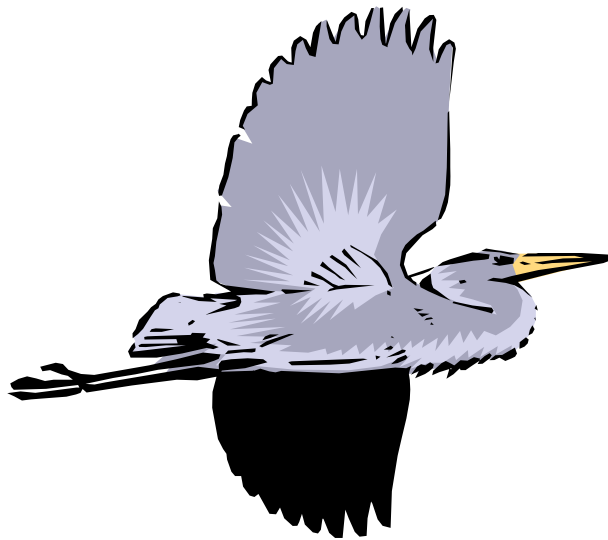


# **MAST ACADEMY OUTREACH**

## **MIDDLE SCHOOL PROGRAM**

### **Birds of Wakodahatchee**

#### **Post-site Package**



**MAST Academy**

**Maritime and Science Technology High School**

**Miami-Dade County Public Schools**

**Miami, Florida**

# **BIRDS OF WAKODAHATCHEE**

## **POST-SITE PACKAGE**

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# Wildlife Careers Worksheet

**Directions:** Read and use **Wildlife Careers** to answer the following questions about careers in the U.S. Fish and Wildlife Service.

1. What are three missions of the U.S. Fish and Wildlife Service?

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2. Match the following positions in the U.S. Fish and Wildlife Services with some of their responsibilities:

- |                                      |  |
|--------------------------------------|--|
| ___ Biological Science Technician    | a. Coordinate fishing and hunting programs, tours, nature walks, and environmental education events.   |
| ___ Clerical Employee                | b. Design, maintain and modify automated systems.  |
| ___ Computer Specialist              | c. Prevent and control aquatic nuisance species.   |
| ___ Engineer                         | d. Create trails.  |
| ___ External Affairs Specialist      | e. Analyze management processes and procedures.  |
| ___ Fishery Biologist                | f. Economic analysis in support of rule-making activities, critical habitat designation.               |
| ___ Forestry and Range Technician    | g. Intercept smuggled wildlife and wildlife products.  |
| ___ International Affairs Specialist | h. Provide information about U. S. Forest Service activities.  |
| ___ Maintenance Worker               | i. Fight fires.  |
| ___ Management Analyst               | j. Plan and design U. S. Forest Service facilities.  |
| ___ Natural Resources Economist      | k. Purchase supplies and maintain files.   |
| ___ Outdoor Recreation Planner       | l. Ensures the safety of visitors to National Wildlife Refuges.  |
| ___ Realty Specialist                | m. Assist in conducting surveys and experiments, managing habitat.                                     |
| ___ Refuge Manager                   | n. Appraise and negotiate for land the U. S. Forest Service acquires.                                  |
| ___ Refuge Officer                   | o. Carry out population surveys, habitat restoration, and reintroduction of endangered species.        |
| ___ Special Agent                    | p. Provide opportunities for wildlife-dependent recreation for refuge visitors.                        |
| ___ Wildlife Biologist               | q. Work with other governments on matters of conservation policy, technical assistance, and education. |
| ___ Wildlife Inspector               | r. Enforce wildlife laws.  |

3. If you wanted to be a Wildlife Biologist with the U. S. Fish and Wildlife Service:
- a. What type of college degree would you need? \_\_\_\_\_  
\_\_\_\_\_
  - b. What types of courses would you have to take? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - c. What would allow you to start your career as a Wildlife Biologist at a higher salary? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - d. Once employed, how many hours of additional training each year would you need to receive? \_\_\_\_\_
  - e. What programs do the U. S. Fish and Wildlife Service provide to help its employees to balance their home and work responsibilities? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - f. How many days of vacation time will you receive during your first three years on the job? \_\_\_\_\_ After 3 years? \_\_\_\_\_ After 15 years? \_\_\_\_\_
  - g. How does the U. S. Fish and Wildlife Service help to prepare its employees for retirement? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Wildlife Careers

U.S. Fish & Wildlife Service

### Careers

*Conserving the  
Nature of America*



*Working for the U.S. Fish & Wildlife Service is more than a career. It is also a commitment — one shared by more than 7,500 men and women representing a diverse range of professions, backgrounds, and specialties who are dedicated to conserving, protecting, and enhancing fish and wildlife and plants and their habitats for the continuing benefit of the American people.*

*From the Arctic Ocean to the South Pacific, from the Atlantic to the Caribbean, Service personnel are working to ensure that future generations of Americans will be able to enjoy nature's beauty and bounty — a challenge that you can help us meet, and a reward few other careers can offer.*

**Become a Part of an Historic Tradition and a Challenging Future**

*"The face and character of our country are determined by what we do with America and its resources."*

Thomas Jefferson

Following a tradition of conservation leadership that is now in its second century, the U.S. Fish & Wildlife Service plays a pivotal role in safeguarding some of this nation's rich natural resources. It is a challenge that is growing more complex every year. You can become one of the employees who bridge the gap between our storied past and our evolving future.

To accomplish its mission, the Service employs many of the country's best biologists, wildlife managers, engineers, realty specialists, educators, law enforcement agents, and others who work to save endangered and threatened species; conserve migratory birds and inland fisheries; restore habitats; provide expert conservation advice to other federal agencies, industry, private citizens, and foreign governments; and manage millions of acres of wildlife lands.

*Outdoor Classroom, Bombay Hook NWR.*

John and Karen Hollingsworth/USFWS



**Be at the Forefront of Conserving Our Natural Heritage**

*"When one tugs at a single thing in nature he finds it attached to the rest of the world..."* John Muir

The people who have chosen careers with us work in more than 120 occupations, helping to develop new knowledge about our natural world and apply it wisely to our living resources. Their positions include:

*Natural Resource Specialists and Related Positions*

**Wildlife Biologists.** Wildlife Biologists carry out a wide variety of duties associated with conserving fish and wildlife species, including population surveys, habitat restoration, reintroduction of endangered species, and evaluation of the impacts of Federal projects. A few specific examples of the work they do is to monitor the status and trends of waterfowl migrating across North America, reconstruct wildlife habitats such as wetlands and tallgrass prairie lands, use aerial and ground surveys to examine animal populations, and work with conservation officials in the states and around the world to track animals of mutual management concern, including polar bears, walrus, and seals.

*Polar Bear Cubs, Arctic NWR.*  
Scott Schliebe/USFWS





**Fishery Biologists.** Like Wildlife Biologists, Fishery Biologists are also involved in a full range of conservation activities. For example, they restore imperilled aquatic species, remove barriers to fish passage, prevent and control aquatic nuisance species, monitor fish populations and health, develop fishery management plans, raise fish through captive propagation, and other activities in support of a wide variety of fish and other aquatic resources.

**General Biologists.** Because these jobs often require knowledge of both fish and wildlife biology, these professionals sometimes are referred to as fish and wildlife biologists. Like our other biologists, they are engaged in a wide range of fish and wildlife management activities. These biologists identify species in danger of becoming extinct; work with private landowners to design recovery plans to save endangered plants and animals; prevent and repair the impacts of pollution on fish, wildlife and their habitats; use computers to digitize wetland data; and work with major zoos to develop standards for the import of animals, such as giant pandas from China, for research and captive breeding.

*Above:*  
**Coleman NFH.**  
Steve Hillebrand/USFWS

**Refuge Managers.** As stewards of our National Wildlife Refuge System, Refuge Managers are experts in wildlife and habitat protection and restoration. They use the best science and technology to monitor and care for wildlife, use a range of land management techniques to ensure suitable habitat, and provide opportunities for wildlife-dependent recreation for refuge visitors. They work with their neighbors, community organizations, and other partners to represent the interests of wildlife in land-use planning and development.



*From top:*  
**Wooduck Drake.**  
Steve Machowski/USFWS  
**Endangered Cactus, Lee's Pincushion.**  
Gary Stoiz/USFWS

**Outdoor Recreation Planners and Rangers.** Outdoor recreation planners and rangers educate the community about Service programs and coordinate wildlife-related recreational activities such as fishing and hunting programs, tours, nature walks, and environmental education events. Most of these positions are located on national wildlife refuges.

**Special Agents.** Special agents are trained criminal investigators who enforce wildlife laws throughout the United States. They conduct investigations which may include activities such as surveillance, undercover work, seizing contraband, making arrests, and preparing cases for court. They often work with other law enforcement authorities. They also are involved in public education and assistance.

**Wildlife Inspectors.** Wildlife inspectors are the Nation's front-line defense against the illegal wildlife trade. Wildlife Inspectors are stationed at the Nation's major international airports, ocean ports, and border crossings. They stop illegal shipments, intercept smuggled wildlife and wildlife products such as animal skins, and help the U.S. fulfill its commitment to global wildlife conservation.



### Other Specialists

**Refuge Officer:** Refuge law enforcement officers protect wildlife from poaching and ensure the safety of visitors to the national wildlife refuges.

The Service's engineers prepare plans, studies, and designs associated with the construction and maintenance of Service facilities. The majority are civil engineers, with a limited number of positions in other specialties including environmental and mechanical engineering and architecture.

Realty specialists, appraisers, and assessors appraise and negotiate for land that the Service acquires.

Administrative officers and management analysts provide a variety of management services for a segment of the Service or analyze and advise on management processes and procedures.

Computer specialists, analysts, and programmers design, maintain, and modify automated systems that support both the scientific and administrative activities of the Service.

External Affairs specialists work with conservation partners, state agencies, Native American tribes, the news media, Congress, and the public to provide information about Service activities.

Service international affairs specialists work with many other U.S. government agencies. They also work with international governments, agencies, and organizations on matters of conservation policy, technical assistance, and education.

Natural resource economists provide economic analyses in support of rulemaking activities, critical habitat designation, valuing compensation for

natural resource damage assessments, and analyses for environmental assessments of refuge master plans.

A large number of Service employees are responsible for carrying out the practical tasks and procedures essential to completing plans and projects. Biological science technicians, for example, may manage habitat, conduct surveys or experiments, and compute and record data. Forestry and range technicians work as fire fighters and help manage public land. Others may be engineering, survey, and cartographic technicians.

Clerical employees are found throughout the Service. Although most of the jobs require computer operation and word processing skills, the actual work is much more than just typing. Managers depend on clerical staff to track budget and expenditures, purchase supplies, maintain files, greet visitors, and handle telephone calls. Some clerical staff members also perform specialized functions in the areas of personnel, procurement, and accounting.

People in the trades and crafts help keep the Service operating. For example, some fish hatcheries have animal caretakers who feed and help rear the fish. On almost every wildlife refuge, maintenance workers and mechanics do everything from creating trails to installing wiring.

### Technical Positions

### Clerical Positions

### Trades and Crafts Positions



From top: USFWS Office Personnel John and Karen Hollingsworth/USFWS GIS Computer Lab at NCTC. Ryan Hagerly/USFWS Physical Science Technician. Keith Weller/USFWS



Necropsy on Duck, Sacramento NWR. Steve Hillebrand/USFWS



*From top:  
Inspection, Asian  
Box Turtle.  
John and Karen  
Hollingsworth/USFWS  
Whistling Swans.  
USFWS*

*Left: USFWS  
law enforcement  
discusses hunting  
regulations.  
John and Karen  
Hollingsworth/USFWS*

#### **How You Can Qualify**

For our entry-level biological and natural resource positions, you must have a Bachelor's degree in biological science or natural resources management from an accredited college or university. This degree qualifies you for one of our General Biologist, also known as Fish and Wildlife Biologist, positions. For fishery occupations, your coursework must have included 6 semester hours in aquatic subjects and 12 semester hours in animal sciences. For wildlife refuge management positions, your degree must have included 9 semester hours in zoology, 6 semester hours in wildlife courses, and 9 semester hours in botany. To be a Wildlife Biologist, your studies must have included 9 semester hours in wildlife subjects, 12 semester hours in zoology, and 9 semester hours in botany or related plant sciences. With a superior undergraduate grade point average of 3.0 or higher (4.0 scale) or advanced degree (Master's and Ph.D.), you may be able to start at a higher salary.

To qualify for our administrative occupations, you need a Bachelor's degree from an accredited institution in any field or related, specialized job experience. As with our biological positions, a superior grade point average of 3.0 or higher (4.0 scale) or an advanced degree can mean a higher pay rate.

College degrees are not required for our technical and clerical support positions. You can qualify based on your experience and/or your education. Certain coursework may be required for some occupations, such as Biological Science, Range and Forestry Technicians.

For all of our jobs, there are situations where you may also combine education and related experience to meet the qualification requirements.

#### **You'll Like the Benefits**

At the U.S. Fish & Wildlife Service, we understand the importance of offering a salary and benefits that will help us attract and retain the best and brightest people. That is why you will find us to be very competitive in all of these areas:

**Pay.** Like all federal employees, those who work for the U.S. Fish & Wildlife Service earn salaries as prescribed by law. Most positions occupied by Service employees are classified either as "general schedule" (GS) or as "wage grade" (WG). General schedule employees, the professional, technical, administrative, and clerical workers, receive annual salaries based on their GS grades 1 through 15. Entry-level biologists, for example, begin at the grade GS-5 or 7 and typically advance to the grade GS-11 or 12 without further competition. Although base salaries for each grade level are the same nationwide, there are some areas in the U.S. that have an additional geographic locality pay. Wage grade employees, those in trades and crafts occupations, receive hourly wages based on comparable private industry wage rates in their localities. Current pay rates can be found on the Internet at [www.opm.gov](http://www.opm.gov).



*Above:*  
*Endangered*  
*Pygmy Fringetree.*  
George Gentry/USFWS  
*Right: Predator*  
*Fence, San*  
*Francisco Bay*  
*NWR.*  
John and Karen  
Hollingsworth/USFWS

*"Like the resource it seeks to protect, wildlife conservation must be dynamic, changing as conditions change, seeking always to become more effective."* Rachel Carson





From top: USFWS employee with red wolf pups. George Gentry/USFWS Congressional Operations Seminar. USFWS

**Training.** The Service is committed to training and learning. That is why training is such an integral part of all careers with the U.S. Fish & Wildlife Service. The Service expects its employees to receive at least 40 hours of training each year. Training opportunities abound both inside and outside the Service. As the "home" of the Service, the Service's National Conservation Training Center (NCTC) is a leader in providing a wide range of training and education services to Service employees and the entire natural resource management community. NCTC routinely provides distance learning broadcasts on a variety of topics. Located approximately 70 miles from Washington, D.C., the NCTC campus provides full-service residential facilities complemented by professional staff, cutting-edge programs and curriculum, and the most advanced technology available. The NCTC offers a unique and diverse range of conservation training courses, designed by and for the conservation professional. Topics range from cold water fish culture to habitat conservation planning, from environmental negotiation to building community support for natural resource programs.

**Work/Life.** The Service helps employees balance home and work responsibilities. We offer comprehensive family-friendly programs including, among many others, the use of alternative work schedules, telecommuting, leave sharing, transportation fringe benefits, employee assistance programs, leave for medical conditions and family responsibilities, and part-time employment/job sharing.

#### **Health and Life Insurance.**

Employees can select health insurance from among many health insurance plans with varying coverage. All permanent employees are eligible to participate in the Federal Employees' Group Life Insurance Program which provides low cost insurance, including disability provisions and survivor benefits.

**Time Off.** In addition to receiving 10 paid holidays per year, employees earn paid vacation time according to their length of service. Employees earn 13 vacation days per year during the first 3 years of service, 20 days per year after 3 years of service, and 26 days per year after 15 years of service. In addition, employees earn 13 days paid sick leave each year.

**Retirement.** The Federal Employees Retirement System is a flexible plan for a flexible work force. Almost all new Federal employees are automatically covered by this system. It includes a tax-deferred retirement savings and investment plan that offers the same type of savings and tax benefits that many private corporations offer their employees under 401(k) plans. Employees can invest up to 10 percent of their salary with the Government matching employee contributions up to 5 percent. Additionally, this plan offers Social Security benefits for retirees at least age 62 as well as disability and survivors benefits and a monthly payment depending on the employee's pay and length of service.



# Wildlife Careers Worksheet: Answer Key

(Total points = 100)

**Directions:** Read and use **Wildlife Careers** to answer the following questions about careers in the U.S. Fish and Wildlife Service.

1. What are three missions of the U.S. Fish and Wildlife Service? (10 points)

Work to save endangered and threatened species; conserve migratory birds and inland fisheries; restore habitats; provide expert conservation advice to other federal agencies, industry, private citizens, and foreign governments; and manage millions of acres of wildlife lands.

2. Match the following positions in the U.S. Fish and Wildlife Services with some of their responsibilities: (3 points each)

<u>m</u> Biological Science Technician	a. Coordinate fishing and hunting programs, tours, nature walks, and environmental education events.
<u>k</u> Clerical Employee	b. Design, maintain and modify automated systems.
<u>b</u> Computer Specialist	c. Prevent and control aquatic nuisance species.
<u>j</u> Engineer	d. Create trails.
<u>h</u> External Affairs Specialist	e. Analyze management processes and procedures.
<u>c</u> Fishery Biologist	f. Economic analysis in support of rule-making activities, critical habitat designation.
<u>i</u> Forestry and Range Technician	g. Intercept smuggled wildlife and wildlife products.
<u>q</u> International Affairs Specialist	h. Provide information about U. S. Forest Service activities.
<u>d</u> Maintenance Worker	i. Fight fires.
<u>e</u> Management Analyst	j. Plan and design U. S. Forest Service facilities.
<u>f</u> Natural Resources Economist	k. Purchase supplies and maintain files.
<u>a</u> Outdoor Recreation Planner	l. Ensures the safety of visitors to National Wildlife Refuges.
<u>n</u> Realty Specialist	m. Assist in conducting surveys and experiments, managing habitat.
<u>p</u> Refuge Manager	n. Appraise and negotiate for land the U. S. Forest Service acquires.
<u>l</u> Refuge Officer	o. Carry out population surveys, habitat restoration, and reintroduction of endangered species.
<u>r</u> Special Agent	p. Provide opportunities for wildlife-dependent recreation for refuge visitors.
<u>o</u> Wildlife Biologist	q. Work with other governments on matters of conservation policy, technical assistance, and education.
<u>g</u> Wildlife Inspector	r. Enforce wildlife laws.

If you wanted to be a Wildlife Biologist with the U. S. Fish and Wildlife Service:

What type of college degree would you need? (5 points) Bachelor's degree in biological sciences or natural resources management.

What types of courses would you have to take? (5 points) nine semester hours in wildlife subjects, 12 semester hours in zoology, and 9 semester hours in botany or related plant sciences.

What would allow you to start your career as a Wildlife Biologist at a higher salary? (5 points)  
A grade point average of 3.0 or higher, or an advanced degree. Some areas of the U. S. also have an additional geographic locality pay.

Once employed, how many hours of additional training each year would you need to receive? (2 points) Forty

What programs do the U. S. Fish and Wildlife Service provide to help its employees to balance their home and work responsibilities? (8 points)

Use of alternative work schedules, telecommuting, leave sharing, transportation fringe benefits, employee assistance programs, leave for medical conditions and family responsibilities, and part-time employment/job sharing. (You may want to explain these concepts to your students.)

How many days of vacation time will you receive during your first three years on the job? 13 After 3 years? 20 After 15 years? 26 (2 points each)

How does the U. S. Fish and Wildlife Service help to prepare its employees for retirement? (5 points)

Federal Employees Retirement System plan includes a tax-deferred retirement Savings and investment plan, Social Security benefits, disability and survivors benefits, monthly payment depending on the employee's pay and length of service.

The School Board of Miami-Dade County, Florida, adheres to a policy of nondiscrimination in employment and educational programs/activities and strives affirmatively to provide equal opportunity for all as required by:

**Title VI of the Civil Rights Act of 1964** - prohibits discrimination on the basis of race, color, religion, or national origin.

**Title VII of the Civil Rights Act of 1964**, as amended - prohibits discrimination in employment on the basis of race, color, religion, gender, or national origin.

**Title IX of the Education Amendments of 1972** - prohibits discrimination on the basis of gender.

**Age Discrimination in Employment Act of 1967 (ADEA)**, as amended - prohibits discrimination on the basis of age with respect to individuals who are at least 40.

**The Equal Pay Act of 1963**, as amended - prohibits sex discrimination in payment of wages to women and men performing substantially equal work in the same establishment.

**Section 504 of the Rehabilitation Act of 1973** - prohibits discrimination against the disabled.

**Americans with Disabilities Act of 1990 (ADA)** - prohibits discrimination against individuals with disabilities in employment, public service, public accommodations, and telecommunications.

**The Family and Medical Leave Act of 1993 (FMLA)** - requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to "eligible" employees for certain family and medical reasons.

**The Pregnancy Discrimination Act of 1978** - prohibits discrimination in employment on the basis of pregnancy, childbirth, or related medical conditions.

**Florida Educational Equity Act (FEEA)** - prohibits discrimination on the basis of race, gender, national origin, marital status, or handicap against a student or employee.

**Florida Civil Rights Act of 1992** - secures for all individuals within the state freedom from discrimination because of race, color, religion, sex, national origin, age, handicap, or marital status.

**School Board Rules 6Gx13- 4A-1.01, 6Gx13- 4A-1.32, and 6Gx13- 5D-1.10** - prohibit harassment and/or discrimination against a student or employee on the basis of gender, race, color, religion, ethnic or national origin, political beliefs, marital status, age, sexual orientation, social and family background, linguistic preference, pregnancy, or disability.

*Veterans are provided re-employment rights in accordance with P.L. 93-508 (Federal Law) and Section 295.07 (Florida Statutes), which stipulate categorical preferences for employment.*

REVISED 8/1/01