

You're a *what?*

# Ornithologist

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**W**hen ornithologist Amanda Rodewald talks about tweets and angry birds, she's not usually referring to social media and video games. She's probably discussing science.

"Birds have calls that they use when they're agitated or to alarm others of danger," says Amanda. "In fact, there's been research showing that chickadee calls can actually communicate the size and type of a predator."

Ornithology is the branch of zoology related to birds. Some ornithologists study birds to find clues about how to protect the environment. For example, Amanda's research focuses on the ways that human activity affects birds and their ecosystems, and her findings are useful for conservation and land management efforts.

## What they do

Ornithologists work in academia, federal and state agencies, wildlife and conservation organizations, and other institutions, such as the World Bank. They study birds in their natural habitats or in the laboratory. They also may write research reports and proposals for grants, teach classes, present research to the public, and have administrative duties related to these activities. Some ornithologists, like Amanda, do all these tasks.

**Research and writing.** Many questions about ornithology are best answered by observing birds in the wild during fieldwork. Amanda and her students have done fieldwork in locations as remote as the Andes Mountains in South America and as nearby as the forests of southern Ohio and the Midwest.

Fieldwork usually involves surveying, or counting, birds and monitoring their nests. “Fieldwork is where many ornithologists learn how to collect data for research,” says Amanda. “For example, we’ll watch and record different species foraging to discover where and what they eat.” During fieldwork, ornithologists might also attach metal or plastic bands to a bird’s leg to help identify individual birds and aid with survival estimates.

But not all ornithologists work outdoors. Much of the research that ornithologists do is in the lab. For example, feathers collected during fieldwork are analyzed in the lab for a variety of purposes, including genetic mapping. And some studies of migratory behavior or mate choice might involve observing birds in special cages.

Ornithologists often write reports about their research or publish articles in scientific journals focused on biology, ecology, conservation, or wildlife management. And ornithologists who do research also write grant proposals to seek funding for specific research.

**Teaching and outreach.** In addition to educating people through writing about birds, ornithologists share their knowledge by teaching college courses. For example, Amanda will teach a course on conservation

biology for Cornell University’s Department of Natural Resources.

But education is not limited to teaching college students. Outreach activities might include giving talks and making presentations to natural resources managers of government and other nonprofit organizations as well as to people in public interest groups, birdwatching clubs, and schools.

**Administration.** An ornithologist’s administrative tasks vary, depending on the job. Most of Amanda’s administrative duties are related to her work as director of conservation science at the Cornell Lab of Ornithology in Ithaca, New York. Her responsibilities include program oversight and supervision, budgeting, and strategic planning.

## How they prepare

Ornithologists need an advanced degree for most jobs. But at every level of ornithology work, says Amanda, academic credentials alone aren’t enough. “Education is important,” she says, “but practical experience in the field or lab is critical.”

**Education.** Ornithologists may start out with a bachelor’s degree in wildlife biology, ecology, or some other life science. Students also benefit from coursework in math and statistics, for deciphering the quantitative side of science; communications, to gain writing and speaking skills; and social science, for understanding how human behavior affects ecosystems.

For most professional jobs, Amanda says, ornithologists need a master’s degree that includes a research thesis. Those who want to develop their own research projects, work in high-level management positions, or teach at a university usually need a Ph.D. in a discipline related to their work. Amanda’s degrees are in wildlife biology (bachelor’s), zoology (master’s) and ecology (Ph.D.).

**Experience.** Aspiring ornithologists can begin getting experience as early as high school by contacting local birdwatching clubs, becoming active in networks for young birdwatchers, and attending workshops to learn the basics of fieldwork.

College students interested in ornithology should check job boards to find temporary positions; search online for internships, some of which may be paid; and volunteer on projects with ornithology, ecology, or wildlife organizations. The important thing, says Amanda, is to “get outside and get experience.”

### What it’s like

Getting outside is what first drew Amanda to ornithology. “I loved the outdoors and always had a curiosity about wildlife and ecology,” she says.

**Rewards and challenges.** Fieldwork allows ornithologists to combine their passions for studying nature and being outdoors. But that also means being out in all types of weather—sometimes, almost every day—if there are limited times during a season to observe a particular species. Also, there is travel to and from field locations and a variable work schedule that is far from standard.

But because ornithologists love what they do, says Amanda, they don’t mind the unpredictable climate and hours. “So often when working outside in these beautiful field locations, surrounded by such fascinating birds, I can’t believe that I am actually paid to do this,” she says.

Erratic financial support is a different story. “There’s a lot of uncertainty about funding, both for research and for education,”

Amanda says. “That’s the worst part of the job.”

**Employment and wages.** The U.S. Bureau of Labor Statistics (BLS) does not collect employment and wage data specifically on ornithologists. Instead, ornithologists are included among zoologists and wildlife biologists. In May 2012, BLS counted 18,650 zoologists and wildlife biologists; their median annual wage was \$57,710.

The American Ornithologists’ Union, citing data from the Ornithological Societies of North America, estimates that there are about 6,000 ornithologists employed in the United States. But it’s difficult to determine wages or a precise employment number, the organizations say, because of the overlap among scientists in related disciplines (such as ornithologists who also study mammals or forestry).

**Passion.** Many bird enthusiasts throughout the United States enjoy learning more about these creatures. Employment estimates don’t count the large and growing segment of citizen scientists in ornithology: trained hobbyists, students, and volunteers who collect real data for science because of their interest in birds. “This is one area where amateurs can be exceptionally important,” Amanda says.

Whether employed as ornithologists or doing fieldwork as citizen scientists, these nature enthusiasts share the same passion. “Our work is meaningful,” says Amanda. “We’re helping to conserve the world around us.”



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*For ornithologist Amanda Rodewald, fieldwork often includes capturing birds to band them.*

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Photo courtesy of Amanda Rodewald.