

MEMORANDUM

State of Alaska DEPARTMENT OF FISH AND GAME

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SUBJECT 2019/20 SEAK Sea
Cucumber Fishery

The commercial harvest of sea cucumbers in Southeast Alaska began on October 7, 2019, with an overall Guideline Harvest Level (GHL) of 1,909,000 pounds of sea cucumbers. The total Southeast Alaska harvest was 1,994,991 pounds, 4.5% over the GHL. The maximum number of divers in any single opening was 184 during the third opening, and a minimum number of three divers participating in the second to last opening on January 13 and 14, 2020. Throughout the season 184 different divers made 1,788 landings with 159 vessels registered to fish for miscellaneous shellfish in Southeast Alaska.

During the 2018 Alaska Board of Fisheries meeting in Sitka board members, Southeast Alaska Regional Dive Fisheries Association (SARDFA), and the department discussed ways to increase the harvest on sea cucumbers. A proposal to manage to the midpoint of the 90% confidence interval was deemed too aggressive by the department; currently it is set at the lower bound. Following discussions between department staff and SARDFA it was decided to increase the harvest rate in the sea cucumber fishery by modifying how the population estimate is calculated based on the biomass assessment model in regulation. 5AAC 38.140 (h) calculates the Guideline Harvest Level (GHL) as $GHL = 3 \times CF \times GF \times M \times P$, where:

- CF=0.4 (scaling factor relating maximum sustainable fishing mortality to unexploited population size)
- GF =0.5 (correction factor to allow for errors in assumptions upon which the surplus production model is based)
- M = 0.32 (estimated instantaneous mortality rate for sea cucumbers)
- P = (most recent biomass estimate, taken as the lower bound of the one-sided 90% confidence interval).

Research staff looked at various models and presented alternative scenarios for consideration. It was decided that a small adjustment to the GF number, an increase from 0.5 to 0.6, was appropriate when applying the change in harvest rate to the Southeast Alaska sea cucumber fishery. This resulted in an annual harvest rate change from 6.4% to 7.7%. Since the sea cucumber areas are open on a three-year rotation the result is a triennial harvest rate of 23.1%, up from 19.2%, of the surveyed biomass for each area with a distinct GHL. This amounted to an increase in the total southeast GHL of approximately 20% for the 2019/20 season.

In the Ketchikan management area, 12 harvest areas were open for a combined GHL of 1,120,900 pounds. The total harvest of sea cucumbers was 1,170,100 pounds, harvested across 14 openings. The final harvest was 4.4% over the GHL. There was an average of 76 divers per week harvesting an average of 1,486 pounds of eviscerated sea cucumbers per week for the season. The majority of the GHL was harvested in the initial five openings, with an average effort of 116 divers harvesting an average of 1,334 pounds per week. The last

opening for the season occurred in the Ketchikan area on January 20 and 21 in Rudyerd Bay and Walker Cove (Subdistricts 101-60, 71 and 73).

In the Petersburg/Wrangell management area, the GHL was 239,500 pounds, in one area, Northern Clarence Strait (Subdistricts 106-10, 20, 22, and 25). The total harvest of sea cucumbers was 240,000 pounds, harvested in six openings. The season harvest was 0.2% over the GHL. Average effort level was 25 divers per week with an average harvest of 1,431 pounds per diver.

In the Juneau management area, the GHL was 315,800 pounds located in four harvest areas. The total harvest of sea cucumbers was 339,000 pounds, harvested in 10 openings with an average of 14 divers per week, and with an average harvest of 1,530 pounds per diver. The total harvest was 7.3 % over the GHL.

In the Sitka management area, the GHL was 232,800 pounds located in three harvest areas. The total harvest of sea cucumbers was 245,846 pounds, harvested in seven openings. An average of 24 divers per week with an average weekly harvest of 1,437 pounds per diver. Sitka management areas harvest was 5.6 % over the established GHL.

In the Ketchikan area, effort for the first week was concentrated in Revilla Channel and Felice Straits (Subdistrict 101-23) where 66 divers harvested 109,000 pounds, representing the highest level of harvest and effort in a given area during one weekly opening. In northern Southeast effort was more dispersed with Northern Clarence Strait (Subdistricts 106-10, 20, 22, and 25) drawing the most effort with 32 divers harvesting 56,000 pounds. After the seventh week, effort throughout Southeast began to drop substantially as many of the areas with larger GHLs closed. Effort dropped from 160 divers to 117 divers between the seventh and eighth openings. Fishery participation continued to decrease to 69 divers during the ninth opening following Thanksgiving on December 2 and 3. A two-week closure during the holiday season was observed. During the thirteenth opening on January 13 and 14, weather was incremental and diver participating dropped to a seasonal low of three divers. The final opening on January 20 and 21 witnessed an increase to 15 divers who harvested in the remaining open area, Rudyerd and Walker Cove (Subdistricts 101-60, 71, 73). This area was given additional time of two full days to provide divers with adequate time to harvest the remaining available GHL during the last four weeks it was open. This area did not reopen after January 21 when its GHL was reached.

There were six processors buying product in the Ketchikan area and 12 throughout Southeast. Ketchikan based EC Phillips and Absolute Seafood, and Alaska Glacier Seafoods (AGS) located in Juneau were the largest buyers of sea cucumbers for the 2019-20 season. EC Phillips processed 616,000 pounds, Absolute Seafoods processed 360,000 pounds, and Alaska Glacier Seafoods processed 357,000 pounds, accounting for 67% of the overall Southeast harvest. AGS had tenders stationed throughout Southeast Alaska.

Ex-vessel value for Southeast Alaska was approximately \$10.3 million based on raw fish ticket data. The ex-vessel value for the Ketchikan area was \$6.04 million. Values were based on an average price of \$5.16/lb. Prices varied by processor, whether the product was sold dockside or to a tender, and whether the product was poked or fully cut. Prices increased as the season progressed with an average \$4.25/lb paid during the first week. This climbed to as high as \$6.30 during the final weeks of the fishery. Final prices are preliminary and there may be a retro check to fishermen in the future.

Port sampling for sea cucumbers was discontinued beginning in the 2006/07 season. GHLs were determined from sampling cucumbers during the preseason biomass survey.

Table 1. Registration Area A (Southeast Alaska) commercial sea cucumber harvest, effort, and value, 1986/87 through 2019/20 seasons.

Season ^a	Guideline Harvest Level (lb)	Total Harvest (lb)	Average Price / lb ^b	Estimated Exvessel Value ^b	Number of Divers	Number of Landings	Average lb / Diver	Average Earnings / Diver ^b
Data prior to 1986/1987 season is confidential.								
1986/87	34,043	34,043	\$0.21	\$7,149	7	44	4,863	\$1,021
1987/88	65,056	65,056	\$0.21	\$13,662	11	143	5,914	\$1,242
1988/89	801,405	801,405	\$0.21	\$169,096	57	922	14,060	\$2,967
1989/90	2,318,305	2,318,305	\$0.42	\$969,142	205	2,263	11,309	\$4,728
1990/91	704,491 ^c	804,184	\$0.59	\$472,386	143	890	5,624	\$3,303
1991/92	839,160 ^c	869,988	\$0.80	\$697,970	187	704	4,652	\$3,732
1992/93	1,100,440	1,249,621	\$0.79	\$988,628	240	1,003	5,207	\$4,119
1993/94	799,235	964,343	\$1.03	\$995,783	320	949	3,014	\$3,112
1994/95	1,351,000	1,322,219	\$1.79	\$2,361,541	261	1,379	5,066	\$9,048
1995/96	1,157,500	1,332,095	\$1.39	\$1,846,556	424	1,582	3,142	\$4,355
1996/97	939,300	909,789	\$1.29	\$1,169,612	294	1,234	3,095	\$3,978
1997/98	892,410	894,739	\$1.63	\$1,458,425	226	976	3,959	\$6,453
1998/99	1,026,345	1,055,572	\$1.55	\$1,636,137	219	971	4,820	\$7,471
1999/00	1,580,000	1,569,626	\$1.95	\$3,060,771	200	1,378	7,848	\$15,304
2000/01	1,122,500	1,158,385	\$2.23	\$2,583,199	220	913	5,265	\$11,742
2001/02	1,425,200	1,438,451	\$1.75	\$2,517,289	235	1,201	6,121	\$10,712
2002/03	1,576,700	1,639,440	\$1.26	\$2,042,882	201	1,313	8,156	\$10,164
2003/04	1,637,700	1,698,650	\$1.42	\$2,472,456	195	1,296	8,711	\$12,679
2004/05	1,381,200	1,374,532	\$2.12	\$2,769,116	194	1,139	7,085	\$14,274
2005/06	1,475,800	1,437,731	\$2.00	\$2,875,462	198	1,418	14,523	\$14,523
2006/07	1,598,700	1,597,457	\$1.97	\$3,146,990	175	1,237	17,983	\$17,983
2007/08 ^d	1,384,300	1,449,301	\$2.43	\$3,774,428	181	1,290	7,923	\$21,086
2008/09	1,122,100	1,102,637	\$2.30	\$2,536,065	176	1,072	6,301	\$13,078
2009/10	1,574,700	1,610,826	\$2.34	\$3,769,333	169	1,240	9,532	\$22,304
2010/11	1,262,800	1,274,541	\$2.52	\$3,211,843	180	1,109	7,081	\$17,841
2011/12	999,000	1,023,834	\$5.06	\$5,180,600	189	1,043	5,417	\$27,411
2012/13	1,476,000	1,512,895	\$4.05	\$6,127,225	199	1,369	7,602	\$30,790
2013/14	1,472,600	1,556,983	\$3.97	\$6,181,223	198	1,396	7,864	\$31,218
2014/15	1,084,800	1,073,554	\$4.00	\$4,294,216	171	1,022	6,278	\$25,083
2015/16	1,439,900	1,525,387	\$3.50	\$5,338,855	175	1,278	8,716	\$30,508
2016/17	1,243,200	1,319,798	\$3.93	\$5,279,192	169	1,206	7,809	\$31,238
2017/18	1,233,900	1,294,637	\$5.25	\$6,796,844	175	1,211	7,398	\$38,839
2018/19	1,757,600	1,768,104	\$5.37	\$9,510,249	184	1,606	9,625	\$51,686
2019/20	1,909,000	1,994,991	\$5.16	\$10,294,153	184	1,788	10,842	\$65,921

^a Season = October 1 thru September 30. Experimental fishing program prior to 1990/1991 season.

^b Based on CFEC (annual) data prior to the 1998/1999 season, then based on ADF&G fish ticket data.

^c Quota originally calculated in numbers of sea cucumbers.

^d Does not include data for the Yakutat sea cucumber fishery.

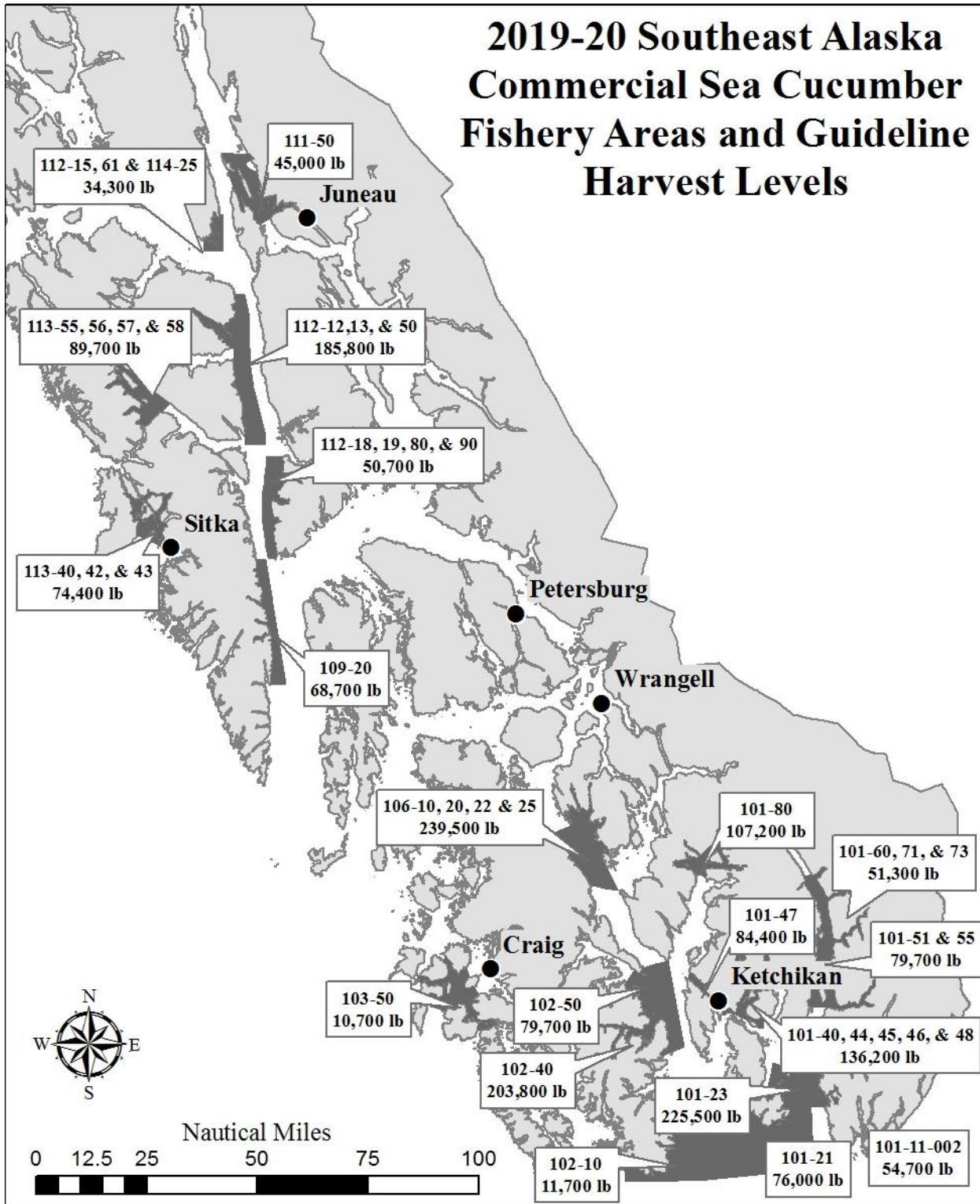


Figure 1. Map of open sea cucumber areas in the 2019/20 season.