



# Subsistence in Alaska: A Year 2017 Update

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## Introduction

Subsistence fishing and hunting are important for the economies and cultures of many families and communities in Alaska. Subsistence uses exist alongside other important uses of fish and game in Alaska, including commercial fishing, sport fishing, personal use fishing, and general hunting. This report provides an update on subsistence fishing and hunting in Alaska, including the dual state–federal management system.

## What is Subsistence Hunting and Fishing?

State and federal laws define subsistence uses as the “customary and traditional uses” of wild resources for food, clothing, fuel, transportation, construction, art, crafts, sharing, and customary trade. Subsistence uses are central to the customs and traditions of many cultural groups in Alaska, including Aleut, Athabaskan, Alutiiq, Euro-American, Haida, Inupiat, Tlingit, Tsimshian, and Yupik. State law (AS 16.05.258(c)) requires the Joint Board of Fisheries and Game to identify “nonsubsistence areas” where subsistence is not “a principal characteristic of the economy, culture, and way of life.” Outside these nonsubsistence areas, called “rural areas” in this overview, subsistence fishing and hunting are important sources of employment and nutrition.

Commercial fishing differs from subsistence fishing because it is harvesting fish for sale in commercial markets. Subsistence-taken fish and game cannot be commercially sold. Personal use fishing is similar to subsistence fishing, except that it is fishing with efficient gear for food in nonsubsistence areas, particularly by residents of urbanized areas, or fishing for stocks without customary and traditional uses. Sport fishing and hunting differ from subsistence

fishing and hunting in that, although food is one product, they are conducted primarily for recreational values during breaks from work, following principles of “fair chase.” Outside nonsubsistence areas, subsistence harvesting and processing are productive, traditional economic activities that are part of a normal routine of work.

## Who Qualifies to Participate in Subsistence Harvesting?

Federal and state laws currently differ in who qualifies for participation in subsistence fisheries and hunts. Rural Alaska residents qualify for subsistence harvesting under federal law. Under state law, only rural residents qualified for subsistence harvesting from 1978–1989. Since 1989, all state residents have qualified under state law. In 2017, about 83% of Alaska’s population (613,958 people) lived in nonsubsistence areas (urban areas) defined by the Joint Board of Fisheries and Game and about 17% (123,122 people in 264 communities) lived in rural areas (outside nonsubsistence areas) (Figure 1). In 2010, 55% of Alaska’s rural population and 12% of the urban population were Alaska Native.

## Who Participates in Subsistence Uses?

Most families outside Alaska’s nonsubsistence areas depend on subsistence fishing and hunting. A substantial proportion of these households harvest and use wild foods (Figure 2). For surveyed communities outside nonsubsistence areas, 92%–100% of sampled households used fish, 79%–92% used wildlife, 75%–98% harvested fish, and 48%–70% harvested wildlife. Because subsistence foods are widely shared, most residents of these communities use subsistence foods during the course of the year. Under state law,

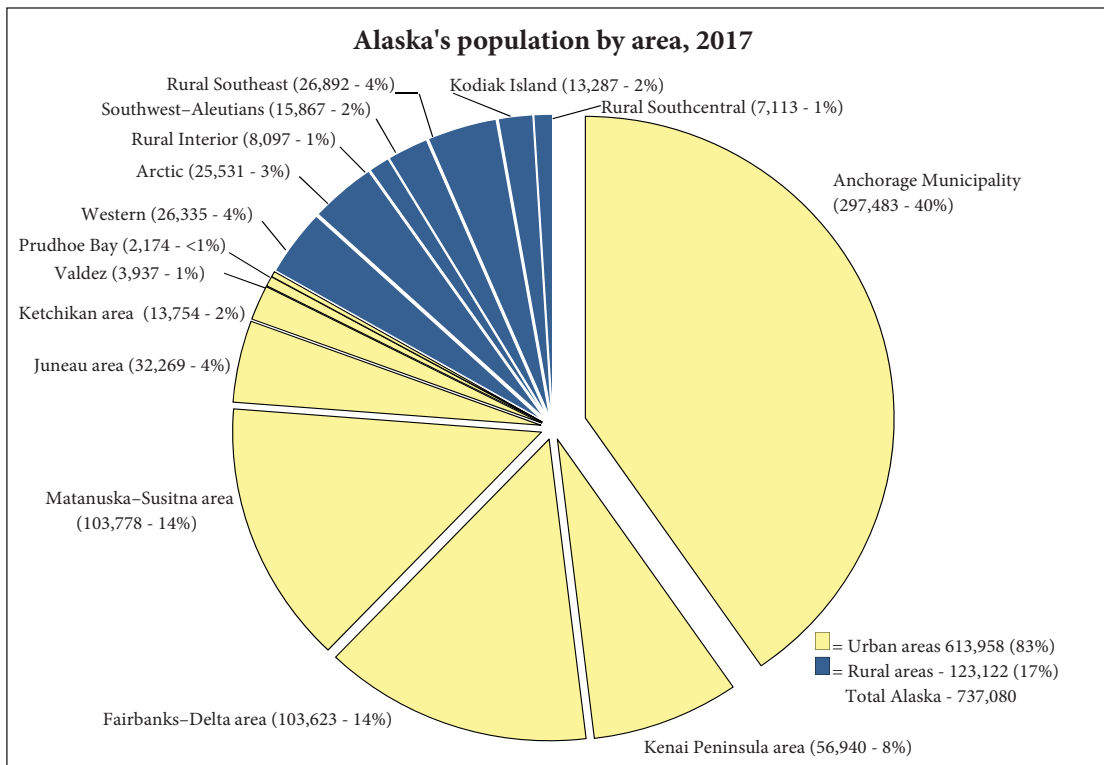


Figure 1

Percentage of households participating in subsistence activities in rural areas				
Area	Harvesting game	Using game	Harvesting fish	Using fish
Arctic	63%	92%	78%	96%
Interior	69%	88%	75%	92%
Southcentral	55%	79%	80%	94%
Southeast	48%	79%	80%	95%
Southwest	65%	90%	86%	94%
Western	70%	90%	98%	100%
<b>Total rural</b>	<b>60%</b>	<b>86%</b>	<b>83%</b>	<b>95%</b>

Figure 2

residents of nonsubsistence areas may also participate in authorized subsistence fisheries and hunts to harvest food and for other uses.

### What is the Composition of the Wild Food Harvest?

Outside the nonsubsistence areas, most of the wild food harvested by local residents is composed of fish (about 54% by weight), along with land mammals (22%), marine mammals (14%), birds (3%), shellfish (3%), and plants (4%) (Figure 3). Fish varieties include salmon (32% of all harvests), Pacific halibut, Pacific herring, and whitefishes. Seals, sea lions, walruses, and whales compose the marine mammal harvest. Moose, caribou, deer, bears, Dall sheep, mountain goats, and beavers are commonly used land mammals, depending on the community and area. These harvests for food occur within a range of regulatory categories, including subsistence and general hunting, and subsistence, personal use, and rod and reel fishing.

### How Large is the Subsistence Harvest?

The subsistence food harvest by Alaska residents (about 33.6 million lb excluding wild plants) represents about 0.9% of the fish and game harvested annually in Alaska (Figure 4). This total

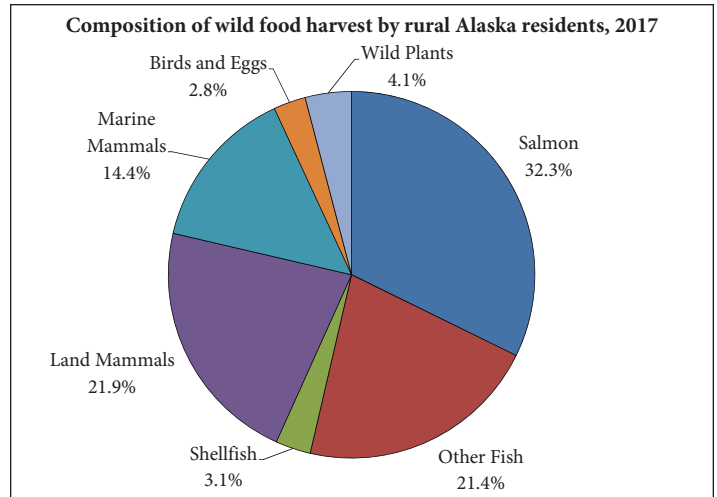


Figure 3

includes all noncommercial harvests by residents of rural areas plus harvests taken under subsistence fishing and hunting regulations by residents of nonsubsistence areas. Personal use fishing, and hunting under general regulations by Alaskans, produce an additional 0.2% of all harvests. Sport fishing and hunting (sport fishing by Alaskans and nonresidents and all nonresident hunting) take 0.3%. Commercial fisheries account for the balance—about 98.6% of the statewide harvest.

Though relatively small in the statewide picture, subsistence fishing, hunting, and gathering provide a major part of the food supply of rural Alaska (see figures 5 and 6). Our best estimate is about 34.0 million lb (usable weight) of wild foods are harvested annually by residents of rural areas of the state, and 11.4 million lb by urban residents in all noncommercial fisheries and hunts (see Figure 6). On a per person basis, the annual wild food harvest is about 276 lb per person per year for residents of rural areas (about

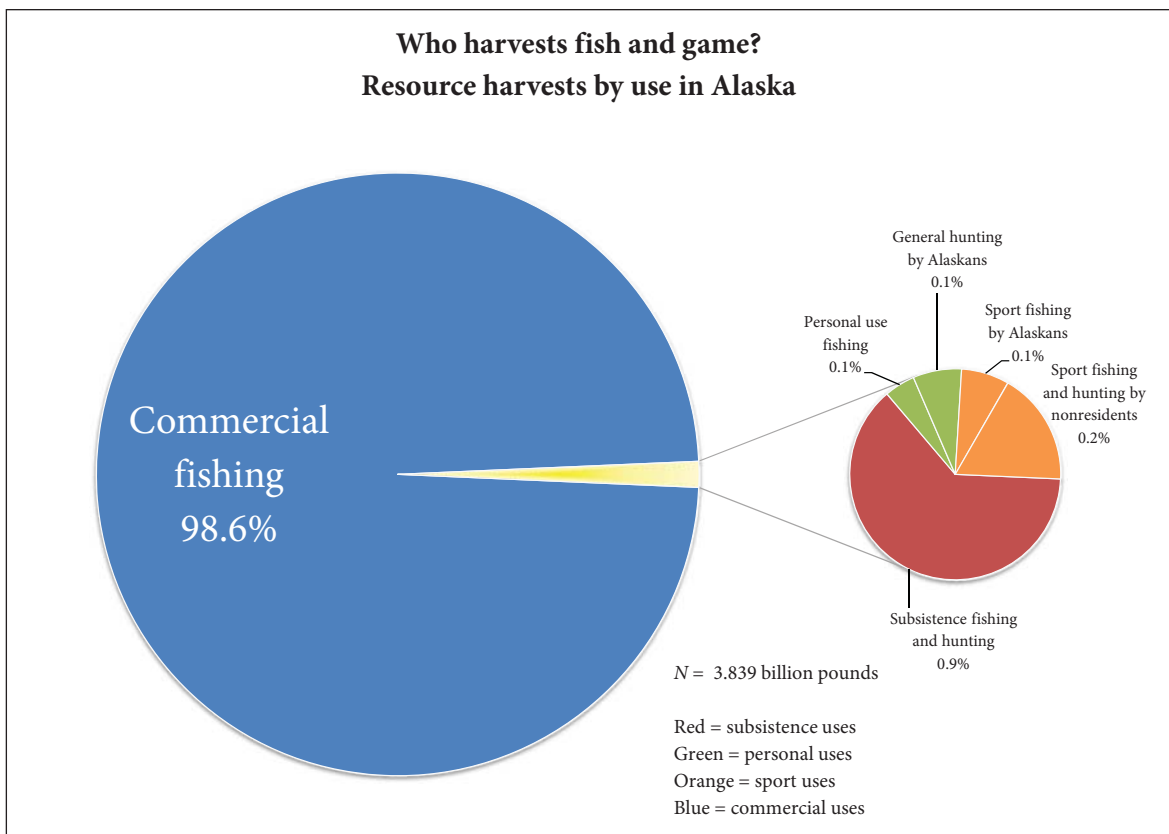


Figure 4

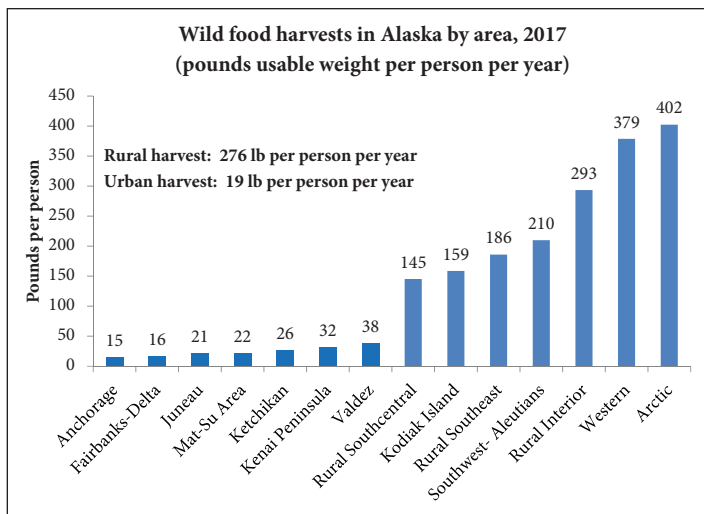


Figure 5

0.75 lb a day per person), and 19 lb per person per year for urban areas (see Figure 5).

### Nutritional Value of Subsistence

Fish and wildlife harvests for food provide a major part of the nutritional requirements of Alaska’s rural population, and lesser, but notable, percentages in urban areas. The annual rural harvest of 276 lb per person contains 176% of the protein requirements of the rural population (that is, it contains about 81 grams of protein per person per day; about 46 grams is the mean daily requirement (see Figure 6). The subsistence harvest contains 25% of the caloric requirements of the rural population (that is, it contains about 518 kcal daily, assuming a 2,100 kcal/day mean daily requirement). The urban wild food harvests contain 12% of the protein requirements and 2% of the caloric requirements of the urban population (see Figure 6).

### Traditional Harvest Areas

Studies show that Alaska subsistence hunters, fishers, and gatherers tend to harvest in traditional use areas surrounding their communities. Subsistence harvest areas are accessible from the community, although seasonal camps are used to access some species. Subsistence harvest areas for communities are definable and relatively predictable. Reports in the Division of Subsistence *Technical Paper Series* include maps of traditional use areas.

### Monitoring Subsistence Harvests

Subsistence harvests vary from year to year for a variety of environmental, economic, and personal factors. Subsistence harvests of all resources are not monitored annually. However, ADF&G conducts programs to estimate harvests of salmon and some other key resources each year, which help track trends. For example, thousands of families along the Yukon River participate in post-season surveys to estimate annual subsistence salmon harvests. Findings for communities of the Kusilvak (Lower Yukon) Census Area show subsistence salmon harvests dropped from an annual average of 98 lb per person for 2000–2008 to 71 lb per person for 2009–2017. Declining Chinook salmon returns since the late 2000s are largely responsible for this change: subsistence harvests of Chinook salmon averaged 45 lb per person in these communities in 2000–2004 compared to just 7 lb per person during 2013–2017 (Figure 7). Such systematic monitoring of subsistence harvests will be important in the future to understand the potential effects of resource development and climate change.

### The Monetary Value of Subsistence Harvests

Subsistence fishing and hunting are a principal characteristic of the rural Alaska economy. Attaching a dollar value to wild food harvests is difficult, because subsistence products do not circulate in markets. However, if families did not have subsistence foods, substitutes would have to be purchased. If one assumes a replacement expense of \$5.00–\$10.00 per pound, the simple “replacement value” of the

Wild food harvests in Alaska: Nutritional and replacement values						
	Annual wild food harvest (pounds per person)	Annual wild food harvest (total pounds)	Percent of population's required:		Estimated wild food replacement value @ \$5.00/pound	
			Protein (46 grams/day)	Calories (2100 kcal/day)		
<b>Rural Areas</b>						
Rural Southcentral	145	1,032,896	93%	13%	\$5,164,479	
Kodiak Island	159	2,106,866	101%	14%	\$10,534,332	
Rural Southeast	186	4,996,351	119%	17%	\$24,981,756	
Southwest-Aleutians	210	3,331,143	134%	19%	\$16,655,713	
Rural Interior	293	2,797,785	187%	26%	\$13,988,923	
Western	379	9,427,608	242%	34%	\$47,138,039	
Arctic	402	10,269,886	257%	36%	\$51,349,428	
<i>Subtotal</i>	<u>276</u>	<u>33,962,534</u>	<u>176%</u>	<u>25%</u>	<u>\$169,812,669</u>	
<b>Urban Areas</b>						
Anchorage Area	15	4,447,633	9%	1%	\$22,238,163	
Fairbanks-Delta	16	1,829,072	10%	1%	\$9,145,362	
Juneau Area	21	2,257,007	13%	2%	\$11,285,034	
Mat-Su Area	22	1,713,258	14%	2%	\$8,566,292	
Ketchikan Area	26	359,357	17%	2%	\$1,796,787	
Kenai Peninsula	32	151,750	20%	3%	\$758,750	
Valdez	38	686,167	24%	3%	\$3,430,833	
<i>Subtotal</i>	<u>19</u>	<u>11,444,244</u>	<u>12%</u>	<u>2%</u>	<u>\$57,221,221</u>	
<b>Alaska Total</b>	<b>62</b>	<b>45,406,778</b>	<b>39%</b>	<b>6%</b>	<b>\$227,033,890</b>	

Figure 6

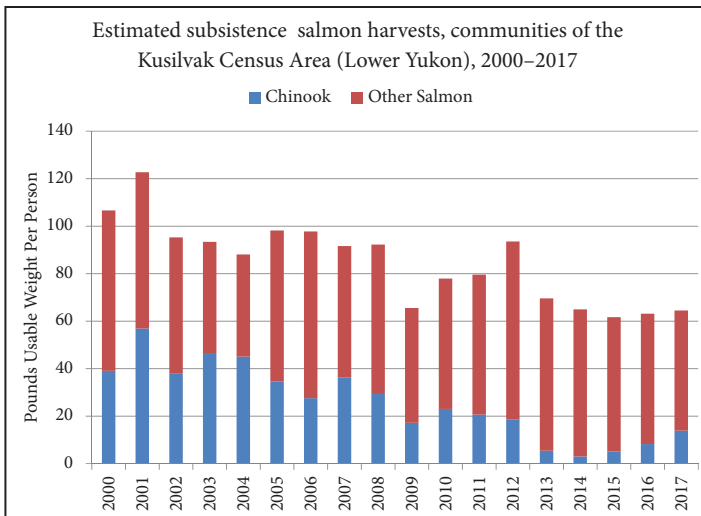


Figure 7

wild food harvests of communities outside nonsubsistence areas may be estimated at \$170–\$340 million annually, and at \$227–\$454 million for all Alaska communities (see Figure 6).

### Subsistence and Money

Outside Alaska’s nonsubsistence areas, subsistence is part of an economic system called a “mixed, subsistence-market” economy. Families invest money into small-scale, efficient technologies to harvest wild foods, such as fish wheels, gillnets, motorized skiffs, and snowmachines. Subsistence food production is directed toward meeting the self-limited needs of families and small communities, not market sale or accumulated profit as in commercial market production. Families follow a prudent economic strategy of using a portion of the household monetary earnings to capitalize in subsistence technologies for producing food. This combination of money from paid employment and subsistence food production is what characterizes the mixed, subsistence-market economies outside nonsubsistence areas. Successful families in these areas combine jobs with subsistence activities and share wild food harvests with cash-poor households who cannot fish or hunt, such as elders, the disabled, and single parents with small children.

### Dual Subsistence Management

Subsistence fishing and hunting in Alaska are regulated by the State of Alaska and the federal government, depending upon where the harvests occur. This system is called a “dual management system” because there are overlapping state–federal jurisdictions in many areas. The federal government regulates federal subsistence fisheries and hunts on federal public lands and federally-reserved waters in Alaska. The State of Alaska regulates state subsistence fisheries and hunts on all Alaska lands and waters. A harvester should consult both the federal subsistence regulation booklets and the state subsistence fishing and general hunting regulations booklets to be apprised of the complete set of hunting or fishing regulations in a particular area.

The Alaska Board of Fisheries and the Alaska Board of Game create regulations for state subsistence fisheries or hunts. The Federal Subsistence Board creates regulations for federal subsistence fisheries or hunts. In creating regulations, each board follows established procedures for obtaining information and comments on proposed regulations from the public, agencies, and other interests.

Hunting of marine mammals is managed by the federal government through the National Marine Fisheries Service (seals, sea lions, and whales) or the U.S. Fish and Wildlife Service (polar bears, sea otters, and walrus). There is an exemption in the federal Marine

Mammal Protection Act to allow for the traditional harvest and use of marine mammals by coastal Alaska Natives. Spring and summer subsistence hunting of migratory waterfowl is managed by the U.S. Fish and Wildlife Service. Federal regulations limit participation to residents of designated rural areas. Subsistence fishing for Pacific halibut is managed by the National Marine Fisheries Service. Federal regulations limit participation to residents of designated rural areas and members of eligible tribes.

Subsistence hunting and fishing are restricted in non-rural areas of Alaska by the federal and state programs. Federal law allows subsistence harvests only by residents of rural areas. State law permits subsistence harvests by any Alaska resident in areas outside the boundaries of “nonsubsistence areas.” The Alaska Joint Board of Fisheries and Game has determined that the areas around Anchorage, the Matanuska–Susitna Valley, the Kenai Peninsula, Fairbanks, Juneau, Ketchikan, and Valdez are nonsubsistence areas, where fish and game harvests may be allowed under sport, personal use, general, or commercial regulations, but not under subsistence regulations. The Federal Subsistence Board has defined similar non-rural areas.

### The Subsistence Priority

Subsistence uses of fish and land mammals are given a priority over commercial fishing and recreational and personal use fishing and hunting in state and federal law. This means that when the harvestable portion of a fish stock or game population is not sufficient for all public uses, subsistence uses are restricted last by regulation. Access by non-federally qualified individuals to some fisheries and hunts has been restricted when harvestable surpluses have declined; but, by and large, fishers and hunters living in nonsubsistence areas have not experienced major changes in harvest opportunities due to the subsistence priority. General hunting and sport fishing regulations continue to provide opportunities for all Alaska residents and nonresidents. Personal use net fisheries provide for established food fisheries of urban residents in areas closed to subsistence fishing. State subsistence fisheries and hunts are open to all Alaskans regardless of residence.

For example, during the 11-year period when the rural priority was being implemented under state management (1978–1989), general resident hunting seasons for caribou increased by 36% (from 5,505 days to 7,500 days), moose hunting days decreased by 10% (from 2,961 days to 2,671 days), and Dall sheep hunting days increased by 2% (from 1,855 days to 1,900 days)—comparing the 1978–1979 resident season with the 1989–1990 resident season. That is, during this period, hunting days by urban hunters for caribou, moose, and sheep were not significantly changed by the rural subsistence priority.

The greatest effect of subsistence laws in Alaska has been to recognize customary and traditional harvest practices and uses outside of nonsubsistence areas. Because of the laws, the Alaska Boards of Fisheries and Game and the Federal Subsistence Board have created subsistence regulations designed to provide opportunities for the continued harvest of the food supply so necessary in much of Alaska. While impacts on recreational and personal use fishing and hunting and on commercial fishing have been relatively small when sufficient resources have been available, the benefits for many families have been great. Alaska residents have a legally protected opportunity to fish and hunt to feed their families following long-term customs and traditions.

Prepared by James A. Fall, Division of Subsistence, ADF&G, December 2018.

Original: Robert J. Wolfe, Division of Subsistence, ADF&G, March 2000.

For a copy of the Alaska Department of Fish and Game OEO statement, see

<http://www.adfg.alaska.gov/index.cfm?adfg=home.oestatement>.