
2003	15,367	765	389	948	2,298	4,400	10,967
2004	17,778	3,632	2,176	2,207	5,137	13,152	4,626
2005	31,271	11,100	5,123	1,076	10,629	27,928	3,343
2006	18,762	2,918	4,292	4,636	3,859	15,705	3,057
2007	40,519	1,525	28,389	1,315	3,866	35,095	5,424
2008	16,264	578	7,691	389	2,087	10,745	5,519
2009	8,475	718	1,406	653	412	3,189	5,286
2010	54,682	4,992	2,038	4,868	32,927	44,825	9,857
2011	19,771	1,712	1,205	1,291	8,635	12,843	6,928
2012	19,992	2,907	861	4,398	8,129	16,295	3,697
2013	23,302	4,469	662	972	6,806	12,909	10,393
2015	18,969	2,592	4,254	2,181	4,585	13,612	5,357
2016	22,080	2,567	1,002	6,242	11,071	20,882	1,198
2017	24,881	9,042	1,713	4,574	6,063	21,392	3,489
2018	16,909	5,144	487	2,549	6,375	14,555	2,354
2019	2,866	2,856				2,856	10

**Note:**

1991 - 2002: Blend data. Week end date was used to determine quarters. Week end dates do not always match quarter dates.

2003 - Current: Catch Accounting System.

Due to changes in regulatory pollock season dates from 1991 to 2001 and to match current pollock season dates, data were grouped by quarter.

Multiple fixes were applied to the Catch Accounting System in early 2014. This has resulted in minor changes in prior years.

First Quarter Jan 1 - Feb 28

Second Quarter Mar 1 - May 31

Third Quarter Jun 1 - Sep 30

Fourth Quarter Oct 1 - Dec 31

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