

Alaska Fish and Wildlife Biologists

Education, wages, and employment outlook

Conducting aerial surveys from helicopters, sedating wild animals, and traveling to remote wilderness locations are just part of a day's work for many of Alaska's fish and wildlife biologists.

About 53 percent of Alaska is made up of parks, sanctuaries, wildlife preserves, and recreational areas. With so many wild places, it takes a large number of scientists to research and monitor various species and habitats. Not surprisingly, Alaska has the highest concentration of zoologists and wildlife biologists in the nation.

Essential to state's vitality

Droves of tourists come here each year to view the wildlife, and commercial fishing provides thousands of jobs. Fish and wildlife are a key part of Alaska's economy, and their protection is required by the state constitution and federal law.

While some Alaskans like to hunt and fish recreationally, many rely on it. Alaska Natives lived off the land for thousands of years, and a subsistence lifestyle is still prevalent in rural areas where jobs can be few and living costs are high. Moose in the freezer is meat that didn't have to be purchased at a grocery store.

Biologists' research helps policy makers balance the needs of the state's many user groups while promoting healthy, sustainable populations.

Different work, same occupation

Fisheries and wildlife biologists often specialize in one species. Wildlife biologists focus primarily



Ryan Scott, a state wildlife biologist, affixes a GPS radio collar to an immobilized mountain goat in Southeast Alaska. Photo by Kevin White, courtesy of the Alaska Department of Fish and Game

1 Reported Job Titles Zoologists and wildlife biologists

Wildlife biologist
Zoologist
Fish and wildlife biologist
Fisheries biologist
Fishery biologist
Wildlife manager
Aquatic biologist
Assistant research scientist
Conservation resources management biologist
Environmental specialist

Source: O*NET

on mammals and birds, including seabirds and marine mammals, and fisheries biologists study creatures that live in rivers, lakes, and oceans. Salmon, trout, cod, and crab are just a few examples.

What Employers Look For **2**

Fish and wildlife biologists in Alaska

These biologists conduct experiments and study animals in their natural habitats for factors such as ecological threats from invasive species, wildlife habitat relationships, predator and prey relationships, and human impacts.

Alaska biologists often work in some of the state's most remote locations — from the North Slope to Southeast — so survival and outdoor skills are often a necessity. Many destinations lack roads and are accessible only by boat, small plane, helicopter, or snowmachine.

Biologists use a variety of research equipment and methods, often temporarily capturing animals to collect biological data and releasing them unharmed. Necessary equipment includes cameras, GPS collars, traps, firearms (for protection against bears), dart guns, nets, and scuba gear. Wildlife biologists also analyze self-reported data from hunters and fishermen, and write scientific reports.

A large portion of their research is focused on estimating populations to help biologist managers set harvest quotas. These estimates help determine how many salmon can be harvested from a particular river, how many halibut can be taken by sport fishermen, or how many moose can be hunted in specific locations. These decisions affect a variety of stakeholders, including subsistence and sport hunters, fishermen, and hunting guides.

Educating the public is another aspect of the job. Fisheries and wildlife biologists often give presentations at K-12 schools, universities, and other venues, and produce a variety of printed and online materials. For example, the Alaska Department of Fish and Game's Web site provides a wealth of information about the state's wildlife.

Education

A bachelor's degree in biology or a closely related field is the minimum requirement for landing a job in this category, and a graduate degree

Desired Abilities:

1. Ability to communicate effectively, orally and in writing, with professional staff and the public.
2. Ability to set goals and priorities, monitor progress and adjust resources to accomplish objectives; lead others in the work and participate as a member of the work team.
3. Ability to work at remote field sites, to travel in small aircraft, to use field and laboratory equipment safely and properly, and to operate skiffs, all terrain vehicles, and firearms.

Desired Knowledge:

1. Considerable knowledge of scientific methods and techniques for biological research.
2. Considerable knowledge of wildlife species, their natural history and characteristics including habitat associations.
3. Working knowledge of statistical approaches and data analysis and evaluation, basic field and laboratory procedures, hypothesis testing, experimental design and scientific documentation.

Source: Alaska Department of Administration, Workplace Alaska

is often necessary.

Alaska's abundant wild places and wildlife are never far away, giving students unique opportunities to study them. Biology programs lay the ground work for understanding habitats, animal species, and biological principals.

Successful biologists need a blend of academic skills learned in the classroom and skills learned in the field, such as driving a skiff, living in remote field camps, battling insects, carrying a firearm, and wilderness hiking. Biologists also need to understand statistics and be able to analyze data, as estimating populations is one of the basic job duties.

Examples of skills and knowledge that make students more desirable to future employers are listed in Exhibit 2. The list is derived from the job class specifications for a wildlife biologist with the State of Alaska.

As usual, prior work experience also helps. Students can seek internships during the summers or work as biological technicians, which provides on-the-job training by seasoned biologists.

Decent wages

Fisheries and wildlife biologists make less money

3 Average Annual Wages by Occupation

Life and physical sciences, May 2011

	Alaska	U.S.
Geoscientists, exc hydrologists and geographers	\$104,360	\$97,700
Conservation scientists	\$86,810	\$62,290
Atmospheric and space scientists	\$86,410	\$90,860
Economists	\$81,460	\$100,270
Hydrologists	\$78,620	\$79,070
Physical scientists, all other	\$76,900	\$96,290
Urban and regional planners	\$73,440	\$67,350
Clinical, counseling, and school psychologists	\$72,130	\$73,090
Biological scientists, all other	\$70,530	\$73,050
Zoologists and wildlife biologists	\$66,360	\$61,880

Note: May 2011 wage data are available for a total of 25 occupations in the life, physical, and social sciences.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

than other scientists, but getting paid to study animals in Alaska is a dream job for some.

In 2011, Alaska’s zoologists and wildlife biologists made about \$66,360 — slightly higher than the national average. (See Exhibit 3.)

Average wages are based on data for a variety of workers, and wages can vary by employer, position, duties, experience, education, and geographic location. The general rule with most science-based jobs, though, is that more education equals higher pay.

The most recent national data show private-sector biologist managers made \$79,060 per year. Federal employees had the next-highest wages, at \$77,590 per year, and employees of scientific and technical research firms made \$70,480.

Employment outlook

Government agencies are the largest employers of zoologists and wildlife biologists nationwide, at about 66 percent. (See Exhibit 4.)

The State of Alaska employed 467 of these workers, and another 158 worked for private companies in the most recent quarter available.

Federal agencies employed 180 wildlife biologists, 154 fish biologists, and four zoologists in Alaska, bringing the overall count to more than 960 statewide.

Fewer government jobs are likely in coming years with anticipated cuts to federal spending. But even with federal cuts, state government will likely remain a large employer for this occupation. Fish and wildlife biologists will still be in demand in Alaska because of the high number of projected openings.

The Alaska Department of Labor and Workforce Development’s most recent 10-year occupational forecast shows that wildlife biologists had the highest number of projected job openings in the life, physical, and social sciences category. (See Exhibit 5.)

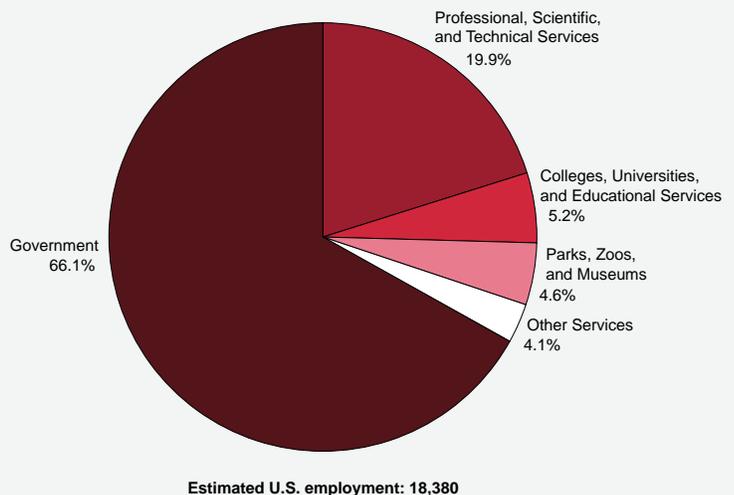
Gender and age of workforce

More men than women work in scientific fields, including this one. In 2010, 31 percent of Alaska’s fisheries and wildlife biologists were women — moderately less than the 36.3 percent average for all life and physical sciences. However, Alaska’s percentage has risen in recent years, from 25 percent female in 2000.

There were relatively few younger workers

4 Biologist and Zoologists by Industry

United States, 2011



Source: U.S. Department of Labor, Bureau of Labor Statistics

Zoologists and Wildlife Biologist Top the Openings List **5**

Life, physical, and social sciences, Alaska forecast, 2008 to 2018

	2008 jobs	2018 jobs	Growth openings	Replacement openings	Total openings
1 Zoologists and wildlife biologists	635	705	70	213	283
2 Geological and petroleum technicians	616	683	67	157	224
3 Environmental scientists/specialists, incl health	595	677	82	107	189
4 Biological technicians	480	540	60	79	139
5 Geoscientists, exc hydrologists and geographers	331	370	39	60	99
6 Life, phys, and soc science technicians, all other	327	365	38	90	128
7 Urban and regional planners	220	247	27	86	113
8 Conservation scientists	210	231	21	61	82
9 Environmental science and protection technicians	189	220	31	48	79
10 Biological scientists, all other	194	218	24	66	90
11 Chemical technicians	141	154	13	41	54
12 Social scientists and related workers, all other	134	150	16	36	52
13 Physical scientists, all other	126	140	14	47	61
14 Chemists	112	124	12	52	64
15 Clinical, counseling, and school psychologists	91	101	10	20	30
16 Atmospheric and space scientists	86	99	13	50	63
17 Survey researchers	75	85	10	25	35
18 Economists	70	77	7	18	25

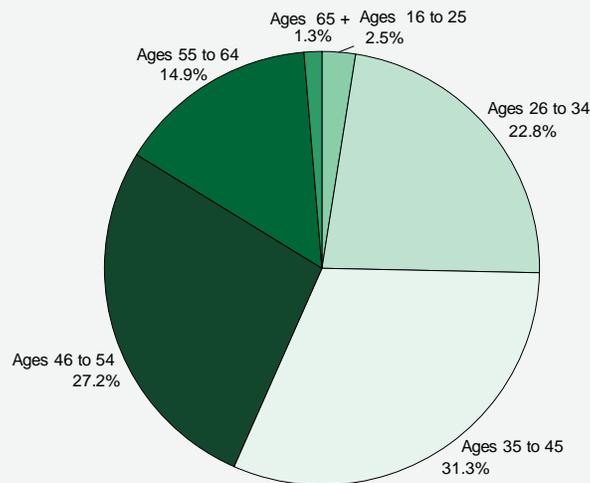
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

among fish and wildlife biologists — 97 percent were older than 25. (See Exhibit 6.) This is likely due to the above-average educational requirements and the fact that many positions require experience.

An estimated 14.9 percent of these workers were between the ages of 55 and 64, many of whom are likely to retire during the next eight years. Few continue in this occupation past the typical retirement age — just 1.3 percent were over 65.

Ages of the Workforce **6**

Alaska wildlife biologists, 2010



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section