



Indicator 6.39

Area and Percent of Forests Used for Subsistence, 2013–2023

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What is this indicator and why is it important?

This indicator reports the area and percentage of U.S. forests that are used for subsistence activities. In the United States, subsistence rights are codified through Federal laws, State constitutions, and Federal treaties with Tribal Nations and Canada. These bodies of legislation protect subsistence rights in Alaska, the Pacific Northwest (States of Washington and Oregon), Hawaii, and the Great Lakes region (States of Minnesota, Wisconsin, and Michigan), which are the focus of this analysis. More specifically, Alaska and Hawaii are the only States to codify in their constitutions the rights of residents, Indigenous or not, to participate in subsistence activities. In all States in the United States, permits are allocated at the State level for hunting and fishing, although exact locations and quantities of harvest are difficult to measure, and these activities may be for recreation, subsistence, or other purposes.

Alaska has a particularly rich tradition of subsistence, and there is more information available on subsistence activities in Alaska as compared to other States. Alaska State law defines subsistence as the “customary and traditional uses of wild resources for food, clothing,

fuel, transportation, construction, art, crafts, sharing, and customary trade” (Alaska Department of Fish and Game 2024). Of note, an individual does not need to acquire a majority of their calories from wild harvested food (e.g., through hunting, fishing, and gathering) for the harvesting to be considered a subsistence activity (Tausch 2021). Subsistence practices can be for survival but are also significant for cultural and spiritual practices, especially for many Indigenous groups. Subsistence is an important right for many Indigenous Peoples because it allows them to continue a way of life that has existed for generations.

What does the indicator show?

The area and percentage of forests used for subsistence activities in the United States are difficult to measure and track. National data collection mechanisms or procedures that quantify the location and intensity of subsistence activities on all forested lands do not exist. However, the amount of land where subsistence activities are legally allowed and recognized can be measured for some regions. As a result, this report primarily focuses on subsistence activities in forests in Alaska and the Lake States region; however, the report

also includes brief discussions on subsistence activities in areas that may feature forests including shorelines in Hawaii and watersheds in the Pacific Northwest, as this is the best information available related to subsistence activities in these regions. For the analysis in Alaska, spatial data (i.e., land cover and jurisdictional boundaries) are used to estimate area of forest land that may be utilized for subsistence activities. For the analysis of subsistence activities in the Lakes States region, data on the harvesting of edible species from the Great Lakes Indian Fish & Wildlife Commission are reported.

Hawaii

Subsistence activities can be associated with shorelines and aquatic environments, which are legally protected in Hawaii. The Department of Land and Natural Resources in Hawaii has designated three “community-based subsistence fishing areas” (as of January 2024). These areas allow community members to participate in subsistence activities if they follow traditional practices. While they primarily protect offshore areas, the community-based subsistence fishing areas include some forested areas near coastlines. However, fishing is the only permitted subsistence activity (State of Hawai‘i Division of Aquatic Resources 2024).

Alaska

Alaska’s State legislature passed the first subsistence statute in 1978 that “recognize[s] the customary and traditional use of Alaska’s wild resources for subsistence” (State of Alaska Department of Law 2023). Initially, the legislation gave priority to rural residents, but the State’s supreme court ruled this was unjust because of the “equal access rule,” meaning that all residents of Alaska have equal access to fish and game. The Federal Government passed the Alaska National Interest Lands Conservation Act (ANILCA) in 1980, which protects the rights of residents to engage in subsistence activities on Federal lands, yet this legislation specifically references rural residents and their needs (16 U.S.C. 3112(a), 3113, 3114, 3121(a) [2023]). For the purpose

of ANILCA, a rural resident is a “resident of a rural community or area” where a rural community or area is defined as “a community or area substantially dependent on fish and wildlife for nutritional and other subsistence uses” (16 U.S.C. 3113). Thus, the State and Federal laws on subsistence differ, with State laws applying to all residents and rural Alaska residents having priority under Federal law, meaning rural residents can harvest on both State and Federal lands while urban residents can only harvest on State lands. The discrepancy in protections has caused issues in Alaska because urban residents can unknowingly cross from State to Federal land and inadvertently break the law (DeMarban 2024). The distinction between urban and rural communities is relevant because rural Alaskan residents harvest far more than urban residents. According to the Alaska Department of Fish and Game, rural residents harvested an average of 275 pounds of food per person in 2014, whereas urban residents harvested an average of 19 pounds of food per person that year (Fall 2016).

Alaska spans 665,384 square miles, of which approximately 65 percent is federally owned and 25 percent is State owned (Alaska Division of Community and Regional Affairs 2023). The National Land Cover Database (NLCD) categorizes land cover types using satellite imagery. The NLCD defines forested land cover types as, “areas dominated by trees generally greater than five meters tall, and greater than 20 percent of total vegetation cover” (MRLC 2021). NLCD data provide land cover estimates, which offer a mechanism for approximating forest land extent and public and private land delineations in Alaska for the time period evaluated. (NLCD land cover estimates are not the same as land use estimates that characterize the social and economic intent for which land is used, regardless of sometimes temporary vegetative changes in land cover from satellite data.) According to the 2016 NLCD (MRLC 2016), approximately 130 million acres in Alaska are forest land that could be used for subsistence activities. Of this total, 49 million acres (~38 percent) are owned by the State and 80 million acres (~62 percent) are federally owned (fig. 39-1). Not all Federal or State forest land in Alaska is suitable for subsistence activities, but it is legal to harvest on those lands (excluding marine mammals).

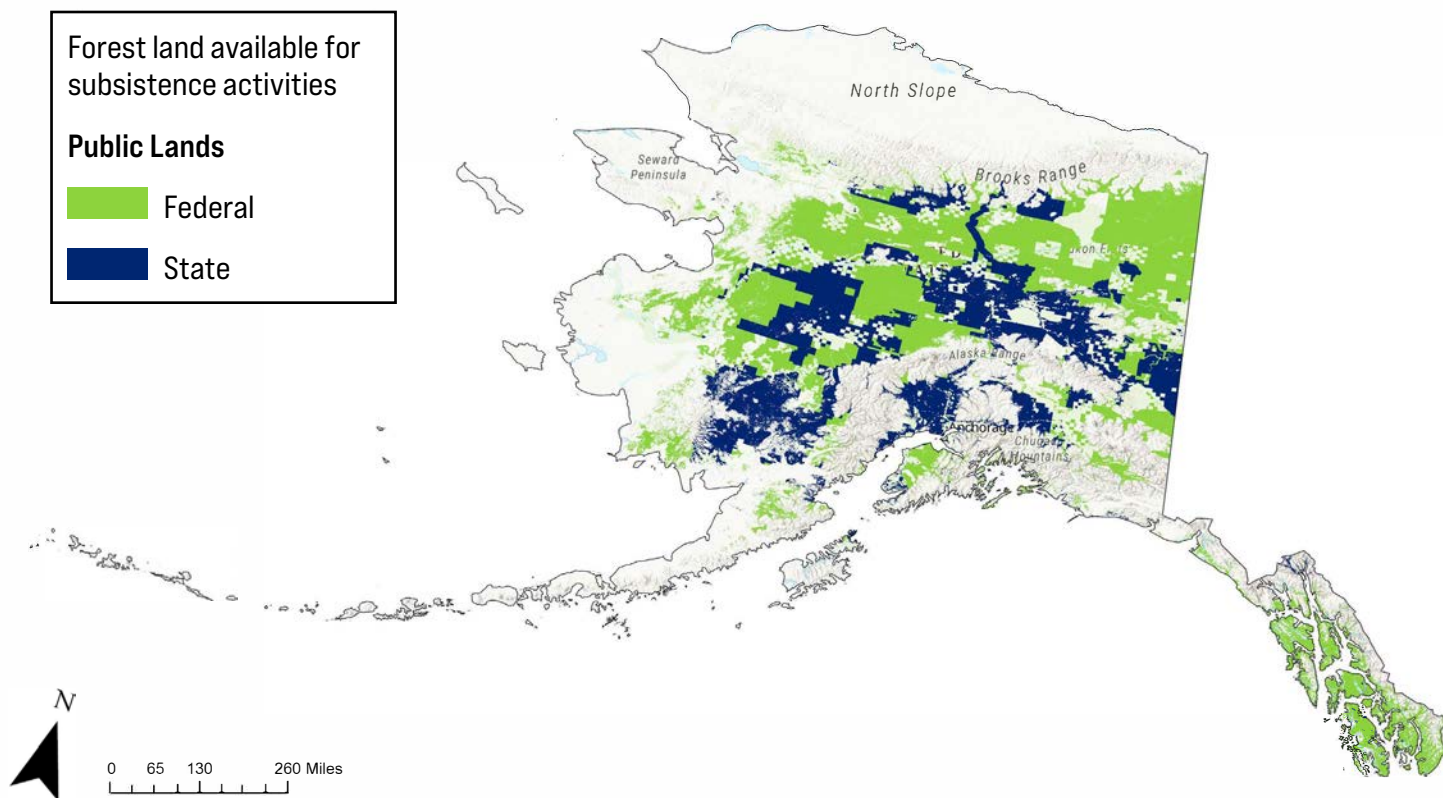


Figure 39-1—Map of Federal and State forest land in Alaska that is available for subsistence activities, as of 2016. It is legal to conduct subsistence harvest on public lands, with prioritization for rural residents on Federal lands. Data sources: Esri, USDA Forest Service, U.S. Geological Survey, and NLCD.

Pacific Northwest

Laws that are not solely focused on subsistence can still protect subsistence rights. Whereas Oregon and Washington do not have codified subsistence protections related to forests, these States, along with Alaska, are included in the Pacific Salmon Treaty (PST) and are required to protect certain forest lands for the preservation of salmonid species (fig. 39-2). The PST is an international agreement between the United States, Canada, and Tribal Nations that regulates fisheries and inland waters and allows for subsistence harvesting dependent upon dynamic salmon populations. The treaty is intended to decrease competitive overfishing and enhance conservation (Pacific Salmon Commission 2023). Data on the total protected area of forest land covered under the PST are not available, but the PST includes mandatory protections for riparian areas of streams, rivers, lakes, and wetlands. Size of the required buffers varies by State.

Additionally, many Tribes in the Pacific Northwest have treaties that give them the right to fish in “usual and accustomed” areas. The Boldt Decision (United States v.

Washington) restored Tribal treaty rights to harvest up to one-half of the harvestable surplus of fish stocks in that area; however, it is important to note these harvests may be used for subsistence or commercial purposes (Earth Economics 2021, United States v. Washington 1974), making it difficult to parse subsistence activities from commercial activities.

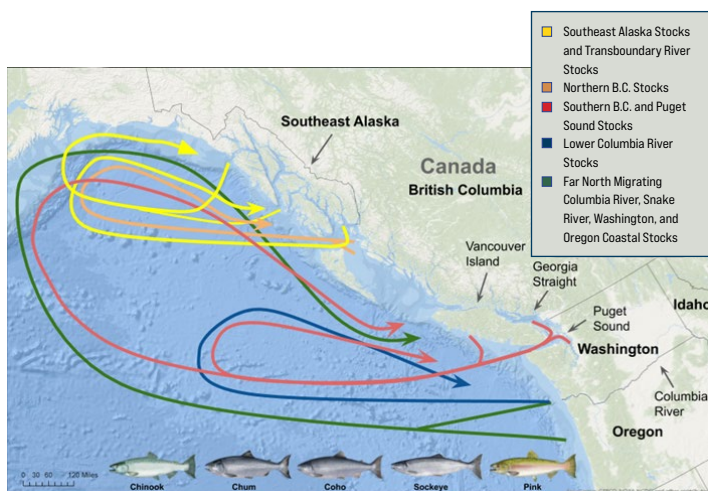


Figure 39-2—West Coast areas relevant to the Pacific Salmon Treaty. The colors represent the different salmon stocks and the path those salmon may travel in the Pacific Ocean. While Canada is pictured here, this analysis focuses on the United States. Image: NOAA Fisheries.

Great Lakes Region

The Great Lakes Indian Fish & Wildlife Commission (GLIFWC) represents 11 Ojibwe Tribes in Minnesota, Wisconsin, and Michigan that have hunting, fishing, and gathering rights off-reservation in the region (fig. 39-3; Pacific Fishery Management Council 2020). Four separate treaties with the U.S. Government from the 1800s give

the Tribes these rights. GLIFWC collects data on annual catch for significant edible species. These include *Ojiig* (fisher), *Nigig* (otter), *Gidagaa-bizhiw* (bobcat), and *Waabizheshi* (marten). Figure 39-4 shows a significant decrease in harvest of all species from 2013 to 2023 (Carl and Falck 2023). Rates of harvest decreased by 94 percent for *Ojiig*, 86 percent for *Nigig*, 72 percent for *Gidagaa-bizhiw*, and 88 percent for *Waabizheshi* over 10 years.

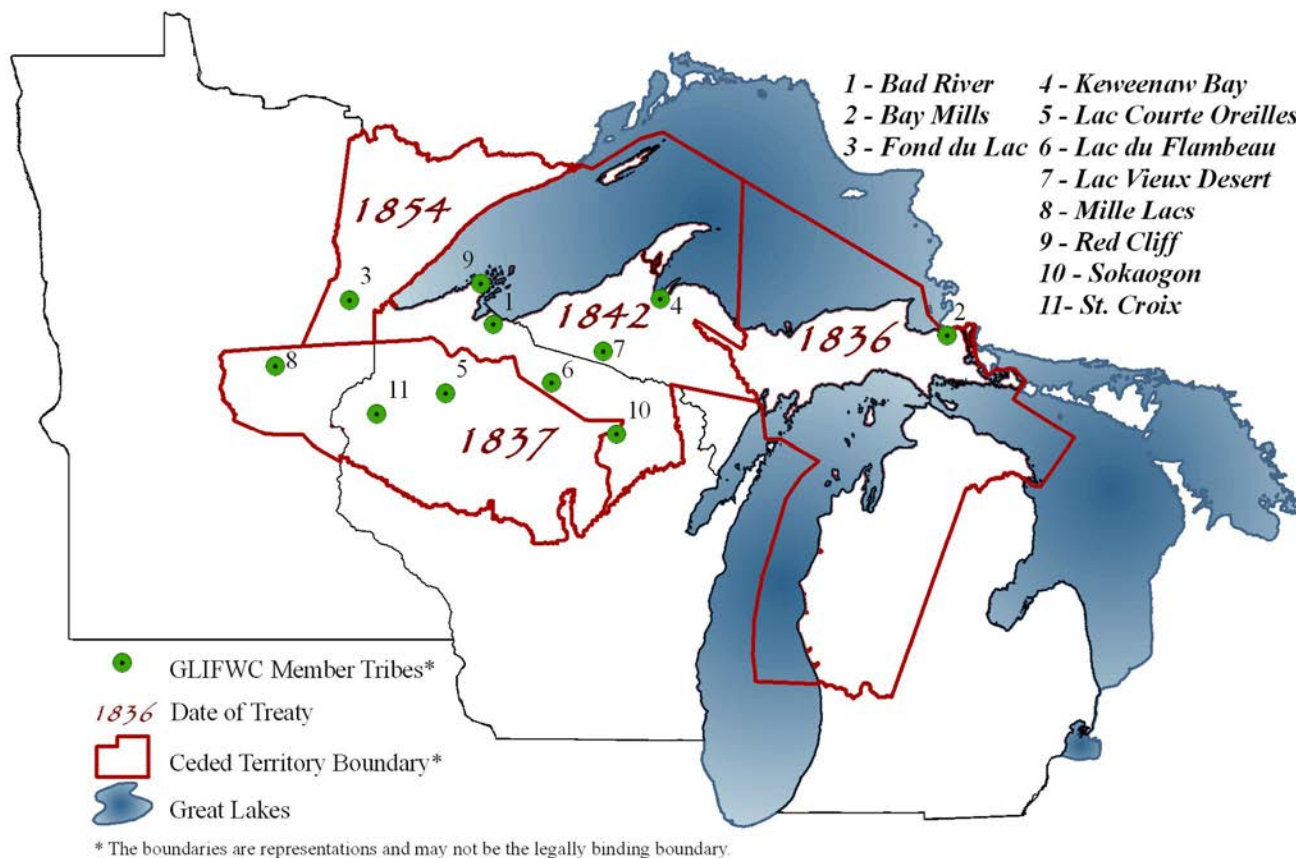


Figure 39-3—Locations of ceded territories and Great Lakes Indian Fish & Wildlife Commission member Tribes in Minnesota, Wisconsin, and Michigan. Image source: Great Lakes Indian Fish & Wildlife Commission; data source: Carl and Falck (2023).

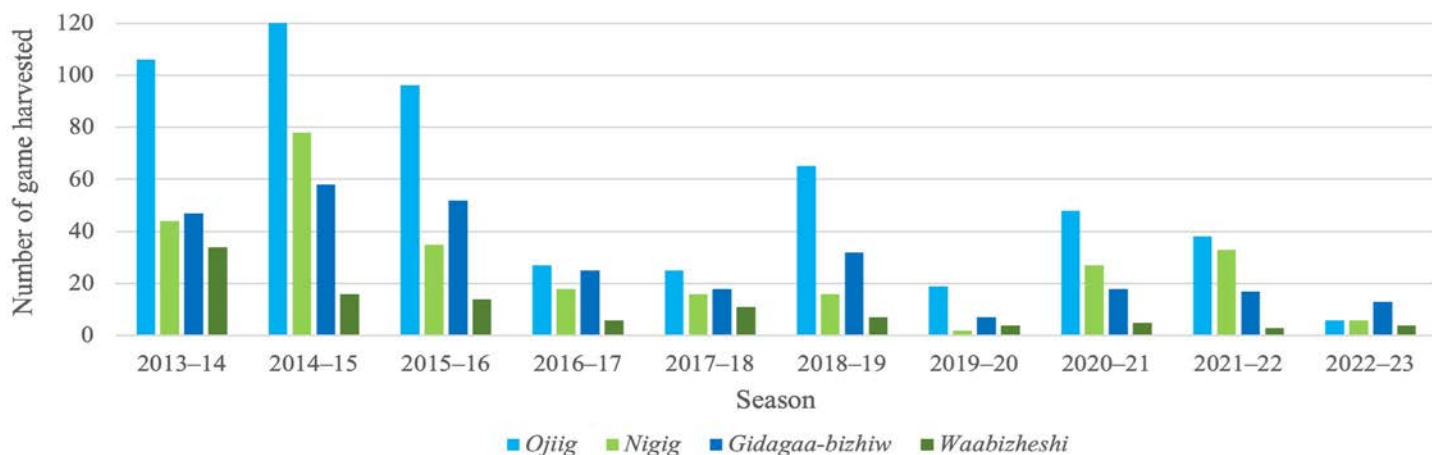


Figure 39-4—Off-reservation harvest summary by season for 2013-2014 through 2022-2023 for significant edible species. Source: Carl and Falck (2023).

What has changed since 2010?

Since 2010, there have been multiple changes to legal protections of subsistence activities. All of Hawaii's community-based subsistence fishing areas were designated after 2010, although plans had been in preparation for years prior (Lyte 2023). An additional site in Kipahulu has been proposed which would add 5.7 miles of coastline to be used for subsistence purposes, although it is not clear how much of this is forested (Grossman 2022).

The legal protections for subsistence harvest in Alaska may be different in the future, as lawmakers have proposed a constitutional amendment to change State law. The legislation would give rural Alaskans a priority for subsistence activities and would give Alaska State law the same coverage as Federal law (DeMarban 2024). If passed by Alaskan voters, the amendment would not change the land available for subsistence activities but would give rural residents priority over urban residents. At the time of publishing this indicator report, the proposal is still under consideration by the committee.

Why can't the entire indicator be reported at this time?

Subsistence activities are challenging to track and quantify reliably. Alaska has the best available data, including the weight of harvested goods and the number of users. The GLIFWC collects harvest data of significant game annually and has user data through permits. However, currently it is not possible to quantify the spatial extent of the subsistence activities and how much of the subsistence activity occurs in forests. Additionally, this report focuses on where subsistence activity is legally protected, but this does not mean that subsistence activities only happen where legal designation occurs.

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