

**Fall, James A. and David S. Koster. 2014. Subsistence Harvests of Pacific Halibut in Alaska, 2012. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 388--Public Review Draft, Anchorage.**

## **EXECUTIVE SUMMARY**

This report presents findings of a project designed to estimate the subsistence harvest of Pacific halibut *Hippoglossus stenolepis* in Alaska in 2012. The Alaska Department of Fish and Game (ADF&G) Division of Subsistence conducted the project under National Oceanic and Atmospheric Administration (NOAA) award number NA11NMF4370059 from the U.S. Department of Commerce, NOAA National Marine Fisheries Service (NMFS). In May 2003, NMFS published federal regulations implementing a subsistence halibut fishery in Alaska for qualified individuals who are residents of 118 rural communities or members of 123 Alaska Native tribes with traditional uses of halibut. The year 2012 was the tenth in which subsistence halibut fishing took place under these regulations. Subsistence fishers are required to obtain a Subsistence Halibut Registration Certificate (SHARC) from NMFS before fishing. During 2012, 9,944 individuals held SHARCs, compared to a high of 15,047 at the end of 2007 and a previous low of 10,953 at the end of 2010. The number of valid SHARCs in 2012 was 22% below the previous 9-year average.

Harvest information was collected by means of a postal (mailed) survey. The 1-page survey form was mailed to all SHARC holders in early 2013, with 2 follow-up mailings. Household visits supplemented the mailings in 5 communities in Southeast Alaska. In total, 7,054 surveys were returned, a response rate of 71%, the highest of any study year. Participation in the survey was voluntary.

According to the project findings, an estimated 4,394 individuals participated in the subsistence halibut fishery in 2012. This was the lowest number of participants since the SHARC program began. The previous low was 4,705 subsistence halibut fishers in 2011, and the highest estimate was 5,984 in 2004.

The estimated harvest in 2012 was 37,093 halibut ( $\pm 2.9\%$ ) comprising 686,991 lb (net weight;  $\pm 2.9\%$ ), the lowest totals for the 10 years of the project. ("Net weight" is 75% of "round" or live weight; the estimated harvest was 915,988 lb round weight.) This compares to an estimated high of 55,875 fish ( $\pm 3.0\%$ ) comprising 1,178,222 lb ( $\pm 3.0\%$ ) in 2005 and a previous low of 38,162 halibut ( $\pm 2.8\%$ ) comprising 697,656 lb ( $\pm 2.7\%$ ) in 2011. As measured in pounds, the 2012 harvest was about 2% lower than the estimated harvest in 2011, and 30% lower than the previous 9-year average from 2003–2011.

Of the total subsistence halibut harvested in 2012, 532,623 lb (78%) were harvested with setline (stationary) gear (i.e., longlines, or "skates") and 154,368 lb (22%) were harvested with hand-operated gear (i.e., rod and reel or handline). This was similar to the harvest by gear type in 2003–2011. Of those subsistence fishers using setline gear in 2012, the most (41%) usually fished with 30 hooks, the maximum number allowed by regulation in all areas except areas 4C, 4D, and 4E, where regulations establish no hook limit.

Subsistence fishers also harvested an estimated 9,568 rockfish *Sebastes* spp. and 2,247 lingcod *Ophiodon elongatus* in 2012 while fishing for halibut. These were the lowest estimates for any year of the study. The highest estimated harvests were 19,001 rockfish and 4,407 lingcod in 2004 and previous low harvests were 10,853 rockfish and 2,305 lingcod in 2011.

Based upon fishing locations, the largest portion of the Alaska subsistence halibut harvest in 2012 occurred in Regulatory Area 2C (Southeast Alaska), with areas ranking as follows:

- Area 2C (Southeast Alaska), 58% (396,043 lb);
- Area 3A (Southcentral Alaska), 37% (253,516 lb);
- Area 3B (Alaska Peninsula), 2% (15,959 lb);
- Area 4A (Eastern Aleutian Islands), 1% (9,543 lb);
- Area 4E (East Bering Sea Coast), 1% (8,384 lb);
- Area 4B (Western Aleutian Islands), less than 1% (1,698 lb);

- Area 4C (Pribilof Islands), less than 1% (1,176 lb); and
- Area 4D (Central Bering Sea), less than 1% (672 lb).

In 2003–2011 as well, Area 2C and Area 3A accounted for over 85% of the subsistence halibut harvests. The proportion of the statewide subsistence halibut harvest occurring in Area 2C has ranged from an estimated high of 60% in 2003 to an estimated low of 51% in 2005 and 2007. Correspondingly, the portion occurring in Area 3A has ranged from an estimated high of 39% in 2010 to an estimated low of 27% in 2003.

Preliminary data from the International Pacific Halibut Commission (IPHC) combined with the findings of this project indicate that 42.491 million pounds (net weight) of halibut were removed from Alaska waters in 2012. Of this total, the subsistence harvest accounted for 1.7%. Commercial harvests took 59.9% of the halibut, followed by bycatch in other commercial fisheries (22.5%), sport harvests (12.6%), and wastage in the commercial fishery (3.3%).

This report describes the results of the tenth annual project to estimate the subsistence halibut harvest in Alaska since NMFS adopted rules governing subsistence halibut fishing in May 2003. The harvest estimates based on the SHARC surveys for the 2003–2012 fishing seasons serve as a basis for understanding the overall harvest, annual variability in catch, and trends in harvest since implementation of the new regulations. Demonstrating changes in the magnitude of the Alaska subsistence halibut harvest resulting from the new regulations using the results of the SHARC surveys for 2003–2012 is problematic, however, because of the limitations of earlier harvest estimates at the statewide level. The subsistence harvest estimates for 2003–2012 for some of the larger communities—such as Sitka, Petersburg, and Kodiak, which account for the majority of the harvest—are not markedly different from the range of harvest estimates based on household surveys prior to the new regulations. The higher overall harvest estimates for 2004–2006 compared to 2003 may be due to more thorough registration of subsistence fishers, hence better harvest documentation. The lower total Alaska harvest in net pounds in 2008–2012 compared to the previous 5 years appears to be the result of fewer registered SHARC holders, fewer estimated participants in the fishery, lower average harvests per fisher, and a decline in the average size of the harvested halibut over the 10 years of the study (i.e., from 23.7 lb per fish in 2003 to 18.5 lb per fish in 2012). In Area 4, substantial drops in SHARC registrations and survey responses may be resulting in an underestimate of subsistence halibut harvests in that area.

The report concludes that 686,991 net pounds is a sound estimate of the Alaska subsistence halibut harvest in 2012. The estimate is based upon a scientific sampling of SHARC holders and a relatively high response rate. The total estimated harvest falls below the 1.5 million net pounds estimated for the subsistence harvest when the current regulations were developed by the North Pacific Fishery Management Council (see <http://www.fakr.noaa.gov/frules/70fr16742.pdf>, page 16,748). The 2012 harvest estimate was 30% below the average for the previous 9 project years and continued a trend of lower statewide harvests that began in 2005. The causes of this decline in estimated harvests are complex, and there is no certainty that the trend will persist.

Due to budget constraints, a survey to estimate subsistence halibut harvests in Alaska will not occur for harvest year 2013. The report recommends that monitoring of the subsistence halibut harvest in Alaska resume in the future, based on an analysis of the data collected for 2003–2012 and an ethnographic study of subsistence halibut fishing in selected communities, so that trends in the fishery in terms of participation, location of harvests, and harvest quantities can be better understood.