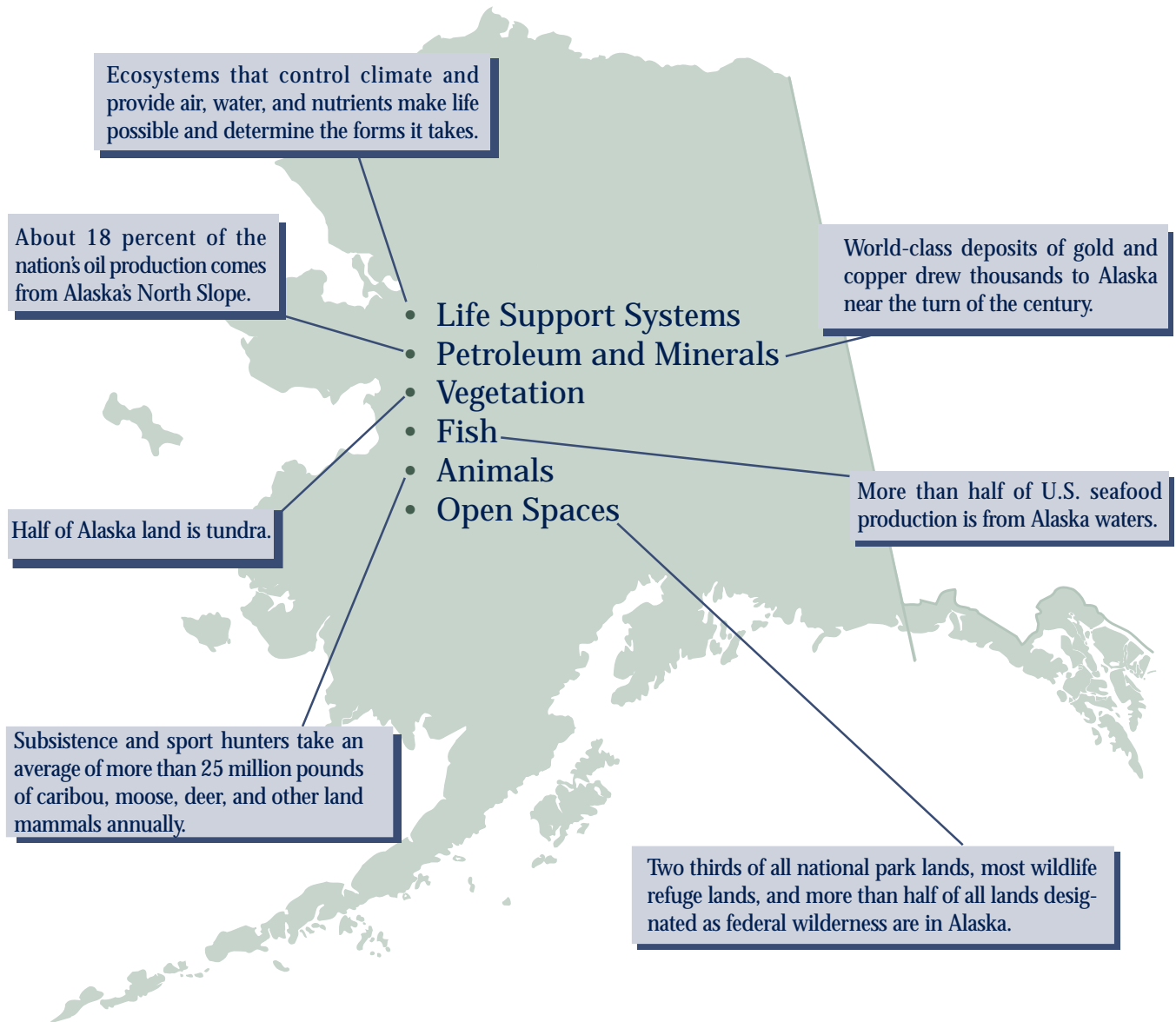




# RESEARCH SUMMARY

## Alaska's Natural Assets: An Overview

By Eric Larson



Alaska's natural assets kept Native people alive for centuries, drew fortune-hunters here in the 1800s, and sustain the modern economy. But what are all these "natural assets," how abundant are they, and what is their value? The Alaska Conservation Alliance contracted with ISER to sketch the big picture of Alaska's natural assets—ranging from spectacular scenery to huge petroleum and coal deposits to habitat for a big share of the world's migrating waterfowl. This summary is based on a more detailed report, *An Overview of Alaska's Natural Assets*, by Eric Larson. The report is available from ISER (907-786-7710) for \$8.00. It is also on ISER's Website at [http://www.iser.uaa.alaska.edu/projects/Substainable Development/index.htm](http://www.iser.uaa.alaska.edu/projects/Substainable%20Development/index.htm).

**Table 1. Public Open Space in Alaska, 1998**

National Parks, Refuges, Forests	153 million acres
Federal Public Domain	61 million acres
State Parks, Forests, Refuges	7 million acres

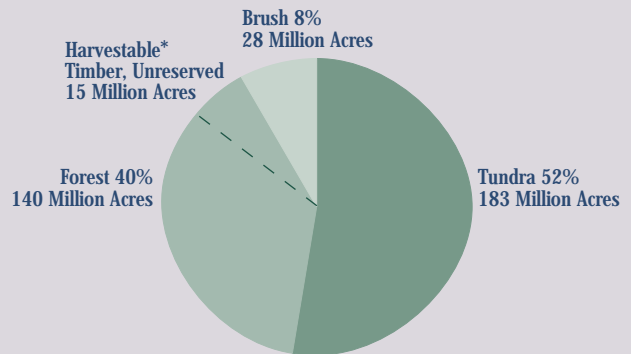
Sources: U.S. Bureau of Land Management; Alaska Department of Natural Resources

**Table 2. Estimated Populations of Marine Mammals**

Seals*	- At Least 2.25 million
Pacific Walrus	- 200,000-280,000
Sea Otter	- 100,000-160,000
Steller Sea Lion	- Less than 50,000
Beluga Whale	- 25,000
Other Whales	- Few Hundred to Several Thousand
Polar Bears	- 3,000 - 5,700

\*Ringed and northern fur; no data available on ribbon, spotted and bearded seals  
Sources: ADF&G; U.S. Fish and Wildlife Service

**Figure 1. Alaska's Vegetation**

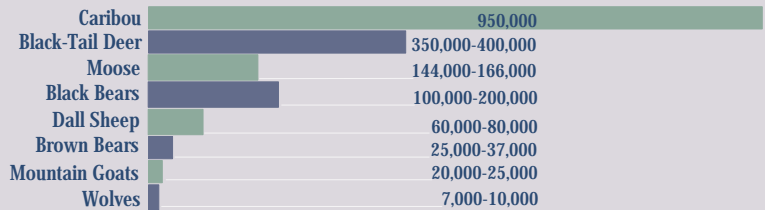


\*As defined by the U.S. Forest Service; includes trees of a given diameter. This doesn't necessarily mean all these trees would be profitable to harvest.  
Sources: Alaska Regional Profiles, AEIDC, University of Alaska; U.S. Forest Service, Anchorage Forestry Sciences Laboratory

Alaska has vast open spaces. More than 40 percent of Alaska's acreage is in federal and state parks, wildlife refuges, and forests and another 15 percent is in remaining federal public domain. Huge expanses of tundra, brush, and forest provide habitat for hundreds of thousands of caribou, moose, deer, and black bears and tens of thousands of sheep, brown bears, and other animals. Millions of birds of more than 400 species spend at least part of the year in Alaska.

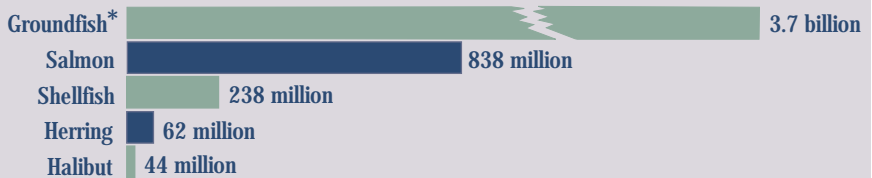
In waters off the coast are millions of seals, hundreds of thousands of walrus and sea otters and much smaller but still substantial numbers of sea lions, whales, and polar bears. We don't know the exact abundance of many fish and shellfish in Alaska waters, but commercial harvests give us an indication. Billions of pounds of groundfish are taken in Alaska waters annually, as well as hundreds of millions of pounds of salmon and shellfish and tens of millions of pounds of halibut and herring.

**Figure 2. Estimated Current Populations of Large Mammals in Alaska\***



\*There are also small introduced populations of musk oxen, elk, and bison.  
Source: Alaska Department of Fish and Game

**Figure 3. Average Annual Commercial Fish Harvests, 1991-1996 (In pounds)**



\*1993-1996 average

Sources: Alaska Department of Fish and Game; National Marine Fisheries Service

**Table 3. Birds of Alaska**

Estimated population: 445 species, numbering in the millions, many migratory  
 Shorebirds: Most or all of the worldwide populations of a dozen species nest in Alaska  
 Seabirds: An estimated 90 percent of all U.S. seabirds nest along Alaska's coastline  
 Raptors: Alaska is a stronghold for bald eagles; 28 species of raptors found here  
 Landbirds: 262 species found in Alaska; 31 species stay year-round  
 Waterfowl: 90 million acres of wetland habitat; hundred of thousands of migratory waterfowl.

Source: Adapted from U.S. Fish and Wildlife Service's Migratory Bird Program

**Table 4. Estimated Annual Sport Harvests of Large Mammals and Fish  
(In Numbers of Animals and Fish)**

Animals (Average Harvest, 1991-1994)		Fish (1996 Harvest)	
Black-Tail Deer	23,121	All Salmon Species	1,264,164
Caribou	13,644	Halibut	333,981
Moose	6,765	Trout	147,425
Black Bears	1,707	Rockfish	83,434
Wolves	1,287	Dolly Varden	63,991
Dall Sheep	1,188	Arctic Grayling	37,238
Brown Bears	1,165	All Other Fish	97,770
Mountain Goat	487		
Bison*	107		
Musk Oxen*	91		
Elk*	85		

\*Harvests from small introduced populations.

Sources: Enid Keyes, Rebecca Stauch, Suzan Bowen, *Alaska Wildlife Harvest Summaries, 1994 - 1995*, Alaska Department of Fish and Game, March 1996. Allen L. Howe, Gary Fidler, Cynthia Olnes, Allen E. Bingham, and Michael Mills, *Harvest, Catch, and Participation in Alaska Sport Fisheries During 1996*. Division of Sport Fish, Alaska Department of Fish and Game, November 1997.

Hunting and fishing—for subsistence and for sport—are widespread in Alaska.

Sport hunters annually take large numbers of deer and caribou, smaller but still substantial numbers of moose, and much smaller numbers of bears, sheep, and goats (Table 4). That harvest of large mammals has totalled about 16 million pounds annually in recent years.

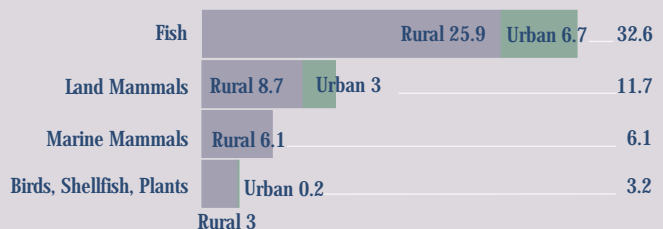
In 1996 sport anglers took over a million salmon, more than 300,000 halibut, and smaller numbers of trout, rockfish, and other fish (Table 4).

Subsistence harvests are typically reported not in numbers of animals or fish but in pounds. In recent years subsistence harvests—including land and marine mammals, fish, and birds—have averaged more than 50 million pounds a year, with fish making up 60 percent of that total (Figure 5). Rural hunters take 80 percent of the subsistence harvest.

Trappers also take about half a million pounds of beavers, martens, and other furbearers annually.

Oil has fueled Alaska's economy and government for more than 20 years, but production peaked in 1988. Alaska also has large reserves of natural gas on the North Slope, but to date those reserves have been used mostly to increase oil production. Alaska is famous for its gold and copper finds of the last century, but it also has huge reserves of coal and smaller known deposits of silver, zinc, lead, and other minerals.

**Figure 5. Subsistence Harvests by Rural and Urban Alaskans  
(In Millions of Pounds, Annual Average, 1990s)**



Sources: Alaska Department of Fish and Game, Subsistence Division. *Subsistence in Alaska: 1994 Update*. March 1994.

**Table 5. Cumulative Extraction of Oil and Gas and Remaining Proven Reserves, 1998**

	Cumulative Extraction	Remaining Proven Reserves
Oil	13 billion barrels	7.5 billion barrels
Natural Gas	8.7 billion cubic feet	34 billion cubic feet

Source: Alaska Department of Natural Resources, *Historical and Projected Oil and Gas Consumption*, April 1998.

**Table 6. Cumulative Extraction of Selected Minerals at the End of 1997**

Coal	51,275,428	short tons
Gold	34,130,229	ounces
Silver	80,486,738	ounces
Lead	509,772	tons
Zinc	2,498,048	tons

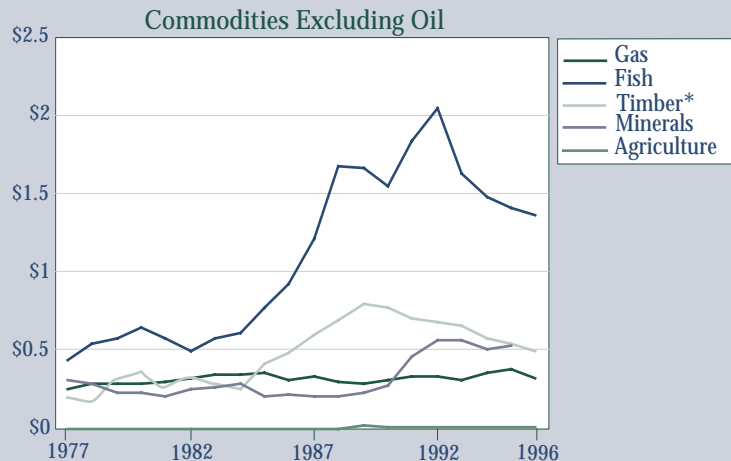
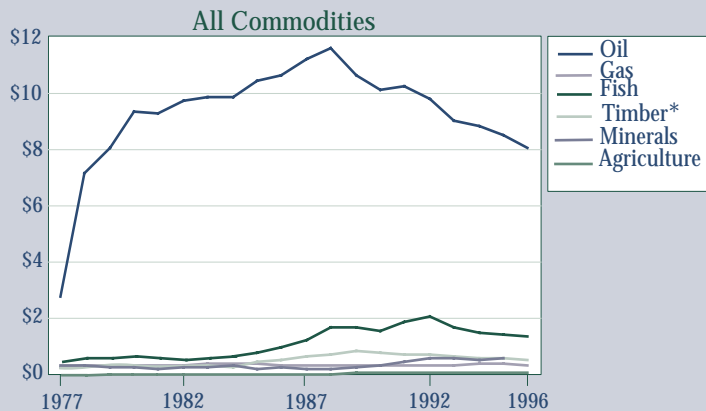
Source: Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys

How valuable are Alaska's natural assets? The answer varies by asset. The most straightforward to value are of course those that are bought and sold. Figure 6 shows the market values (in constant dollars, to remove the effects of inflation) of Alaska commodities. Oil has been by far the most valuable commodity for more than 20 years, with a market value several times that of all other Alaska industries combined. Its value has dropped, however, with declining production. Fishing and logging have long been important to Alaska's economy, but they have been hurt recently by reduced demand and other factors. The mineral industry is growing; the agriculture industry is relatively small.

It's much harder to get agreement about the "value" of assets that aren't bought and sold. For example, animals and fish Alaskans take for subsistence have obvious monetary value, because they are sources of food people would otherwise have to buy. In 1996, Robert Wolfe of the Alaska Department of Fish and Game estimated that it would cost somewhere between \$160 and \$267 million to buy the meat Alaskans harvest for subsistence each year, depending on what you assume about prices. That is a rough estimate, partly because some subsistence foods are not comparable to foods sold in the grocery store. Also, subsistence has cultural, community, and other values that are beyond money.

Other assets—including everything from undeveloped areas to wildlife habitat to clean water—have recreational, historical, cultural, scientific, and many other kinds of non-market value. For specific purposes—say for comparing the value of commercial and sport fishing—economists sometimes try to quantify those non-market values. One way is simply asking people how much it's worth to them to go sport hunting or to float a wilderness river. Another way is to estimate the value of an experience by looking at what people are willing to pay for it. While all these non-market values are relevant to public policy decisions, not all can be meaningfully measured in dollars.

**Figure 6. Market Value of Alaska Commodities, 1977-1997, In Billions of 1996 Dollars**



\*Value of wood products exported from U.S. only; this makes up most of the value of Alaska production.

**Sources:** ISER estimates derived from Oil and Gas Commission, *Historical and Projected Oil and Gas Consumption* (1998), Bundtzen et al. *Alaska's Mineral Industry*, (1995), Hill, A. et al. *Timber Harvest and Wood Products Manufacture in Alaska*, (1996), Alaska Department of Fish and Game, Commercial Fisheries Division, Alaska Agricultural Statistics Service, *Alaska Agricultural Statistics 1997*.