

## Careers in Natural Resources

Students with an interest in earth and life science, conservation and environmental quality, or nature and outdoors have many career paths to choose from. Below is a description of the types of job positions such students may wish to pursue.

### NATURAL RESOURCE MANAGEMENT

A variety of resource professionals are responsible for managing the state's floral and faunal resources. Fisheries managers, wildlife managers and foresters are some of the more common career paths. Some people specialize in specific areas, such as botany, ecology, mammalogy, entomology or ornithology.

**Fisheries management** is the total effort to maintain healthy populations of fish and other aquatic life in our state's waters. Among the people involved are fisheries biologists. A fisheries biologist might deal with a problem of overpopulation of certain fish species in a particular body of water, design and implement aquatic habitat improvements and/or raise eggs and young fish in a hatchery for later release in the wild. A fisheries biologist conducts inventories of aquatic life and is responsible for protecting rare and endangered aquatic species. They work closely with state and federal agencies along with private citizens to manage aquatic ecosystems. Fisheries staff also work to educate the public regarding the value of the state's aquatic resources as well as promoting fishing and its benefits.

**Wildlife managers** are responsible for management activities on animals and their habitats. Some management activities allow the harvest of certain animals while other activities are designed to protect or improve the number of individuals in a rare population. These managers may plant a food plot used by game animals, erect a nesting structure of an endangered species, conduct a controlled burn on a prairie natural area or conduct a survey to monitor population size. Resource managers work with landowners to develop or preserve habitat on private land as well as conducting habitat improvement projects on state-owned land.

**Foresters** are responsible for the complex management and uses of all the natural resources within a forest area. They are committed to the proper use of these resources for the benefit of the whole society. They face the challenges of helping assure an adequate supply of wood for many uses through the practice of ecosystem management, while at the same time protecting biodiversity, proper watershed conditions, wildlife habitats and aesthetic values. They are trained to know about the relationships of all life forms in the forest and how to cope with changes that occur. Their responsibilities may include planning and conducting needed surveys on public, private and urban forest lands, reforesting lands, writing forest stewardship plans and reports, and speaking to the public about conservation policies regarding the forest.

### NATURAL RESOURCE EDUCATION

A variety of educators help to inform the public about natural resources, their value and conservation. Some staff members develop materials to be used by educators, conduct educator workshops or sponsor and administrate national environmental programs. Personnel

train prospective hunters, snowmobilers, boaters and trappers in the regulations and proper techniques to use in these pursuits. Site interpreters explain the recreational, educational, historical and ecological aspects of a particular site and design special programs to educate visitors about its interesting features. Additional educational opportunities are available through a variety of special events held throughout the state.

## **PARKS AND RECREATION**

Staff within the state park system are responsible for the management of wildlife, habitat areas and for providing safe and enjoyable recreational opportunities. Duties vary from site to site depending on the types of habitats present and services available. A large amount of time and effort is devoted to maintaining all state park sites—such as mowing, repairing facilities, painting—or developing new areas. Site staff are responsible for registering campers, picnic groups and hunters and monitoring potentially dangerous situations within the park. Some sites have staff that conduct educational programs for park visitors. All people working in the parks are in contact with park visitors daily and must have good communication skills.

## **RESEARCH**

Many trained professionals study renewable and nonrenewable resources. Some researchers dive in rivers to determine the numbers and health of mussels or trap, tag and release badgers to determine home range and population size. Others study the health of rivers and streams or map out the characteristics of rock layers in the earth's crust. After collecting and analyzing the data, they prepare reports for publication and presentation. Resource managers use the information to learn how to best manage or utilize the resource.

## **ENVIRONMENTAL LAW**

A variety of professionals are involved with making and enforcing environmental laws. Some staff work with the legislature to enact new laws. Lawyers help interpret the laws to ensure resources and resource users are protected. Conservation Police Officers are sworn to enforce laws and regulations designed to protect the resources and assure the safety of persons engaged in outdoor recreational pursuits. Some people are responsible for regulating the use of natural resources, such as the removal of coal or construction in a waterway.

## **ENVIRONMENTAL PLANNING**

Planners blend the technical aspects and desires of the people to develop environmentally sensitive plans, projects and programs. They need to know about natural resource conservation and outdoor recreation programs, local zoning regulations, environmental laws, natural resource impact assessment, building codes and how to negotiate with private landowners for the purchase of land for parks, bikeways and habitat areas. They work with a variety of disciplines and local citizenry to develop an acceptable plan that provides for the wisest use of the land, based on its functions and environmental requirements. They make use of maps, drawings, sketches, photographs and land-use studies.

## **INFORMATION SERVICES**

Natural resource agencies rely on many ways of getting information to the public. Staff writers, artists, photographers and video-graphers are among the professions the Department employs to relay information through brochures, magazine articles, photos and videos. Press aides prepare and distribute news releases about Department programs and answer questions from the media. Some staff members have the responsibility of meeting with sportsmen's associations, fishing clubs, environmental organizations and other constituent groups and publishing a newsletter on current issues that affect the Department and the people who use its services.

## **SUPPORT SERVICES**

While not working directly with natural resources, many staff are responsible for support work. These people are involved with personnel, fiscal, data processing, auditing and clerical matters. They may help to hire people, process boat and hunting permits, sell licenses or maintain accounting records. Others sell natural resource-related merchandise. Some prepare correspondence or enter data. Computer classes for Department personnel are taught by trained support staff. Insurance services, equal opportunity programs, printing and Department mail service are other important support functions.

## **EDUCATION REQUIREMENTS**

Education requirements for these positions vary. Many specify at least a four-year college degree in the specific field or related ones, such as forestry, outdoor recreation or life science. Experience is a valuable asset when attempting to obtain a natural resource-related position and in some cases may be substituted of education. Other positions may require successful completion of performance tests.

## **POTENTIAL EMPLOYERS**

A wide variety of organizations and businesses hire people for natural resource related positions. Below is a partial listing of potential employers.

### **FEDERAL GOVERNMENT**

- \* U.S. Fish and Wildlife Service
- \* U.S. Forest Service
- \* U.S. Army Corps of Engineers
- \* U.S. Environmental Protection Agency

### **STATE GOVERNMENT**

- \* Department of Natural Resources
- \* Environmental Protection Agency
- \* Department of Agriculture
- \* Department of Commerce and Community Affairs
- \* Department of Public Health

## LOCAL OR COUNTY

- \* Park District
- \* Forest Preserve District
- \* Nature Center
- \* Soil and Water Conservation District

## BUSINESS

- \* Land Use Planning or Surveying Firm
- \* Consulting Firm
- \* Nursery or Landscape Company
- \* Power Company
- \* Self-employed

## FOR MORE INFORMATION ON NATURAL RESOURCE CAREERS CONTACT:

- \* Your state Department of Natural Resources, Office of Personnel
- \* Other state, national, county or local natural resource agencies
- \* High School, college or university guidance center
- \* Books and periodic publications from your local library

## OTHER CAREERS

It takes a lot of people to manage natural resources. Below are some of the many other natural resource careers available throughout the world.

- \* air quality control
- \* animal behavior
- \* aquatic biology
- \* entomology
- \* environmental chemistry
- \* environmental economics
- \* environmental health
- \* environmental lobbying
- \* environmental restoration
- \* geology
- \* hazardous waste management
- \* limnology
- \* mammalogy
- \* museum curator
- \* nature interpretation
- \* soil conservation
- \* solid waste management
- \* water conservation
- \* water quality control

*This information was adapted from the State of Illinois Department of Natural Resources Careers in Natural Resources webpage <http://dnr.state.il.us/lands/education/kids/career/career.htm> (1/26/06)*