

What is Animal Behavior?

Animal behavior is the scientific study of everything animals do, whether the animals are single-celled organisms, invertebrates, fish, amphibians, reptiles, birds, or mammals. It involves investigating the relationship of animals to their physical environment as well as to other organisms, and includes such topics as how animals find and defend resources, avoid predators, choose mates and reproduce, and care for their young.

People who study animal behavior are concerned with understanding the causes, functions, development, and evolution of behavior. The causes of behavior include both the external stimuli that affect behavior, and the internal hormonal and neural mechanisms that control behavior. The functions of behavior include its immediate effects on animals and its adaptive value in helping animals to survive or reproduce successfully in a particular environment. The development of behavior pertains to the ways in which behavior changes over the lifetime of an animal, and how these changes are affected by both genes and experience. The evolution of behavior relates to the origins of behavior patterns and how these change over generations.

What education and/or training is needed for a career in animal behavior?

Most scientists directly involved in animal behavior work in one of four broad fields: ethology, comparative psychology, behavioral ecology, or anthropology. These disciplines overlap greatly in their goals, interests, and methods. However, psychologists and ethologists are primarily concerned with the regulation and functions of behavior, whereas behavioral ecologists focus on how behavioral patterns relate to social and environmental conditions. Ethologists and behavioral ecologists usually are trained in departments of biology, zoology, ecology and evolution, entomology, wildlife, or other animal sciences. Most comparative psychologists are trained in psychology departments. Behaviorists specializing in the study of human behavior are usually trained in anthropology, psychology, or sociology departments.

Some jobs in animal behavior require only a Bachelor of Arts (B.A.) or a Bachelor of Science (B.S.) degree. However, most careers in animal behavior require advanced degrees, sometimes a Master of Arts or of Science (M.A., M.S.), but usually a Doctor of Philosophy (Ph.D.) or Doctor of Veterinary Medicine (D.V.M.). Earning advanced degrees requires a very good undergraduate background, a strong academic record, motivation, and hard work.

Many colleges and universities worldwide offer graduate training programs in animal behavior. In order to become a strong candidate for admission to graduate school, completing an independent study project or obtaining some research experience as an undergraduate can be very helpful. A book detailing the current training programs in North America is available through the Animal Behavior Society at the address given at the end of this brochure.

What career opportunities are available in animal behavior?

College Teaching and Research - Most animal behaviorists teach and/or do independent research at colleges and universities. Many have academic appointments in biology, zoology, or psychology departments. Others are employed in departments of anthropology, sociology, neurobiology, animal science, wildlife biology, entomology, ecology, or in medical or veterinary colleges.

Careers in college teaching and research usually require the Ph.D. degree; a very few junior colleges require only a master's degree. Most animal behavior jobs exist within larger academic departments, and animal behaviorists often teach in related disciplines such as physiology, ecology, and evolution. Students who obtain the Ph.D. degree in programs offering broad training in one or more of the behavioral or biological sciences will be more competitive in the job market. Although animal behavior is a growing discipline, competition for jobs in teaching and research is very keen.

An increasing number of animal behaviorists are being hired by universities to apply behavioral knowledge to the production, management, conservation, and/or care of domestic animals. Many are employed by academic departments such as animal science, veterinary medicine, wildlife, or entomology for research aimed at areas such as improving livestock production, managing wildlife populations, or controlling pests. Most researchers have a Ph.D. in animal behavior or in some allied field of biology with advanced training in animal behavior.

Government and Private Research Institutions - A growing number of animal behaviorists work in government laboratories or in private business and industry. Many of these jobs involve health-related research. For example, drug companies or government laboratories may hire animal

behaviorists to conduct research on the behavioral effects of new drugs, to examine the links between behavior and disease, or to evaluate the well being of animals under their care. State and federal government agencies responsible for natural resources management sometimes hire animal behaviorists to work in their wildlife programs. Increasingly, private environmental consulting firms are employing behaviorists to examine the effects of habitat alteration on foraging patterns, spatial dispersion, and reproductive processes in animals.

For many of these jobs, a Ph.D. degree will be desirable, and breadth of training will be essential. For health-related jobs, training in relevant fields such as physiology, biochemistry, or pharmacology will be particularly helpful. For management or consulting jobs, experience in environmental science, conservation biology or population and community ecology may be useful.

Zoos and Aquariums, Conservation Groups, Museums - Zoos, aquariums, and museums occasionally hire animal behaviorists as curators or researchers. Curators are responsible for acquiring, maintaining, and displaying collections of particular animals, whereas researchers are responsible for the scientific study of these animals.

In zoos and aquariums, behavioral research is usually aimed at improving health and reproduction, and behaviorists often collaborate closely with field biologists and specialists in endocrinology, nutrition, genetics, and veterinary medicine. Behavioral research conducted in museums may cover a wide range of topics, but usually encompasses aspects of the ecology, natural history, and systematics of the taxa being studied.

Some conservation groups also hire animal behaviorists, especially those that fund long-term field research, or are involved with reintroduction programs, the design of nature preserves, or sustainable wildlife use. As these groups grow in number and gain support, the availability of jobs for animal behaviorists in this area should increase.

Curators, researchers, and conservation workers usually have Ph.D. or D.V.M. degrees and also have broad training in at least one other area of biology such as animal husbandry, ecology, systematics, or in one of the taxonomic disciplines such as entomology, ichthyology, herpetology, ornithology, mammalogy, or primatology.

Some zoos, aquariums, and museums also hire researchers that specialize in animal behavior education. Educators work to communicate knowledge about animal behavior to the general public through tours, lectures, and educational displays. Educators may have a B.S., M.S., or Ph.D. degree in the biological or behavioral sciences. Usually some specialized training or experience in secondary or adult education is also preferred.

Other Research Opportunities - Paid research assistants often are hired by universities, zoos, aquariums, museums, government, and private facilities to help conduct ongoing animal behavior research. Here they work under the direction of faculty or staff researchers and help to design, perform, and analyze the results of animal behavior studies. Research assistants may work in laboratories or in the field, depending upon the nature of the research project. These jobs may be full-time or part-time.

Full-time research assistants usually have either a B.S. or M.S. degree. The usual requirement for a B.S. assistant is a major in the behavioral or biological sciences with some course work in animal behavior. Part-time assistants need not have a bachelor's degree, but usually they have some background in behavior. Often, part-time assistants are students working toward a college degree. As is true for college teaching and research, competition for research assistant jobs can be intense. Breadth of training in allied fields (such as ecology, physiology, or biochemistry) and/or possession of particular practical skills (such as statistical analysis, computer programming or electronics) can be helpful. For field projects that take place overseas, knowledge of a second language or experience working in a foreign country may be useful.

Other Jobs Working with Animals - Many other jobs that involve working with animals also involve some knowledge of animal behavior. These include employment as veterinary assistants, animal caretakers at zoos, universities, and research institutions, animal psychologists, companion animal trainers, pet store workers, and animal control officers. Some of these require specialized or advanced training through certification training programs; others do not. To find out more about these careers, write for the brochures from the American Society of Zoologists and Humane Society of the United States listed at the end of this pamphlet.

Where Can I Get More Information?

For more information about the science of animal behavior, begin at your local public or college library. Many books on animal behavior have been published in recent years. A librarian can help you locate them.

Many scientific journals also report research on animal behavior, particularly *Animal Behaviour*, *Behaviour*, *Behavioral Ecology and Sociobiology*, *Ethology*, *The Journal of Comparative Psychology*, and *Zoo Biology*. In addition, multidisciplinary studies containing a behavioral component are often published in *Brain, Behavior, and Evolution*. Journals devoted to particular taxonomic groups also frequently report behavioral research.

To request the Society's excellent guide to advanced training in animal behavior in North America, send \$8.00 (made payable to the ABS) for the *Graduate Programs in Animal Behavior* to:

**Animal Behavior Society
Indiana University
2611 East 10th St. #170
Bloomington IN 47408-2603**

or see our web page:

<http://www.animalbehavior.org> (click Careers/Guides)

For information about other careers that involve working with animals, write for: *Careers in Animal Biology*, published by the American Society of Zoologists, 1982. It is available from ASZ Headquarters, 401 N. Michigan Avenue, Chicago, IL, 60611-4261. Another good source of information about careers working with animals is the Humane Society of the United States: HSUS National Headquarters, 2100 L St., NW, Washington, D.C., 20037.