

## I WANT TO BE AN ECOLOGIST!

Now that you know you are interested in pursuing a career in ecology, you need to decide whether to go on to graduate school or find a job. Remember, you can always go to graduate school after gaining work experience.

If you are interested in graduate school, the National Academy of Science Press, (800-624-6242) has a publication available for free in print or on the web that may be helpful: *Careers in Science and Engineering: A Student Planning Guide to Graduate School and Beyond* (<http://www.nap.edu/readingroom/books/careers/>).

If you'd like to secure a job, there are many tools to help you search. Timing, networking, and luck are all important factors in finding the right job. Talk to family, friends, teachers, guidance counselors, and advisors in your college or university career planning office. Get involved with a professional society. Most importantly, ask questions and make contacts. Contacts lead to contacts - - and networking is invaluable in finding a job.



### SEARCHING FOR A JOB:

Many organizations produce newsletters or maintain web sites with career information and job announcements:

- *Environmental Career Opportunities* (<http://www.ecojobs.com/>) a bimonthly subscription to environmental job listings.
- *The Job Seeker* (<http://www.tomah.com/jobseeker/>) a bimonthly subscription newsletter of nationwide natural resource and environmental vacancies.
- *Environmental Careers World* (<http://www.environmental-jobs.com/>) environmental and natural resources job information and career news.
- *EJobs: Environmental Jobs and Careers* (<http://www.ejobs.org/>) a comprehensive, organized listing of links to environmental and natural resource career information and opportunities.
- *The Environmental Careers Organization* (<http://www.eco.org/>) provides a wide range of resources for those seeking jobs in the environment.

To find a job working for...

- *University, Research, and Consulting* - Look in *Science*, *BioScience*, and the *Chronicle of Higher Education* for advertised positions and write to consulting firms.
- *Industry* - Many jobs in industry are never advertised. To find these jobs, write to potential employers of interest.
- *State Government* - Vacancies can be obtained through individual state employment web sites. (See EJobs - <http://www.ejobs.org/noindex/state.html>)
- *Federal Government* - The U.S. Government's official site for jobs and employment information is provided by the United States Office of Personnel Management (<http://www.usajobs.opm.gov/>). The Public Service Commission of Canada sponsors a site for Canadian federal jobs (<http://www.psc-cfp.gc.ca/recruit/cfp1e.htm>).

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If you like being outdoors  
investigating the world around you,

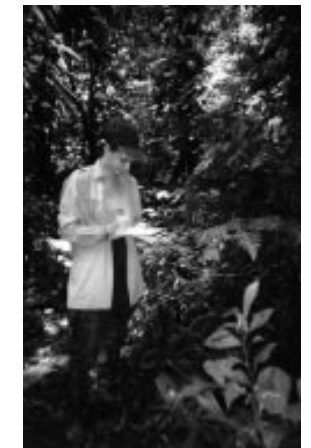
are curious about how the  
environment works,

enjoy solving problems,

and want to make important  
contributions to society,

you should consider the many

# Careers in Ecology



ECOLOGY: from Greek *oikos* = house (place we live) *logos* = (study of)



- the scientific study of organisms and their environment, addressing:
  - the distribution and abundance of organisms
  - how living things interact with each other and their environment
  - the fluxes of matter and energy through the living world
- the full set of relationships between organisms and their environment, for example:
  - the ecology of the tropical rainforest
  - the ecology of the malaria mosquito
- a disciplinary field, a profession, a community of scientists of which you can be a part!



## WHAT DO ECOLOGISTS DO?

Ecologists contribute significantly to our understanding and preservation of the natural world. They provide knowledge to assess ecological issues in a wide range of environments, to solve problems in meeting the food, shelter, and health needs of humans, and to enrich the lives of people everywhere through a greater insight into the mysteries of the biosphere.



## Ecologists...

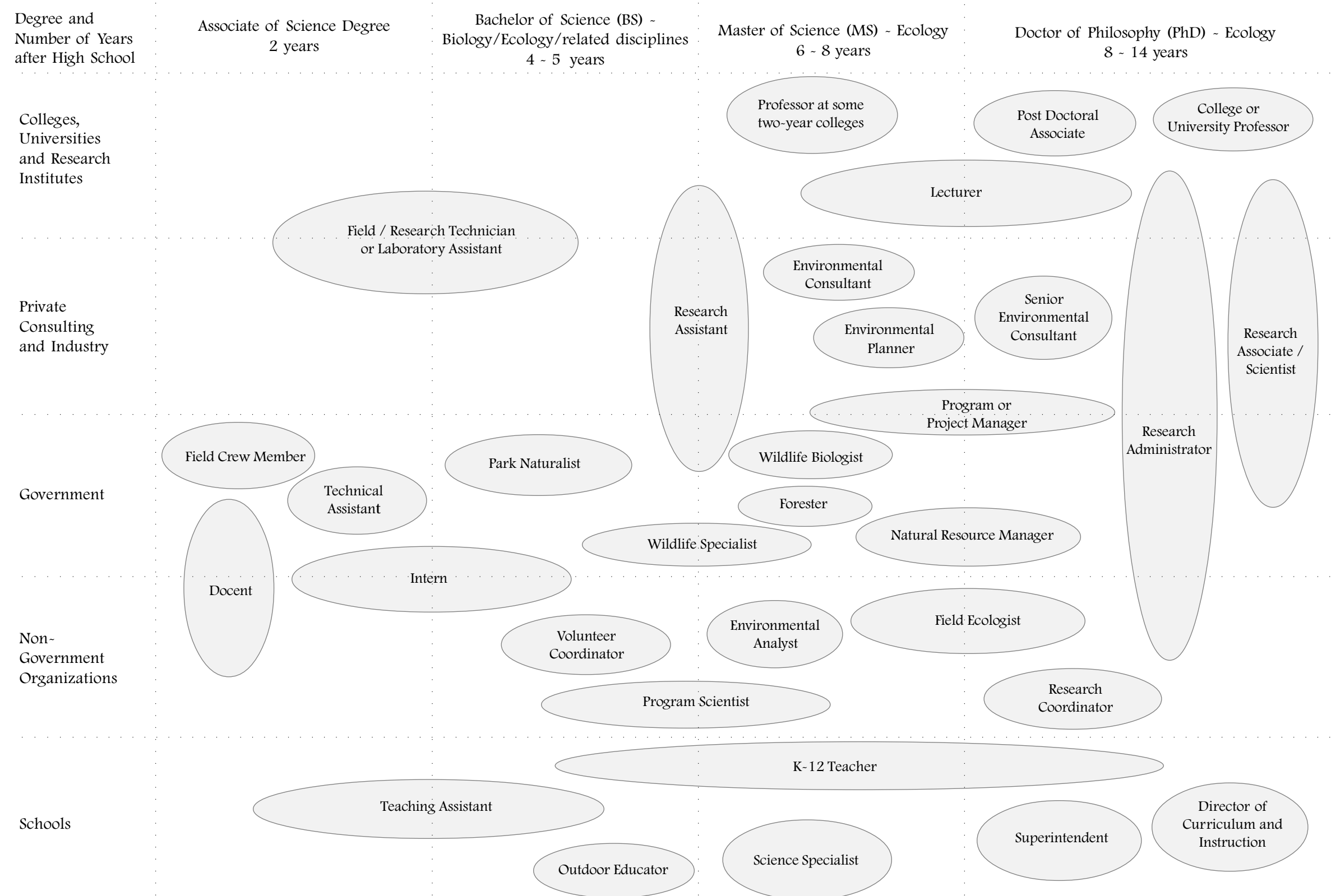
- conduct research outdoors and in the laboratory - by asking both theoretical and practical questions that can be investigated using scientific techniques in exotic places or close to home.
- teach students and the general public - at universities or colleges as well as at high schools, museums, and nature centers.
- apply ecological knowledge to solve environmental problems - by investigating ecological issues, interacting with affected communities, writing environmental impact statements, and designing sustainable practices.
- help manage natural resources - by monitoring, managing, or restoring populations and ecosystems.
- advise students and local, state and federal policy makers - by recommending course work and research, working on committees, and providing the best available scientific information to politicians.
- communicate with co-workers, students, and the public - by writing articles and research papers, giving lectures and presentations, participating in discussions, and conducting outreach in their local communities.



## WHAT KINDS OF JOBS ARE THERE IN ECOLOGY?



Careers in ecology exist for all experience levels and abilities - - job descriptions are equally diverse. In most cases, salaries, levels of responsibility, and levels of autonomy all increase with increased training and experience. Here are some examples of the types of jobs available according to education level and type of employment organization.





## WHAT COURSES SHOULD I TAKE?

Regardless of the specific focus of their degrees, all ecologists need a broad background in the life and natural sciences. An understanding of the physical sciences, including geology, chemistry, physics, and engineering also is helpful. Ecologists need to communicate ideas to those around them, so it is extremely important to gain experience writing and making oral presentations. They need a working knowledge of mathematics, statistics, and computers to design sound investigations, to analyze and interpret their data, and to understand and build mathematical models of ecological concepts and processes.

Because environmental challenges require working with people and ideas from disciplines beyond the natural sciences, it also is useful for ecologists to know something about the social sciences, such as economics and geography.

If you would like to be an ecologist, but already have an undergraduate degree in a field other than the biological sciences, it's not too late! You may have to make up a few classes along the way, but you still can complete an advanced degree in ecology.



You will find ecology to be an exciting and rewarding career. Working in interesting places, both near and afar, questioning, investigating, finding answers; you will be a respected member of your community. The knowledge you help build will be valued by other scientists, teachers, policy makers, citizens, and managers - - for you will be helping society make sound decisions and contributing to our understanding of how nature works.



## WHAT IS THE JOB OUTLOOK LIKE?

There is a growing need to understand and manage the natural world and our impact on it. This need has resulted in a growth in job opportunities for individuals with ecological backgrounds to conduct ecological research, to determine environmental impacts, to develop management plans to avoid environmental problems and restore ecosystems, to educate the general public, and to develop and manage sustainable communities.

Job opportunities in the ecological and environmental fields are predicted to grow enormously over the next several years - - especially in private companies, non-government organizations, and in pre-college schools more than at universities and federal agencies.

A wide variety of positions requiring the application of ecological principles are available, though the title might not include "ecologist." Some of these job titles include: consultant, planner, analyst, program manager, education coordinator, computer programmer, lobbyist, and lawyer. Remember, personal experiences may help to define new job descriptions and with every experience comes more responsibility, financial compensation, and opportunities.



## HOW DO I LEARN MORE ABOUT CAREERS IN ECOLOGY?

**ASK AN ECOLOGIST** - The best source of information and advice about pursuing a career in ecology is a working ecologist. Ask a professor at school with an ecology background or contact someone at another school nearby or working locally in government or industry. The career center at your school also has information about graduate schools, job search strategies, and career planning.

**JOIN A PROFESSIONAL SOCIETY** - A great way to learn more is by becoming a member of a professional association such as the Ecological Society of America (ESA). By joining ESA you will be a part of a professional non-profit membership organization of ecologists. Through ESA you will be able to: learn about annual meetings, receive the newsletter and *ESA Bulletin*, subscribe to publications, join in discussions, and view job postings through the listserve ECOLOG-L. Contact ESA to learn more about what it offers and how to become a member (<http://esa.sdsc.edu>; email: [esahq@esa.org](mailto:esahq@esa.org)). The web site provides links to other professional organizations as well.

**READ RELATED PUBLICATIONS** - Check your local college or city libraries for books on ecological topics to find specific examples of the issues that ecologists study. Publications such as *American Scientist*, *BioScience*, *Natural History*, *National Geographic*, *Science News*, *Scientific American*, and *Smithsonian* have ecology articles of general interest. Browse professional journals including *Conservation Biology*, *Ecology*, *Ecological Applications*, *Environmental Management*, *Fisheries*, *Journal of Ecology*, *Journal of Forestry*, *Journal of Wildlife Management*, *Limnology and Oceanography*, *Natural Areas Journal*, *Trends in Ecology and Evolution*, and *Wildlife Society Bulletin*. Reading these publications also will help you determine your interests.



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## HOW CAN I GAIN EXPERIENCE DURING COLLEGE?

It is really important and useful for undergraduate students to get practical experience doing ecology. Gaining hands-on experiences is a great way to learn specific skills, help get a feel for the day-to-day work of ecologists, and establish contacts for future jobs.

During the school year or over summer breaks:

- q Work for a professor doing lab, library, or field - work.
- q Seek out Research Experiences for Undergraduates (REU) through the National Science Foundation (<http://www.nsf.gov/reu/>). Many institutions and field stations offer these.
- q Work as a teaching or lab assistant for a biology or ecology course.
- q Spend a summer at a field station. The Organization of Biological Field Stations (<http://jasper.stanford.edu/OBFS/index.html>) is a good place to search for opportunities.
- q Get a summer or part time job with a park, government agency, or nature center.
- q Get an internship. The Environmental Careers Organization (<http://www.eco.org/>) acts as a clearinghouse for a wide variety of internship opportunities.
- q Volunteer. The Student Conservation Association (<http://www.sca-inc.org/>) matches students and volunteer opportunities with government and private agencies.
- q Get a work/study experience with any one of a number of federal natural resource agencies (Forest Service, Bureau of Land Management, Fish and Wildlife Service, National Park Service).