



U.S. Fish & Wildlife Service

Directorate Fellows Program

2020 Projects



How to Apply

Review the projects and note the state(s) you are interested in working in. Apply at the respective partner organization website. You may submit an application at each partner's website.

- **[Student Conservation Association \(SCA\)](#)**
Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, Rhode Island, Virginia, Washington D.C. Metropolitan Area, West Virginia, and Wisconsin
- **[American Conservation Experience \(ACE\)](#)**
Alaska, Arizona, Hawaii, New Mexico, Oklahoma, Oregon, Texas, Washington, and Guam
- **[Greening Youth Foundation \(GYF\)](#)**
Alabama, California, Colorado, Florida, Georgia, Kansas, Louisiana, Mississippi, Montana, Nebraska, Nevada, North Carolina, South Carolina, South Dakota, Tennessee, Utah, and Wyoming

- Click on a state below to go to the associated projects -

Projects by State

Alabama	3	Maine	1	Oregon	4
Alaska	12	Maryland	3	Pennsylvania	0
Arizona	3	Massachusetts	7	Rhode Island	1
Arkansas	0	Michigan	3	South Carolina	1
California	14	Minnesota	3	South Dakota	1
Colorado	4	Mississippi	1	Tennessee	2
Connecticut	0	Missouri	1	Texas	8
Delaware	0	Montana	4	Utah	3
Florida	2	Nebraska	1	Vermont	0
Georgia	3	Nevada	2	Virginia	5
Hawaii	4	New Hampshire	0	Washington	1
Idaho	0	New Jersey	2	Washington D.C.	
Illinois	1	New Mexico	5	Metropolitan Area	2
Indiana	0	New York	0	West Virginia	2
Iowa	0	North Carolina	1	Wisconsin	1
Kansas	1	North Dakota	0	Wyoming	2
Kentucky	0	Ohio	0	Guam	1
Louisiana	1	Oklahoma	1		

Alabama (3)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

LIDAR Based Forest Vegetation Surveying/Monitoring (1 of 2 positions)

Project Number: DFP20R4NWR02

Location: Mountain Longleaf National Wildlife Refuge, Anniston, Alabama

Housing: Supported, on site, rent free

Project Description

The LIDAR Project at Mountain Longleaf National Wildlife Refuge will integrate the latest forest vegetation surveying and monitoring technology. Two fellows, working as a team, will use LIDAR to take vegetative plots on Mountain Longleaf National Wildlife Refuge. The fellows will start their fellowship learning from the staff at Tall Timbers Research Station, Tallahassee, Florida. Tall Timbers and U.S. Fish and Wildlife Service staff will instruct them on the protocol and use of the terrestrial LIDAR to survey the vegetation. Then they will spend the majority of their fellowship on the beautiful Mountain Longleaf National Wildlife Refuge in Anniston, Alabama gathering data with the terrestrial LIDAR and adjusting the protocol for the national wildlife refuge system needs, direction and policy. End of the fellowship will have the fellows return to Tall Timbers Research Station for post processing of the LIDAR data. Finally, they will spend a week in the spectacular international city of Atlanta, Georgia, presenting their fellowship work and products to U.S. Fish and Wildlife Service fire, forestry, and inventory and monitoring staff.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, forestry, fire management, ecology, botany, natural resource management, geographic information systems, engineering, LIDAR or other closely related fields.

Working Conditions/Requirements

- Need to have valid driver's license and ability to drive federal vehicles
- Must successfully take UTV Safety Training
- Must successfully take UXO Safety Training, which will inform fellow on how to work safely on former military lands, which contain Un-Exploded Ordinance (UXO)
- Must be able to traverse steep rocky terrain and uneven ground
- Must have an understanding of utilizing GIS/GPS systems
- Must be familiar with developing forest or biological survey protocols (such as timber cruising)

Desired Qualifications

Courses that will support and propel the fellows are as follows:

- Geospatial Information Science area (ARCGIS/GPS)/Spatial Analysis of Natural Resources/Geomatics
 - Ecology of Natural Resources/General Ecology
 - Forest Mensuration/Resource Inventory/Forest or Biological Surveying
 - Forest Management/Wildlife Management
 - Soils and Hydrology
 - Dendrology
 - Public Speaking
-

LIDAR Based Forest Vegetation Surveying/Monitoring (2 of 2 positions)

Project Number: DFP20R4NWR03

Location: Mountain Longleaf National Wildlife Refuge, Anniston, Alabama

Housing: Supported, on site, rent free

Project Description

The LIDAR Project at Mountain Longleaf National Wildlife Refuge will integrate the latest forest vegetation surveying and monitoring technology. Two fellows, working as a team, will use LIDAR to take vegetative plots on Mountain Longleaf National Wildlife Refuge. The fellows will start their fellowship learning from the staff at Tall Timbers Research Station, Tallahassee, Florida. Tall Timbers and U.S. Fish and Wildlife Service staff will instruct them on the protocol and use of the terrestrial LIDAR to survey the vegetation. Then they will spend the majority of their fellowship on the beautiful Mountain Longleaf National Wildlife Refuge in Anniston, Alabama gathering data with the terrestrial LIDAR and adjusting the protocol for the national wildlife refuge system needs, direction and policy. End of the fellowship will have the fellows return to Tall Timbers Research Station for post processing of the LIDAR data. Finally, they will spend a week in the spectacular international city of Atlanta, Georgia, presenting their fellowship work and products to U.S. Fish and Wildlife Service fire, forestry, and inventory and monitoring staff.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, forestry, fire management, ecology, botany, natural resource management, geographic information systems, engineering, LIDAR or other closely related fields.

Working Conditions/Requirements

- Need to have valid driver's license and ability to drive federal vehicles
- Must successfully take UTV Safety Training
- Must successfully take UXO Safety Training, which will inform fellow on how to work safely on former military lands, which contain Un-Exploded Ordinance (UXO)
- Must be able to traverse steep rocky terrain and uneven ground
- Must have an understanding of utilizing GIS/GPS systems
- Must be familiar with developing forest or biological survey protocols (such as timber cruising)

Desired Qualifications

Courses that will support and propel the fellows are as follows:

- Geospatial Information Science area (ARCGIS/GPS)/Spatial Analysis of Natural Resources/Geomatics
 - Ecology of Natural Resources/General Ecology
 - Forest Mensuration/Resource Inventory/Forest or Biological Surveying
 - Forest Management/Wildlife Management
 - Soils and Hydrology
 - Dendrology
 - Public Speaking
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Invasive Plant Mapping and Detection with Partners

Project Number: DFP20R4NWR05

Location: Bon Secour National Wildlife Refuge, Gulf Shores, Alabama

Housing: Supported, on site, rent free

Project Description

This fellowship is based out of Bon Secour National Wildlife Refuge (BSNWR). After receiving appropriate training, the fellow will independently identify and map invasive plants within 6,024 acres of the Lower Alabama Cooperative Invasive Species Management Area (LA CISMA) partner properties using global positioning system (GPS) and geographic information system (GIS) technologies. Upon completion of the directorate fellowship program, the directorate fellow will present an invasive plant GIS map to the LA CISMA partners. The map created by the direct fellow will ultimately be used by the LA CISMA to identify areas for invasive plant removal and habitat restoration efforts. The BSNWR wildlife biologist will supervise the fellow and is a LA CISMA partner. The BSNWR contains close to 8,000 acres of wildlife habitat for migratory birds, nesting sea turtles and the endangered Alabama beach mouse. The refuge was established by Congress in 1980 to preserve the coastal dune ecosystem, to protect threatened and endangered species, to provide compatible recreational opportunities, and to serve as a living laboratory for students and scientists. The Refuge is home to the endangered Alabama beach mouse, which is associated with the sand dunes and sea oats. Refuge beaches serve as nesting sites for loggerhead, and Kemp's Ridley sea turtles. Habitats include beaches and sand dunes, scrub forest, fresh and saltwater marshes, fresh water swamps, and uplands. More than 370 species of birds have been identified on the refuge during migratory seasons. The largest are usually ospreys and several species of herons. At the other extreme, seven species of hummingbirds have been identified. Mammals such as red fox, coyotes, and armadillos are also present.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, ecology, botany, natural resource management, geographic information systems or other closely related fields.

Working Conditions/Requirements

Completion of a Geographic Information System (GIS) course and can create GIS maps. Comfortable working outdoors, in potentially hot, potentially buggy conditions.

Desired Qualifications

Experience using Global Positioning System (GPS) units and transferring data between GPS units and GIS software. Pursuing a degree in geographic and information sciences. Completion of a botany course.

Alaska (12)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Keeping Alaska Wild and Free – Invasive Species Detection

Project Number: DFP20R7FAC02

Location: Alaska Regional Office, Anchorage, Alaska

Housing: Supported, off site, housing stipend, up to \$2,500 total

Project Description

Who wants to spend the summer outside on the lakes and streams of Southcentral Alaska helping to protect these places? If you are, then read on. The Alaska Region of the U.S. Fish and Wildlife Service is seeking a motivated and resourceful individual to implement our newly developed invasive species early detection framework for Southcentral Alaska; the primary focus area being the Anchorage Municipality. Invasive species are one of the greatest threats to Alaska's natural environment and our way of life. Detecting infestations early on is key to having a chance of eradicating the species before it significantly impacts its new environment and responding while it is still relatively low in cost. Bolstering our collaborative early detection efforts in Alaska is a priority for the Alaska Region, the Department of Interior, and the Arctic Council. The selected individual will be based out of the Alaska Regional Office in Anchorage as part of our regional invasive species team and will have ample opportunities to connect with staff from the National Wildlife Refuge Program and Fisheries and Aquatic Conservation Program. The individual will also work closely with our many partners, gaining an in depth view into the diversity of the agency and Alaska's people and its natural treasures. Come learn about Alaska's rich natural resources and the cultures that depend on them while making a difference in preserving them for everyone to enjoy.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, fisheries, ecology, botany, natural resource management, geographic information systems or other closely related fields.

Working Conditions/Requirements

- Must be able to work outside during inclement, and nice, weather conditions.
- Must be able to carry a 40 pound pack of field survey equipment.
- Written and oral proficiency in English.
- Valid state driver's license.

Desired Qualifications

- Ability to effectively paddle a canoe, kayak, and/or john boat.
 - Understanding of fish and wildlife conservation and management.
 - Familiarity with invasive species issues and survey techniques.
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Keeping Alaska Wild and Free – Diversifying Invasive Species Outreach and Education

Project Number: DFP20R7FAC01

Location: Alaska Regional Office, Anchorage, Alaska

Housing: Supported, off site, housing stipend, up to \$2,500 total

Project Description

Invasive species are one of the greatest threats to Alaska's natural environment and our way of life. Preventing the introduction of invasive species such as rats or mussels is the most effective means to maintain our native plants and animals. As such, raising awareness and a greater sense of urgency around invasive species are seen as priorities for the Alaska Region of the U.S. Fish and Wildlife Service (FWS) and the Arctic Council. We are excited to find a passionate, creative, and resourceful individual to help the Alaska Region produce multi-lingual outreach materials that convey the Service's conservation mission and simple steps we can all take to reduce the likelihood that we move invasive species. The selected individual will be based out of the Alaska Regional Office in Anchorage as part of our regional invasive species team and will have ample opportunities to connect with staff from our more rural National Wildlife Refuges and our Fish and Wildlife Conservation Offices. The individual will work closely with diverse Service programs and our partners, gaining an incredible view into the diversity of the agency and Alaska's people and its natural treasures. Come learn about Alaska's rich natural resources and the cultures that depend on them while making a difference in preserving them for everyone to enjoy.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, fisheries, ecology, botany, natural resource management, education/outreach, visitor services, interpretation, environmental education, community outreach, communications, social sciences/humanities, human dimensions, graphic design or other closely related fields.

Working Conditions/Requirements

- Written and oral proficiency in English
- Valid Driver's License

Desired Qualifications

- Can speak various languages fluently (e.g., Chinese, Russian, Yupik, Inuit)
- Understanding of fish and wildlife conservation and management
- Familiarity with invasive species issues
- Interest or familiarity with outreach and education

Creative Story-Telling for the 2021 Fisheries 150th Anniversary

Project Number: DFP20R7EXT01

Location: Alaska Regional Office, Anchorage, Alaska

Housing: Supported, off site, housing stipend, up to \$2,500 total

Project Description

Alaska's lands and waters are important strongholds for healthy aquatic communities that include Pacific salmon, Arctic grayling, whitefish, char, trout, lampreys and more. From rural Alaskans to Anchorage urbanites, these fish are woven into the Alaskan way of life and are integral to cultures and economies across the state and nation. Work with the U.S. Fish and Wildlife Service to develop creative stories and social media campaigns for its 2021 Fisheries 150th Commemoration. The specific project objectives are to develop two creative Alaska fish stories targeting non-fishing audiences and two social media campaigns targeting new anglers and non-fishing audiences. The selected candidate will be based in

Anchorage, Alaska at the Alaska Regional Office. Anchorage is surrounded by wilderness and bisected by salmon streams. He or she will work across programs and with a variety of staff in External Affairs and Fisheries and Aquatic Conservation to reach new audiences about Alaska's amazing fish using creative visual and story-telling techniques. The position will involve work in office and field settings.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in education/outreach or communications with strong emphasis on digital communication skills.

Working Conditions/Requirements

Office plus fieldwork

Desired Qualifications

Strong written and oral communication skills with absolute skills in photography and videography and editing

Campbell Creek Fish Monitoring Video System

Project Number: DFP20R7FAC03

Location: Anchorage Fish and Wildlife Conservation Office, Anchorage, Alaska

Housing: Supported, housing stipend, up to \$2,500 total

Project Description

The fellowship will take place at the Anchorage Fish and Wildlife Conservation Office, located in the North Bicentennial Park in eastern Anchorage, Alaska. The fellow will construct and operate a salmon video monitoring system on Campbell Creek. The fellow will create a protocol for enumerating and identifying passing salmon to species using video. The fellow will also work with Bureau of Land Management's (BLM) Campbell Creek Science Center to provide video footage of passing fish for the public to view and present fish passage data to state and federal partners to better inform harvest management on Campbell Creek. The video monitoring protocol will be applied to future projects in Southcentral Alaska. This fellowship project meets U.S. Fish and Wildlife Service (FWS) goals to conserve aquatic species, educate the public, and involve partners in conservation.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, fisheries, ecology, biostatistics, natural resource management, aquaculture, ichthyology, environmental education, modeling/statistics, biostatistics or other closely related fields.

Working Conditions/Requirements

The fellow must be able to lift and carry up to 50 lbs, work in adverse weather conditions, and potentially encounter dangerous wildlife. The fellow must be willing to carry a firearm for protection (training will be provided).

Desired Qualifications

Desired qualifications include knowledge and experience fish sampling, salmonid fish identification, and proficiency in video editing software.

Comparing sampling methods for juvenile salmon

Project Number: DFP20R7FAC04

Location: Anchorage Fish and Wildlife Conservation Office, Anchorage, Alaska

Housing: Supported, housing stipend, up to \$2,500 total

Project Description

The Anchorage Fish and Wildlife Conservation Office is seeking a fellow to conduct research comparing the efficiency of sampling methods for juvenile salmon to inform survey designs for ongoing research into climate impacts on salmon habitat. Specifically, the fellow will use baited minnow traps to sample juvenile Chinook and Coho salmon at 30 stream sites in southcentral Alaska while comparing two different bait types and two different soak times. Under the supervision of a fisheries biologist and biometrician, the fellow will lead field sampling, data management, and data analysis, preparation of a manuscript for submission to a peer-reviewed journal, and one or more oral presentations. In addition to gaining independent research experience, the fellow will have opportunities to interact with U.S. Fish and Wildlife Service (FWS) staff from a variety of programs and project partners from relevant State agencies and non-government organizations.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, fisheries, ecology, biostatistics, data science or other closely related fields.

Working Conditions/Requirements

Applicants must be willing to work outdoors in uncomfortable conditions (rain, biting insects) and prepared to encounter large and potentially dangerous animals (moose, black and brown bears) and to carry and potentially use a firearm for self-defense. Training in bear and firearm safety will be provided.

Desired Qualifications: Experience with fish sampling, fish identification (especially salmonids), data management, statistical analyses, and writing is desirable.

Fisheries Resource Monitoring Program Assessment and Accomplishments Analysis

Project Number: DFP20R7OSM01

Location: Alaska Regional Office, Anchorage, Alaska

Housing: Supported, housing stipend, up to \$5,000 total

Project Description

The Fisheries Resource Monitoring Program (Monitoring Program) is a multidisciplinary collaborative effort that enhances subsistence fisheries research and provides necessary information for the management of subsistence fisheries on Federal public lands and waters in Alaska. The Monitoring Program encourages partnerships between tribes, rural organizations, universities, and Federal and State agencies. The Monitoring Program supports interdisciplinary approaches to conducting research and addresses management issues, including stock status and trend projects, harvest monitoring, and ethnographic research. The goals of this project are 3-fold. (1) Assemble in one place a detailed record of all the studies funded and completed through the Monitoring Program; (2) Provide a straightforward accounting of what has been accomplished by funding the Monitoring Program; and (3) Identify information gaps to guide future research.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in fisheries, natural resource management, conservation, human dimensions, the social sciences as applied to natural resource issues, or other closely related fields.

Working Conditions/Requirements

The fellow should have capability in spreadsheet programs such as Excel, computer literacy, data entry and analysis, and/or knowledge of database creation or management. We desire experience conducting document or records research, ability to compile large amounts of data or information, and/or experience with program assessment. This experience may be at the assistant or independent-researcher level. We prefer a fellow with demonstrated interpersonal communications skills and ability to clearly write. Public speaking may be required.

Desired Qualifications

Cross-cultural experience or knowledge is desirable but not required. Experience developing strategic and/or business plans is desirable but not required.

Fostering Data Stewardship and Education in Alaska

Project Number: DFP20R7MIG01

Location: Alaska Regional Office, Anchorage, Alaska

Housing: Supported, off site, housing stipend, \$2,500

Project Description

Regional and national initiatives (including the establishment of a data stewardship team in Alaska) are underway to address priority actions for improving data management in U.S. Fish and Wildlife Service (FWS). The Alaska Region currently focuses efforts on communication and raising awareness of both deficiencies in current practices, and standards of best practices throughout the data life cycle, including how field staff can integrate these into current workflows. The fellow will be responsible for interviewing staff biologists with varying levels of familiarity and expertise with best practices of data management and identifying potential barriers to and ways to streamline implementation of data management best practices. The fellow will develop survey questions, complete interviews, summarize findings and develop recommendations for any potential barriers to implementing data management best practices. Their work will include development of outreach materials, informed by survey findings that encourage staff adoption of data management best practices. The fellow will interact with staff from multiple programs and coordinate closely with members of Alaska's cross-programmatic Data Stewardship Team. This project will provide a unique opportunity for the fellow to work cross-programmatically on a high-priority issue at the regional and national levels.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, wildlife biology, fisheries, ecology, botany, natural resource management; education/outreach including environmental education, community outreach, or communications; social sciences/humanities including human dimensions; geographic and information sciences including computer science or data management; or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English.

Desired Qualifications: Knowledge of survey design and interview techniques. Interest in or familiarity with data management and the data life cycle. Interest in or familiarity with outreach and education.

Pacific Walrus haul-out use on Togiak National Wildlife Refuge

Project Number: DFP20R7NWR03

Location: Togiak National Wildlife Refuge, Dillingham, Alaska

Housing: Supported, on site, rent free

Project Description

Togiak National Wildlife Refuge includes 4.7 million acres on Bristol Bay in southwestern Alaska. It is home to one of the world's best wild salmon runs including all 5 species of Pacific salmon along with being home to moose, caribou, brown bears, wolves and, seasonally, Pacific walrus. Pacific walrus are a subsistence resource to coastal native Alaskans. Togiak National Wildlife Refuge is mandated to manage in a way that provides continued access to subsistence resources for local residents. Walrus population monitoring at coastal haul-outs on the Refuge has been conducted for over 25 years. The objectives for this project are to update the relational database of walrus haul-out observations, service remote cameras used to collect long-term monitoring data on walrus haul-outs at Hagemeister Island, Cape Newenham, and Cape Peirce, develop statistical models to examine trends in walrus haul-out use over time, and report results of walrus haul-out monitoring efforts to varied audiences including scientific and public communities. Results from this project will help Refuge staff gain better understanding about the patterns of use of coastal haul-outs on the Refuge and help us meet mandated purposes. The successful applicant will have an opportunity to work independently on monitoring projects as well as alongside the professional biological staff of the Refuge. This is an opportunity to work with a uniquely Arctic wildlife species.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in conservation biology, wildlife biology, ecology, natural resources management, modeling/statistics, or other closely related fields.

Working Conditions/Requirements

Travel to field sites is by light fixed wing and rotary wing aircraft. Applicant must be comfortable in cramped spaces while flying for periods up to 3 hours at a time. Moderate hiking along the tops of cliffs near the ocean is required to service monitoring cameras. Applicants should not be afraid of heights. Field work may require several days at remote camp sites without electricity or cell reception.

Desired Qualifications

Ideal candidates will have a basic understanding of statistical procedures and analysis. Knowledge of Program R and Microsoft Access will be helpful.

Tundra Nesting Bird Breeding Ecology Study at Arctic National Wildlife Refuge

Project Number: DFP20R7NWR01

Location: Arctic National Wildlife Refuge, both at office in Fairbanks, Alaska and at remote tent camp

Housing: Supported, on site, rent free in Fairbanks; tents in the field

Description of Work

The U.S. Fish and Wildlife Service, Arctic National Wildlife Refuge (ANWR) is currently accepting applications for a fellowship on a project investigating the breeding ecology and limiting factors of tundra

nesting birds (including shorebirds, geese, eider, loons, gulls, and passerines) along the Beaufort Sea coast. Work will occur at a remote research camp along the Canning River on Arctic Refuge which offers amazing birding and arctic wildlife viewing opportunities. The positions will begin in late May with a weeklong orientation and continue through late August. This is a collaborative project, and the crew will include scientists and technicians from Manomet Inc. (<https://www.manomet.org>), ANWR (<https://www.fws.gov/refuge/arctic>) and graduate students from the University of Alaska Fairbanks. Fieldwork will involve setup and maintenance of the remote camp; nest searching; trapping, measuring, and banding shorebirds and waterfowl; collecting tissue samples; and monitoring nests with time-lapse cameras. There will also be opportunities to engage with scientists working at the camp on lemmings, Arctic foxes, water quality, and botany projects. Field assistants typically work 7 days/week while in the field. The fellow will be treated as a member of the broader team and will be involved in all aspects of the project.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, ecology, natural resource management, marine biology or other closely related fields.

Working Conditions

The fellow will be at the remote field camp from early June through mid-July and there will not be opportunities to take leave during that period. Conditions will generally be cold, windy, and buggy. Access to the site is by small single engine aircraft or helicopter. Camp life will be remote and primitive (tents only). During periods of bad weather, staff can be cut-off from any outside help for several days. Assistants will be required to carry firearms in the field for bear protection. Excellent physical condition is necessary to meet the strenuous demands. Crews will be exposed to long days hiking (up to 15+ miles per day) in waders over very uneven tundra and wetlands carrying a heavy backpack; wading through icy ponds to access nests; cold, wet, windy weather (daytime highs in early June are generally around freezing and winds usually a constant 15-25 mph); and LOTS of mosquitoes. If being wet, cold, and uncomfortable; sleeping in a small cold damp backpacking tent; and walking in damp waders that will develop leaks regularly for 8+ hours a day sounds miserable, you will not enjoy this job! Candidates should have a strong interest in bird ecology, a desire to live in a remote field camp mostly cut off from the outside world, and the ability to maintain a positive attitude and work well with others under difficult field conditions.

Requirements

- At least 18 years old.
- Basic understanding of wildlife conservation, environmental biology, and policies.
- Experience using a GPS.
- Ability (physically, mentally, and legally) to carry and use a firearm for bear protection.
- Willingness and desire to spend 6 weeks at a remote field camp with no contact to the outside besides occasional use of a satellite phone.
- Willingness, physical ability, and desire to hike over uneven terrain carrying a 30 lb pack for 15 miles+ per day, 7 days a week, for 6 weeks.

Desired Qualifications

- Knowledge of the principles of avian biology and ecology, sufficient to complete field projects.
- Experience working on field crews on avian biology studies or extensive subsistence hunting and fishing.
- Experience living and working in remote field camps for extended periods where work conditions are hazardous and there is no immediate access to medical assistance.
- Experience using a firearm for hunting, in the military, or for bear defense while conducting fieldwork.

Digital Media at the Arctic National Wildlife Refuge

Project Number: DFP20R7NWR02

Location: Arctic National Wildlife Refuge, both in the office in Fairbanks, Alaska and at remote campsites

Housing: Supported, on site, rent free in Fairbanks; tents in the field

Description of Work

The Arctic National Wildlife Refuge seeks a self-motivated, independent, and creative fellow to work with our education and outreach team. The fellow will attend three week-long culture and science camps offered in remote communities near our northern refuges. The fellow will be tasked with creating short (4-6 minute) films capturing the essence of these camps and tying them to the Alaska Region's strategic intent themes. These themes are summarized as "wildness for all life" and are captured in the following statement: "In Alaska, we are shared stewards of world renowned natural resources and our nation's last true wild places. The lands and waters of this place we call home nourish a vast and unique array of fish, wildlife and people. We cultivate awareness and respect for all things, from Alaska's smallest plants and most iconic animals to its diverse communities and cultures. Our hope is that each generation has the opportunity to live with, live from, discover and enjoy the wildness of this awe-inspiring land and the people who love and depend on it." The fellow will be tasked with developing a storyline that speaks to these themes; capturing the representative footage at the camps; and editing the footage into short films. The films will be used in many outreach applications with a variety of audiences. The fellow assigned to this task must be open-minded, creative, culturally sensitive, and carry a strong sense of adventure.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in film production, digital media or other closely related fields.

Working Conditions

The fellow will work in the office in Fairbanks and at three remote science and culture camps. The camps 3-5 days each require staying over-night in remote Alaska villages.

Requirements

- Film-making, to include the collection and editing of footage
- Excellent writing skills
- Excellent interpersonal skills
- Ability to think creatively and engage audiences in innovative ways
- Ability to work independently
- Strong technical/technological capacity

Desired Qualifications

- Cross-cultural experience, such as study abroad
 - Basic understanding of wildlife conservation and/or management
 - A sense of adventure
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Customs Guide to Alaska Native Handicrafts

Project Number: DFP20R7OLE01

Location: Anchorage Import/Export Office, Anchorage, Alaska

Housing: Supported, off site, housing stipend, up to \$2,500 total

Project Description

Fellow will live in Anchorage, Alaska and work with U.S. Fish and Wildlife Service Office of Law Enforcement wildlife inspectors based at the Anchorage International Airport. Fellow will independently work on an outreach project important to our law enforcement program. Fellow will have the opportunity to assist wildlife inspectors conducting inspections at a Port of Entry and then transfer knowledge learned into an informational guide educating the public, local businesses and Alaska Native artisans on the do's and don't's of international travel with and shipping of Alaska Native handicrafts containing wildlife parts. The experience will provide opportunities to network with internal and external conservation partners.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, education/outreach, social sciences, law enforcement or other closely related fields.

Working Conditions/Requirements

Valid state driver's license

Desired Qualifications:

- Experience working with Microsoft office and Adobe acrobat software
- Coursework in Wildlife Management or Criminal Justice
- Publication experience
- Wildlife identification skills
- Knowledge of traditional Alaska Native handicraft creation and/or study

Demonstrating the Investments and Rewards of Data Management

Project Number: DFP20R7FAC06

Location: Fairbanks Field Office, Fairbanks, Alaska

Housing: Supported, housing stipend up to \$3,000

Project Description

Improved management of data resources is a Service priority at regional and national levels. The Alaska Region is implementing new tools and processes to support management of scientific data for the Region's five core science programs and has developed interim guidelines for data management best practices. Through this project, the fellow will apply this regional guidance to a suite of tabular datasets, while recording for each dataset the steps required, the time required to complete the steps, issues encountered, and how problems were resolved. The pre-selected datasets from across multiple programs will vary in their time since collection, and the fellow will summarize the findings of this qualitative analysis. Additionally, the fellow will design a quantitative analysis with a Fisheries program dataset to which data management best practices were applied, addressing a question that would not be possible to answer with the dataset prior to completing the data management steps. The fellow will be supervised through the Fisheries program and will have the opportunity to participate in a Fisheries field project. The fellow will work with datasets from multiple programs and coordinate closely with members of Alaska's cross-programmatic Data Stewardship Team. The findings will about the potential scope of regional investment required for data management and how that investment varies with time since data

collection. We anticipate that this project will demonstrate the value of managing data as an immediate step of data collection investments, in terms of staff time and information available to inform management decisions.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, fisheries, ecology, botany, or natural resource management; geographic and information sciences including computer science or data management; or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English.

Desired Qualifications

Willingness and ability to learn new software applications. Familiarity with R software for data manipulation and analysis. Interest in and familiarity with data management and the data life cycle. Familiarity with methods of data collection and storage. Interest in and familiarity with fisheries or wildlife science or management.

Arizona (3)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Northern Mexican Gartersnake (*T. eques megalops*) Inventory and Monitoring

Project Number: DFP20R2NWR03

Location: Bill Williams River National Wildlife Refuge, Parker, Arizona

Housing: Supported, on site, rent free

Project Description

The Lower Colorado River not only supports a wide array of threatened and endangered species that are dependent on the protection, conservation, and restoration of freshwater habitat, but also serves as a water and power source for human population centers throughout the southwest. The human-generated pressure on this set of ecosystems is immense, which in turn puts vulnerable species, such as the northern Mexican gartersnake, at risk. While the U.S. Fish and Wildlife Service designated the snake as federally threatened in 2014 under the Endangered Species Act of 1973, detection of the species at Bill Williams River National Wildlife Refuge (NWR) has been limited, in part due to lack of capacity for rigorous sampling. Detection of the species at the refuge could result in changes to habitat management strategies, including the restriction of prescribed burns close to potential snake habitat, non-native species removal to decrease predation on the snake, and restoration of snake habitat. The fellow will be responsible for 1) becoming familiar with northern Mexican gartersnake ecology, conservation status, and trapping protocol, 2) using cartographic data to identify possible northern Mexican gartersnake habitat at Bill Williams River NWR, 3) designating, deploying, and monitoring snake traps, and 4) compiling, processing, and analyzing all trapping data collected throughout fellowship in the form of a written report and formally present results to refuge complex staff, as well as members of the Lower Colorado River Multi-species Conservation Program.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, or natural resource management; geographic and information systems including GIS; or other closely related fields.

Working Conditions/Requirements

Ability to do physical work safely and efficiently, on a regular basis, often in difficult conditions, including heat in excess of 110F during the middle of the day. Must have a valid state driver's license by the start of the fellowship.

Desired Qualifications

Knowledge and skills in conducting field surveys; good organizational skills and computer skills; strong interest in conservation, and species management; experience with GPS equipment and GIS software; proven ability to work cooperatively with diverse people; good communication skills and interpersonal skills; self-directed, motivated, and able to work without close supervision; open to receiving feedback and direction from others.

Leslie Canyon National Wildlife Refuge Species Identification and Monitoring

Project Number: DFP20R2NWR04

Location: Leslie Canyon National Wildlife Refuge, Douglas, Arizona

Housing: Supported, on site, rent free

Project Description

Leslie Canyon and San Bernardino National Wildlife Refuges are located in southeast Arizona's Cochise County, adjacent to the international border with Mexico. Headquarters is located near Douglas, Arizona, not far from the historic town of Bisbee and Tombstone. The primary role of the two refuges is the sustainability and recovery of native fish in the Río Yaqui Basin. At Leslie Canyon National Wildlife Refuge (NWR/refuge), various organisms are regularly being monitored to help determine ecosystem health and function. This project will include three main efforts. Monitoring populations of migratory birds (over 336 species documented on the refuge), following an established continent-wide protocol. Evaluating and assessing existing trail camera data pertaining to wildlife documented at Leslie Canyon NWR over a 12-year (2006-present) long-term study period, to include running trail camera traps during fellowship. Monitoring populations of federally listed Chiricahua leopard frogs, Huachuca water umbel (a rare plant), and yellow-billed cuckoos following established protocols. Summary reports for each project and survey will be completed and provided to the refuge manager, and an overall power point presentation of the fellowship will be developed and presented at the end of the fellowship. This project has real world, immediate applicability in supporting specific Service priorities involving the management and recovery of migratory bird species and federally listed threatened and endangered species. This project will provide on the job experience as well as opportunities to visit the regional office, participate in Southwest Wings Birding and Nature Festival, network with the Southwestern Research Station, and more.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, fisheries, ecology, natural resource management or other closely related fields.

Working Conditions/Requirements

Requires a successful combination of field work and administrative work. Skills as a good data organizer and data systems analyst. Experience with computers, including Microsoft Word, Microsoft Excel, GPS technology, PowerPoint. Skill in oral and written communication, dealing with diverse personalities and disciplines. Ability to safely operate a 4x4 pickup truck. Knowledge of basic wildlife inventory techniques.

Desired Qualifications

Outdoor enthusiast. Experienced hiker in desert environments. Possesses basic wildlife identification skills. Ability to identify birds, reptiles, amphibians, and plants visually and to identify birds by call/song recognition. Experience mist-netting and banding birds. Experience safely handling reptiles and amphibians. Experience using call playback techniques to conduct bird surveys.

Mexican Wolf Conflict Management Data and Analyses

Project Number: DFP20R2ECO04

Location: Mexican Wolf Recovery Project, Alpine, Arizona

Housing: Supported, on site, rent free

Project Description: The Mexican wolf is an endangered subspecies of the gray wolf, protected by the Endangered Species Act. Following the near extinction of the Mexican wolf due to predator eradication efforts, the U.S. Fish and Wildlife Service and partner agencies initiated a binational captive breeding program. Reintroduction efforts into the wild began in 1998 in the United States. The most recent (2018) population count within the United States was 131 wolves within the Mexican wolf Experimental Population Area (MWEPA), which spans portions of Arizona and New Mexico. One of the primary threats to Mexican wolf recovery is excessive human-caused mortality. To combat this threat, it is critical that the interagency field team (IFT) addresses Mexican wolf-livestock and Mexican wolf-human conflicts efficiently and effectively. Improving our ability to respond to stakeholder and partner needs will also help improve public acceptance and perceptions of the program, a critical part of Mexican wolf recovery. The primary objectives of this fellowship project are to consolidate historical conflict and management related data (Excel, Access, paper records and ArcGIS Pro platforms) into the current database (ArcGIS Pro platform), to develop a data review procedure within ArcGIS Pro and to conduct a preliminary analyses evaluating conflicts for temporal and spatial trends and to evaluate the outcomes of management tools currently implemented by the IFT. The fellow will present the final results of the preliminary analyses to members of the Mexican wolf IFT.

Minimum Education Level and Major Requirement

Undergraduate rising seniors or seniors who have not completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, or natural resource management; social sciences/humanities, human dimensions related to wildlife conflict; geographic and information sciences including GIS; or other closely related fields.

Working Conditions/Requirements

Professional experience and/or academic coursework with at least three of the following: ArcGIS Pro, ArcGIS Desktop, Arc Online, Collector, Survey 123, Excel and Access. Applicants must demonstrate: attention to detail, an aptitude for database management, experience with spatial analyses, excellent communication skills, extremely strong work ethic and the ability to work on a team while maintaining a positive attitude. Applicants with an interest and experience in human-wildlife conflict management will be given the strongest consideration. The majority of work will be conducted in an office environment, however some opportunities to conduct field work may occur. The duty station is in a small, remote town; applicants must be willing to represent the FWS in a professional manner during both personal and work hours. Must be able to pass a federal background check and lawfully possess a firearm.

Desired Qualifications

Experience working with wildlife-human and/or wildlife-livestock conflict.

California (14)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Conducting status assessments for threatened and endangered species

Project Number: DFP20R8ECO04

Location: Carlsbad Fish and Wildlife Office, Carlsbad, California

Housing: Supported, housing stipend, \$1,000 per month

Project Description

The fellow will work at the Carlsbad Fish and Wildlife Office (CFWO) to complete a status assessment for threatened and endangered species to evaluate whether the species status has changed since the time it was listed. This work will require extensive review of past literature and much coordination with our partners. This information will be used to develop an account of the species life history and an evaluation of threats impacting the species. Work will also involve site visits to see the habitat. At completion of the 11-week period, the fellow will finalize a status assessment and present their analysis to staff at the Carlsbad office.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in conservation biology, wildlife biology, fisheries, ecology, botany, natural resource management, or other closely related fields.

Working Conditions/Requirements

The majority of work will be conducted from an office environment at the Carlsbad Fish and Wildlife Office. The work is primarily sedentary, although copying, filing, and other slight physical effort may be required. Travel to other offices or site visits will occasionally be required.

Desired Qualifications

Basic understanding in wildlife conservation, environmental biology, or other biological field. Proficiency in Microsoft Office.

Conservation Implementation Planning for Achieving Species Recovery

Project Number: DFP20R8ECO06

Location: Sacramento Fish and Wildlife Office, Sacramento, California

Housing: Supported, housing stipend, \$3,000 total

Project Description

The Sacramento Fish and Wildlife Office oversees recovery efforts for over 100 species listed under the Endangered Species Act. The fellow will have the opportunity to develop a detailed step-by-step plan for activities that will help preclude the need to list or contribute to recovery of one or multiple species. The fellow will be responsible for gathering information and working with both internal and external partners to identify appropriate conservation activities. The will be expected to synthesize information into an action plan and present the plan to office leadership and staff. The project provides flexibility for the fellow to utilize their unique skillset and interests while learning about multiple facets of the Endangered Species Act and U.S. Fish and Wildlife Service.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in biological sciences, conservation biology, ecology, wildlife biology, botany, natural resource management or other closely related fields.

Working Conditions/Requirements

Work is in an office environment with occasional site visits. Expect moderate walking and/or hiking. Must have a valid state driver's license.

Desired Qualifications:

- Knowledge of the theory, principles, and methods of fish and wildlife biology.
 - Ability to research literature (including familiarity with appropriate scientific journals and computer searching processes), analyze data, and apply scientific methods as related to the formulation of management plans, recovery packages, and related documents.
 - Ability to communicate orally to collaborate with peers and cooperators/partners, explain results, and present information.
 - Ability to communicate in writing to prepare project deliverables for diverse audiences.
-

Effects Pathways Manager Entries for High Priority Species

Project Number: DFP20R8ECO03

Location: Carlsbad Fish and Wildlife Office, Carlsbad, California

Housing: Supported, housing stipend, \$1,000 per month

Project Description

Use of the Effects Pathways Manager (EPM) provides a science-based approach to understanding impacts to species that are likely to occur as a result of a broad range of activities that may be proposed within the species' habitats. Through the process of gathering and entering information in EPM, the will learn important parameters about the species' life history, reproduction, seasonality and behaviors. Using that information, the fellow will evaluate the range of effects likely to occur as a result of a broad suite of industrial activities as described in the North American Industry Classification System (NAICS). In learning how to describe and assess the nature and extent of effects associated with this broad range of activities, the fellow will develop a detailed understanding of how to evaluate projects proposed by Federal Lead Agencies or other applicants using a logical, step-wise system that documents the process of analysis. This skillset is extremely valuable to potential future staff in the Ecological Services function of the U.S. Fish and Wildlife Service. By exposing the fellow to this framework for two species (more could be completed, but two is the objective) with different conservation needs, the fellow will come away with a much better sense of the nature of our work and skills required to develop a scientifically sound analysis to support conclusions about effects to listed species in the course of completing Endangered Species Act reviews. These entries will support our office's efforts to populate the EPM and will also contribute to the development of the Consultation Package Builder as that effort moves forward. This, in turn will, support ongoing programmatic and other consultations in our office and our Region.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, wildlife biology, ecology, natural resource management or other closely related fields.

Working Conditions/Requirements

A valid state driver's license is required for use of government vehicles. The majority of the fellow's time will be spent in an office setting at a work station with a phone and computer. Extensive field work is not

part of this fellowship. The candidate should have a good understanding of ecological relationships, as they are the backbone of developing pathways. The candidate should also be comfortable working with new computer programs, as the EPM has been developed specifically for its intended purpose and is not built into another program that may be familiar.

Desired Qualifications

Knowledge of common construction activities, tools and machinery is an asset but is not required for the work. These elements can be learned as part of the orientation to EPM.

Information for Planning and Conservation System (IPaC) Improvements in California

Project Number: DFP20R8ECO07

Location: Sacramento Regional Office, Sacramento, California

Housing: Support, housing stipend, \$2,500 total

Project Description

The U.S. Fish & Wildlife Service's (FWS) Information for Planning and Conservation decision support system (IPaC) can currently deliver Endangered Species Act species lists, detailed resource information for proposed projects, a linear breakdown of project effects to species via Effects Pathway Manager (EPM), and conservation measures. It will soon be able to provide project design recommendations, collect environmental baseline information, incorporate survey results, complete a Biological Assessment, and complete much of the section 7 consultation process via the internet. Development and utilization of the IPaC system is a top priority for the FWS Pacific Southwest Endangered Species Program. To support this effort, the fellow will conduct literature reviews, analyze effects of activities of several project types on two or three Endangered Species Act listed species, compile resource needs (*i.e.*, life history requirements) and conservation measures (actions that benefit or promote the recovery of listed species) for each of the FEMA high-priority species, conduct an organizational review of the information, and enter the resource needs and conservation measures into the Effects Pathway Manager. If time permits, the fellow will also deconstruct project effects in the Effects Pathways Manager. As part of the final presentation, the fellow will recommend improvements to the IPaC system.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, botany, natural resources management, environmental studies, or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English, general knowledge of wildlife ecology, and ability to conduct a literature search.

Desired Qualifications

Skill in communicating effectively both orally and in writing; knowledge of the Endangered Species Act and the regulations and policies relating to its administration. Especially the ability to summarize/assimilate information into a usable work product.

Plankton and Macroinvertebrate Production in a Geothermal Aquaculture Facility

Project Number: DFP20R8ECO05

Location: Klamath Falls Field Office, Klamath Falls, Oregon

Housing: Supported, housing stipend, \$800 per month

Project Description

The Lost River and Shortnose suckers in Upper Klamath Lake (UKL) are endangered Catostomids that have experienced considerable declines in their populations related to a lack of recruitment of juveniles to the adult breeding population. The mission of the Klamath Basin Sucker Rearing Program is to raise Shortnose and Lost River suckers to a size or age at which they can survive and reproduce in UKL to prevent extinction. The fellow will contribute to the program by researching the succession of plankton and macroinvertebrate communities within ponds filled with sterile geothermal well water that vary by fertilization type and amount. The goal of the project is to determine a method for rapid culture of these communities that correspond with the availability of empty ponds and with stocking age of juvenile fish into the ponds. The majority of the tasks involve sampling, identification, and quantification of organisms present in ponds throughout the project. The fellow will then summarize the experimental results and use the findings to create a standard operating procedure for fertilization practices that will be used by U.S. Fish and Wildlife Service staff.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, fisheries, entomology, ecology, botany, natural resource management or other closely related fields.

Working Conditions/Requirements

Coursework in scientific or technical writing (200-300 level); coursework in statistics, R programming, or biological data analysis (300 level); ability to use a dichotomous key; ability to use a microscope; ability to withstand sun exposure while sampling; ability to work with laboratory reagents.

Desired Qualifications

Coursework in fisheries science, aquatic ecology, aquaculture, limnology, ichthyology, or freshwater ecology (9 credits); B.S. in Fisheries Science, Wildlife Science, or a Natural Resource Management related degree.

Southern Oregon and Northern California Bumble Bee Habitat and Survey Protocol (1 of 2 positions)

Project Number: DFP20R8ECO08

Location: Yreka Fish and Wildlife Office, Yreka, California

Housing: Support, housing stipend, \$1,000 per month

Project Description

Widespread declines in bumble bees and other pollinators have been documented in recent decades. Southern Oregon and northern California offer extensive high quality habitat, particularly at higher elevations, for native bumble bees such as Franklin's bumble bee. Surveys for bumble bees and a more thorough assessment of their habitat is needed. Throughout the field season, the fellows will systematically survey and sample known historic bumble bee locations, as well as a selection of highly suitable habitat identified through a habitat suitability model. During these surveys, the fellows will field test a survey protocol. The fellows will also gather habitat information, including the relative abundance of floral resources throughout the growing season and collect genetic samples. An ability to hike, camp, be alone in remote areas, navigate, and drive on four-wheel drive roads is necessary. Survey and habitat

assessment efforts will be coordinated with other agencies and individuals conducting surveys including the U.S. Forest Service, the Bureau of Land Management, other researchers and surveyors, and the U.S. Geological Survey. These efforts will be coordinated with the Oregon Fish and Wildlife Office (FWO) and the Yreka FWO. One fellow will be supervised by the Oregon FWO and one fellow will be supervised by the Yreka FWO. After data collection is complete, the fellows will develop a written report and deliver an oral presentation to the Service and our partners sharing their results. This project is an excellent opportunity for the fellows to learn about the Service's Ecological Services programs and gather data that will be used for Species Status Assessments (SSA), recovery planning, and conservation on a landscape scale.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, wildlife biology, entomology, ecology, botany, natural resource management or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English, familiarity with ESRI software and apps (e.g., ArcGIS Pro and Collector) and an ability to operate a GPS unit. Southern Oregon and northern California have many remote areas and are mountainous. Most work will occur at higher elevations. Fellow(s) will be required to hike, camp, be alone in remote areas, navigate, have a driver's license, and have an ability to drive on four-wheel drive roads.

Desired Qualifications

Insect identification, especially bumble bees; plant identification; an understanding of pollinator ecology; proficiency with ESRI software and apps (e.g., ArcGIS Pro and Collector) and an ability to operate a GPS unit; hiking, camping, navigating, and four-wheel driving; and wilderness or back-country first aid/survival.

Southern Oregon and Northern California Bumble Bee Habitat and Survey Protocol (2 of 2 positions)

Project Number: DFP20R8ECO09

Location: Yreka Fish and Wildlife Office, Yreka, California

Housing: Support, housing stipend, \$1,000 per month

Project Description

Widespread declines in bumble bees and other pollinators have been documented in recent decades. Southern Oregon and northern California offer extensive high quality habitat, particularly at higher elevations, for native bumble bees such as Franklin's bumble bee. Surveys for bumble bees and a more thorough assessment of their habitat is needed. Throughout the field season, the fellows will systematically survey and sample known historic bumble bee locations, as well as a selection of highly suitable habitat identified through a habitat suitability model. During these surveys, the fellows will field test a survey protocol. The fellows will also gather habitat information, including the relative abundance of floral resources throughout the growing season and collect genetic samples. An ability to hike, camp, be alone in remote areas, navigate, and drive on four-wheel drive roads is necessary. Survey and habitat assessment efforts will be coordinated with other agencies and individuals conducting surveys including the U.S. Forest Service, the Bureau of Land Management, other researchers and surveyors, and the U.S. Geological Survey. These efforts will be coordinated with the Oregon Fish and Wildlife Office (FWO) and the Yreka FWO. One fellow will be supervised by the Oregon FWO and one fellow will be supervised by the Yreka FWO. After data collection is complete, the fellows will develop a written report and deliver an oral presentation to the Service and our partners sharing their results. This project is an excellent

opportunity for the fellows to learn about the Service's Ecological Services programs and gather data that will be used for Species Status Assessments (SSA), recovery planning, and conservation on a landscape scale.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, wildlife biology, entomology, ecology, botany, natural resource management or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English, familiarity with ESRI software and apps (e.g., ArcGIS Pro and Collector) and an ability to operate a GPS unit. Southern Oregon and northern California have many remote areas and are mountainous. Most work will occur at higher elevations. Fellow(s) will be required to hike, camp, be alone in remote areas, navigate, have a driver's license, and have an ability to drive on four-wheel drive roads.

Desired Qualifications

Insect identification, especially bumble bees; plant identification; an understanding of pollinator ecology; proficiency with ESRI software and apps (e.g., ArcGIS Pro and Collector) and an ability to operate a GPS unit; hiking, camping, navigating, and four-wheel driving; and wilderness or back-country first aid/survival.

Tracking Compliance with Conservation Banking Agreements

Project Number: DFP20R8ECO02

Location: Carlsbad Fish and Wildlife Office, Carlsbad, California

Housing: Support, housing stipend, \$1,000 per month

Project Description

The Carlsbad Fish and Wildlife Office (CFWO) is the U.S. Fish and Wildlife Service field office responsible for the protection, conservation, and recovery of federally endangered and threatened species protected under the Endangered Species Act (Act) in southern California. One option available to project proponents to offset impacts to federally protected species and other sensitive wildlife is the purchase of credits from an established conservation bank. Conservation banks are lands that are legally conserved, restored and managed in perpetuity for the benefit of certain species and habitats under the terms of a conservation banking agreement. The fellow will work with the CFWO to track compliance with conservation banking agreements. The fellow will evaluate office records to determine if requirements of the agreements have been met or documented. When missing information or requirements are identified, the fellow will coordinate with the property owner (or land manager) to obtain the missing information. This may include reviewing annual reports and conducting site visits to conservation banks with State and Federal Agencies to identify any outstanding management tasks and to help resolve deficiencies in land management. The fellow will enter compliance information into an internal CFWO database to monitor the progress of each bank in meeting its requirements. The fellow will also map the conservation areas using GIS in the database to allow CFWO biologists to visualize conserved areas across the landscape. The fellow will gain real world experience related to the policies, regulations, and conservation strategies of the FWS for federally protected and sensitive plants and wildlife. The fellow will also gain contacts within the FWS, and with other federal and state agencies, and land managers. Training will be provided on relevant southern California species and ecology, conservation strategies, wildlife/habitat management, GIS mapping, and database management.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in conservation biology, wildlife biology, ecology, botany, natural resource management, environmental policy, GIS, cartography or other closely related fields.

Working Conditions/Requirements

The majority of work will be conducted from an office environment at the Carlsbad Fish and Wildlife Office. Some fieldwork will be required, which will be outdoors in semi-remote locations. The fellow must be comfortable working outside and hiking up steep terrain in moderately warm conditions.

Desired Qualifications

Coursework/background in conservation biology, wildlife biology, ecology, botany, natural resource management, environmental policy, GIS, and/or cartography is desired. Ability to conduct fieldwork in semi-remote locations.

Tracking Compliance with Endangered Species Consultations

Project Number: DFP20R8ECO01

Location: Carlsbad Fish and Wildlife Office, Carlsbad, California

Housing: Support, housing stipend, \$1,000 per month

Project Description

The Carlsbad Fish and Wildlife Office (CFWO) is the U.S. Fish and Wildlife Service (FWS) field office responsible for the protection, conservation, and recovery of federally endangered and threatened species in southern California. The fellow will work with the CFWO, federal agencies, non-federal agencies, and biological consultants to track compliance with section 7 consultations and Habitat Conservation Plans (HCP) under the Endangered Species Act. The fellow will evaluate office records for projects that have completed section 7 consultations/HCPs to determine if all project requirements have been met or documented. If project requirements have not been met, the fellow will work with CFWO biologists, the federal or non-federal agencies for each project, biological consultants, and field biologists to obtain the missing information or pursue the conservation actions that were required for each project. This will include site visits to construction sites, completed developments, restoration areas, and conserved lands. The fellow will enter compliance information into an internal CFWO database to monitor the progress of each project in meeting its requirements. The fellow will also map project impacts and conservation areas using GIS in the database to allow CFWO biologists to visualize impacts and conservation of listed species habitat. The fellow will gain real world experience related to the policies, regulations, and conservation strategies of the FWS for federally threatened and endangered plants and wildlife. The fellow will also gain contacts within the FWS, and with other federal and state agencies, local biological consulting companies, and habitat managers. Training will be provided on relevant southern California species and ecology, conservation strategies, wildlife/habitat management, GIS mapping, and database management.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in conservation biology, wildlife biology, ecology, botany, natural resource management, environmental policy, GIS, cartography or other closely related fields.

Working Conditions/Requirements

The majority of work will be conducted from an office environment at the Carlsbad Fish and Wildlife Office. Some fieldwork will be required, which will be outdoors in semi-remote locations. The fellow must be comfortable working outside and hiking up steep terrain in moderately warm conditions.

Desired Qualifications

Coursework/background in conservation biology, wildlife biology, ecology, botany, natural resource management, environmental policy, GIS, and/or cartography is desired. Ability to conduct fieldwork in semi-remote locations.

Assessment of Public Outreach and Engagement Gaps and Opportunities for the San Francisco Bay National Wildlife Refuge Complex

Project Number: DFP20R8NWR04

Location: San Francisco Bay National Wildlife Refuge Complex, Fremont, California

Housing: Supported, on site, rent free

Project Description

The San Francisco Bay National Wildlife Refuge Complex includes seven refuges in the San Francisco and Monterey Bay areas, encompassing a highly urbanized region with diverse communities and cultures. The fellow will assist the refuge staff in identifying current gaps and opportunities for us to engage in a unique and relevant way with more targeted and sustainable approach. Activities will include conducting a web search to identify all organizations and agencies in the San Francisco and Monterey Bay area that provide environmental education and outdoor engagement programs in the communities that surround or are nearby our seven refuges in the Refuge Complex. The fellow will also develop demographic profiles based on available data (e.g. U.S. Census) of nearby communities to help us identify our target audiences. This work will build upon previous visitor surveys and community outreach planning done for the Don Edwards San Francisco Bay NWR and expand to the entire Refuge Complex. Goal is to identify specific, non-traditional groups within the target audience of each refuge using appropriate methods of communication based on the target group. Communication and marketing methods may differ depending on the group; and existing or potential partners would be identified and utilized to capitalize on their resources and relationships. All information will be compiled into a synthesis report and include recommendations on strategies and tactics for conducting education and/or outreach programs for at least one target audience for each of our seven National Wildlife Refuges. The fellow will have an opportunity to learn about the National Wildlife Refuge System and gain hands-on experience in scientific inquiry, natural resources planning, environmental education and outreach, and team building with the diverse interdisciplinary staff at the San Francisco Bay National Wildlife Refuge Complex.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree related to education and outreach, social sciences, or humanities.

Working Conditions/Requirements

The position requires the use of a motor vehicle and fellow must possess a valid state-issued driver's license to operate a government-owned vehicle. Working conditions may include spending several hours outdoors in hot dry or cold wet environment, walking and standing on uneven ground, with exposure to sun, rain, wind, blowing dust and pollen, biting insects, and potential contact with certain plants that can cause allergic reactions. Interior working conditions are typical of a normal office environment. Fellow may occasionally be required to lift and/or carry up to 50 pounds.

Desired Qualifications:

- Knowledge of conservation, natural resource management, and outdoor recreation principles and practices.
- Knowledge of pertinent aspects of economics, sociology, and behavioral sciences to gather and interpret public interest in and barriers related to outdoor recreation, and to identify trends in visitor preferences and needs.

- Knowledge of barriers to engaging new audiences in conservation and outdoor recreation, strategies to overcome barriers, and other issues sufficient to develop projects and partnerships that will serve and engage diverse audiences in conservation.
- Ability to review and analyze visitor services programs, make detailed observations, review best available science, draw sound conclusions, and make sound recommendations for program improvement.
- Ability to work cooperatively with diverse individuals and groups to conduct inquiries, coordinate activities, and solve problems.
- Ability to communicate and present orally, graphically, and in writing in order to brief management and write clear and objective technical reports.
- Proficient with Word, Excel, Access, and Powerpoint; proficient with business machines such as copiers, printers, desktop computers, laptops, and cell phones.

Developing a Sand Dune Restoration Plan to Benefit the Endangered Lange's Metalmark Butterfly

Project Number: DFP20R8NWR05

Location: San Francisco Bay National Wildlife Refuge Complex, Fremont, California

Housing: Supported, on site, rent free

Project Description

The Antioch Dunes National Wildlife Refuge (Contra Coast County, California) was established in 1980 to protect the federally endangered Lange's metalmark butterfly and two endangered plants, Contra Costa wallflower and Antioch Dunes evening primrose. Once part of an extended riverine sand dune ecosystem, the dunes have been seriously degraded over the past 150 years by sand mining, invasive plants, and other threats. Today, the 55-acre Antioch Dunes National Wildlife Refuge (NWR) protects one of the last remaining riverine sand dune environments in the Sacramento–San Joaquin Delta and is the only known location in the world where the Lange's metalmark butterfly is found. The fellow will develop a sand dune restoration plan that identifies the scope, design, and features required to restore and maintain an ecologically functional dune plant community that will support the Lange's metalmark butterfly. The plan will also provide guidance on monitoring and maintaining the dunes to ensure that non-native plants do not re-invade and outcompete the desired plant species that the butterfly relies on for its entire life cycle. The fellow will contribute substantially to meeting the conservation vision for the Antioch Dunes National Wildlife Refuge by developing a restoration plan using management actions that mimic natural processes to support self-sustaining populations of Lange's metalmark butterfly, wallflower, primrose and other native species. The fellow will have an opportunity to learn about the National Wildlife Refuge System and gain hands-on experience in scientific inquiry, restoration project design, natural resources planning, wildlife and habitat surveys, and team building as a member of the diverse interdisciplinary team at the San Francisco Bay National Wildlife Refuge Complex.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, conservation biology, wildlife biology, botany, ecology, natural resources management, habitat management, restoration ecology, geography or other closely related fields.

Working Conditions/Requirements

The position requires the use of a motor vehicle and fellow must possess a valid state-issued driver's license to operate a government-owned vehicle. Working conditions include spending several hours outdoors in hot, dry environment, walking and standing in loose sand, with exposure to sun, rain, wind, blowing dust, sand, and pollen, biting insects, and potential contact with certain plants that can cause

allergic reactions. Interior working conditions are typical of a normal office environment. Fellow may occasionally be required to lift and/or carry up to 50 pounds.

Desired Qualifications

- Knowledge of practices and techniques of wildlife biology, botany, conservation biology, plant ecology, landscape ecology, natural resources management, habitat management, restoration ecology, and/or geography.
- Knowledge of and/or ability to apply a variety of habitat management and restoration techniques (e.g. grazing, fire, herbicide treatment, etc.) to accomplish habitat goals and objectives.
- Knowledge of scientific methods and inquiry, and ability to make detailed observations, review best available science, draw sound conclusions, make recommendations, and prepare technical reports.
- Ability to plan, develop, coordinate and/or participate in development of long-range plans, annual work plans, and/or monitoring and evaluation plans.
- Ability to work cooperatively with diverse individuals and groups to conduct inquiries, coordinate activities, and solve problems.
- Ability to communicate and present orally and in writing in order to brief management and write clear and objective technical reports.
- Proficient with Word, Excel, Access, and Powerpoint; proficient with business machines such as copiers, printers, desktop computers, laptops, and cell phones.
- Experience with working with field equipment and associated software such as Global Positioning Systems (GPS) for data collection and/or Geographic Information Systems (GIS) such as ArcInfo for data interpretation and presentation.

Monitoring/Habitat Use Analysis of an Expanding Nutria (*Myocastor coypus*) Population

Project Number: DFP20R8NWR03

Location: San Luis National Wildlife Refuge Complex, Los Banos, California

Housing: Supported, on site, rent free

Project Description

This project will focus on nutria (*Myocastor coypus*) monitoring at San Luis National Wildlife Refuge Complex located in the Central Valley of California. Nutria are invasive rodents that were first detected in California in 2017 and have spread rapidly to six counties throughout the state. Nutria cause substantial damage to wetland vegetation and water management infrastructure which are especially important to the Refuge Complex, which hosts hundreds of thousands of wintering waterfowl and shorebirds annually. The control of invasive species is mission critical to the U.S. Fish and Wildlife Service (FWS), especially concerning nutria, where it is believed complete eradication from California is still achievable. The fellow will fill an important role in the nutria management efforts on the Refuge Complex by identifying areas of concern and notifying management of new detections and new locations. During the project the fellow will gain experience with recognizing nutria sign, camera trapping, using GIS, data management and recording, performing necropsies and live trapping. Additionally, the fellow will examine the habitat affinities of nutria for the Refuge Complex using data collected during the field season and data from past surveys/records. The habitat model will be employed to target areas for future eradication efforts. The fellow will develop a presentation on nutria at National Wildlife Refuges in the northern San Joaquin Valley to be used within the FWS, partner organizations and the public. This presentation/information will assist in identifying potential nutria concentration areas and to guide management activities. This project will provide valuable monitoring data in order to protect a major wintering site for waterfowl and waterbirds in the Pacific Flyway from the impacts of this invasive species.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, natural resource management, zoology or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English. Requires a valid state motor vehicle license.

Desired Qualifications

Interest in the National Wildlife Refuge System. Some experience with ArcGIS, working knowledge of statistics, prior camera trapping fieldwork, ability to work in a team setting, and the ability to work outdoors and maintain a positive attitude in field conditions that include hot temperatures and wading through wetlands.

At-Risk Species Rapid Assessments and Conservation Strategies (1 of 2 positions)

Project Number: DFP20R8OSA01

Location: Sacramento Regional Office, Sacramento, California

Housing: Supported, housing stipend, \$135 per night

Project Description

Spend your summer working at the interface of science and policy to conserve an at-risk species! The conservation of at-risk species is a regional and national priority for the U.S Fish and Wildlife Service. In this position, you will have the chance to explore the conservation challenges for a species and design proactive science-based solutions. We are looking for qualified applicants who are 1) interested in developing an intimate understanding of the ecology and threats facing at-risk species, and 2) interested in working with internal and external partners to develop conservation solutions to reduce risks. Fellows should be able to synthesize existing scientific information in a way that can inform the development of conservation strategies that describe solutions to complex conservation challenges. We are looking for someone who wants to be part of a team and is a creative problem solver. At-risk species conservation often provides the opportunity to build your network by working with diverse partners including states, federal agencies and non-governmental organizations. This fellowship will include one week of fieldwork. The selected fellow will work in Sacramento, California as part of our Regional Office. In addition to being the state Capital, Sacramento is a hub for Federal natural resources-related agencies and provides opportunities for short weekend drives to Lake Tahoe, Napa/Sonoma, the San Francisco Bay Area, and much more.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, wildlife biology, fisheries, ecology, botany, natural resource management or other closely related fields.

Working Conditions/Requirements

Strong background in ecology, good communication skills (written and oral), enthusiasm, and good interpersonal skills

Desired Qualifications

Statistical analysis, GIS, interest in database development, and data management is desired

At-Risk Species Rapid Assessments and Conservation Strategies (2 of 2 positions)

Project Number: DFP20R8OSA02

Location: Sacramento Regional Office, Sacramento, California

Housing: Supported, housing stipend, \$135 per night

Project Description

Spend your summer working at the interface of science and policy to conserve an at-risk species! The conservation of at-risk species is a regional and national priority for the U.S. Fish and Wildlife Service (FWS). In this position, you will have the chance to explore the conservation challenges for a species and design proactive science-based solutions. We are looking for qualified applicants who are 1) interested in developing an intimate understanding of the ecology and threats facing at-risk species, and 2) interested in working with internal and external partners to develop conservation solutions to reduce risks. Fellows should be able to synthesize existing scientific information in a way that can inform the development of conservation strategies that describe solutions to complex conservation challenges. We are looking for someone who wants to be part of a team and is a creative problem solver. At-risk species conservation often provides the opportunity to build your network by working with diverse partners including states, federal agencies and non-governmental organizations. This fellowship will include one week of fieldwork. The selected fellow will work in Sacramento, California as part of our Regional Office. In addition to being the state Capital, Sacramento is a hub for Federal natural resources-related agencies and provides opportunities for short weekend drives to Lake Tahoe, Napa/Sonoma, the San Francisco Bay Area, and much more.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, wildlife biology, fisheries, ecology, botany, natural resource management or other closely related fields.

Working Conditions/Requirements

Strong background in ecology, good communication skills (written and oral), enthusiasm, and good interpersonal skills

Desired Qualifications

Statistical analysis, GIS, interest in database development, and data management is desired

Colorado (4)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Assessment of Motus Wildlife Tracking Systems technology

Project Number: DFP20R6MIG01

Location: Lakewood Regional Office, Lakewood, Colorado

Housing: TBD. Currently evaluating housing options, possibly at a Refuge or the Black-footed Ferret Recovery Center in northern Colorado

Project Description

Conservation of grasslands and at-risk grassland songbirds, i.e. Sprague's Pipit, Chestnut-collared and McCown's Longspur, and Baird's Sparrow, is a regional conservation priority. High priority information needs for these species include understanding limiting factors that could be contributing to population declines (see Somershoe 2018). Key information gaps include knowledge about migratory patterns and within season movement of individuals during the breeding and wintering periods, stopover locations and duration, and survival. Grassland songbirds are highly nomadic as a result of changing habitat conditions between years and have low return rates to breeding or wintering grounds, thus individuals are challenging to relocate and recapture. And traditional tracking technology is largely ineffective at answering key information gaps for these species. Motus technology does not require recapturing or resighting tagged individuals and can be implemented in order to begin addressing aforementioned key information gaps. Summarizing the results of testing of Motus equipment and initial field tests on grassland songbirds will provide critical information to informing landscape level implementation of Motus across the central grasslands. Motus has not been implemented or tested in large open grasslands, thus testing of equipment is critical to maximizing our effectiveness in developing a functional and connected network of receiving towers.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, including conservation biology, wildlife biology, ecology, natural resource management or other closely related fields.

Desired Qualifications

Ability to work independently in remote areas and some basic level of field experience. Desired would be basic knowledge of Motus technology and/or experience with mist nets and songbird trapping.

Biological Effects Analyst, Develop Conservation Measures and Tools for Endangered Species

Project Number: DFP20R6ECO02

Location: Lakewood Regional Office, Lakewood, Colorado

Housing: Supported, housing stipend, \$3,000 total

Project Description

The U.S. Fish and Wildlife Service (Service) is the premier fish and wildlife agency with a mission of working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. This position is located in the Landscape Conservation and Restoration branch in the Regional Office in Lakewood, Colorado. Interior Regions 5 & 7 are defined

geographically by the Rocky Mountains and part of the Great Plains and includes: North and South Dakota, Montana, Wyoming, Nebraska, Kansas, Colorado, New Mexico and Utah. This position would be stationed in Lakewood, Colorado. The primary purpose of this position is to review available biological data, summarize possible Conservation Measures, develop species/resource conservation needs, deconstruct natural resource activities, develop conservation decision keys, and complete data entry for these activities into the Effects Pathway Manager (EPM). The EPM is a system designed to show how different stressors impact our listed species by explicitly creating connections from species needs to stressors impacting those needs and finally tracking those back to potential project types. The selected applicant will be asked to review literature and speak to species experts to complete interconnected pathways that clearly depict the ways in which potential changes to the environment (e.g. through development) may result in impacts to individuals of that species. Students will collect information on conservation measures then connect those needs to existing stressors that have been previously created. The EPM is part of the larger Service data management system known as the Environmental Conservation Online System (ECOS - <http://ecos.fws.gov/ecp/>). Information collected and entered into the Effects Pathway Manager will help our field offices better evaluate potential impacts from proposed projects and allow Service personnel to focus on issues that have the largest potential conservation impact. Additionally, based on the fellow's experience working with IPaC and collaborating with field offices to build effects pathways, they will develop a succinct report of creative recommendations for how to better integrate IPaC into everyday use in Interior Regions 5 and 7 Ecological Services. The fellow may also converse with other programs and outside partners to understand barriers/challenges with IPaC use and adoption, highlighting opportunities for improved implementation and use.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in ecology, biology or other closely related fields.

Working Conditions/Requirements

General knowledge of wildlife ecology, how to conduct a literature search, and development/use of spreadsheets.

Desired Qualifications

Familiarity with computers including Excel, Word, and online software is essential. Students will also be required to learn the data management system, the Effects Pathway Manager, and should be comfortable with computers and learning new software.

Inspiring Conservation through Visual Storytelling

Project Number: DFP20R6EXT01

Location: Lakewood Regional Office, Lakewood, Colorado

Housing: Yes

Project Description

The mission of the U.S. Fish and Wildlife is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. Our mission is focused on the connections we make to others and this project helps the Service, in three Unified Regions, engage our field offices in helping communicate our work to the American public. What we do everyday is inspiring and we want to inspire the next generation of conservationists and future Service employees through this photo forward project. The fellow will utilize strategic digital tools to amplify the work of the Service in eight western states to help us connect and be relevant to new and traditional constituencies. This project will also advance our Regional priority to support our people by showcasing the work we do

and the incredible people who are behind it. This project will support both our external and internal communications goals and connect us to our constituencies in a visual way.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in social science, communications, digital communications, human dimensions, photography, or other closely related fields.

Working Conditions/Requirements

No specialized working conditions or requirements

Desired Qualifications

Strategic communications experience, social media management, web design, photography

Developmental Draft of a Regional Facilities Levels Guidance Document

Project Number: DFP20R6NWR01

Location: Lakewood Regional Office, Lakewood, Colorado

Housing: Not supported

Project Description

The position is located at the U.S. Fish and Wildlife Service Regional Office in beautiful Lakewood, Colorado at the foothills of the Rockies. The Refuges Facilities Management Branch is requesting fellowship project to create a draft “Facilities Services Levels Guidance” document. The project will focus on outlining the requirements for minimum facilities and facilities related infrastructure and services on National Wildlife Refuges throughout the region. This project will help directly inform regional leadership as well as field stations on where we will be concentrating our limited resources. After the project is complete, Refuge Leadership in the Regional Office as well as at the Station level will have guiding document, which will better inform decisions as to how to manage the regional portfolio of facilities infrastructure, manage expectations, and provide a roadmap into the future.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in business or other closely related fields with an emphasis in business or data analytics.

Working Conditions/Requirements

Office setting with 1 week at a field site visit

Desired Qualifications

Postgraduate degree program concentrating in business or data analytics

Florida (2)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Research for Urban Outreach Strategic Planning

Project Number: DFP20R4NWR03

Location: Arthur R. Marshall Loxahatchee National Wildlife Refuge, Boynton Beach, Florida

Housing: Supported, on site, rent free

Project Description

The Arthur R. Marshall Loxahatchee National Wildlife Refuge is 145,188 acres of northern Everglades and plays a vital role in the health of the overall Everglades ecosystem. Due to the refuge's proximity to a large urban population, it is classified as an Urban National Wildlife Refuge and is distinguished as one of 14 Priority Urban Wildlife Refuges within the National Wildlife Refuge System. Surrounding the refuge is a population of over 6 million people of which 46-87% are of diverse backgrounds and ethnicities all within roughly a one-hour drive of any entrance. This 11-week project consists of analyzing existing research as well as conducting interviews with surrounding urban partners to identify common themes for diverse, non-traditional user groups as to what kinds of experiences they seek in nature and best practices for effectively engaging these audiences.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, education/outreach, social sciences/humanities or other closely related fields.

Desired Qualifications

The fellow should have education and/or experience with research methodology and an ability to work independently. The fellow should also possess effective writing skills and be able to demonstrate research protocols in compiling the written report. The fellow should also have effective oral skills to conduct focus groups, interviews, and to give presentations. Language skills in Spanish or Haitian Creole would be beneficial in interacting with partners who speak these languages.

Freshwater Mussel Recovery in the Apalachicola-Chattahoochee-Flint River Basin

Project Number: DFP20R4ECO04

Location: Panama City Field Office, Panama City, Florida or
Georgia Ecological Services Field Office, Athens, Georgia

Housing: Panama City, Florida: Supported, on site, rent free; Athens, Georgia: Not Supported

Project Description

The Apalachicola-Chattahoochee-Flint (ACF) River Basin, from headwaters in north Georgia, to the Apalachicola Bay and estuary, is a focal geography in the southeast. Allocation of water for multiple uses in the ACF basin has been contentious for decades (e.g., FL v. GA, SCOTUS ruling issued 27 June 2018, <http://www.scotusblog.com/case-files/cases/florida-v-georgia-2/>). This project will provide an opportunity to explore how habitat, water quality, and water quantity influence five listed freshwater mussel species in the Flint River Basin of Georgia. The fellow will complete three separate studies that target Service recovery priorities and the results will be used in the Endangered Species Act processes including recovery planning and species status assessments. The fellow will build technical skills such as habitat mapping using sidescan sonar, mussel sampling and identification, and designing a laboratory experiment

to identify host fish/mussel relationships. Additionally the fellow will complete a high priority modeling-based analysis focused on relationships among drought, consumptive water use, and listed freshwater mussel population characteristics. Perhaps more important than technical skills, will be the unique opportunities to work collaboratively within numerous partnerships that are critical to conservation in the ACF Basin.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, ecology, statistics/biometrics, fisheries or wildlife science, natural resource management or other closely related fields.

Working Conditions/Requirements

Analytical/modeling experience with large datasets

Desired Qualifications

Critical thinking ability, analytical/modeling experience with R and large datasets, curiosity and drive to learn new skills with limited time, ability and responsibility to work independently, excellent communication skills to work with partners, excellent writing skills, data management, and experimental design

Georgia (3)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Freshwater Mussel Recovery in the Apalachicola-Chattahoochee-Flint River Basin

Project Number: DFP20R4ECO04

Location: Panama City Field Office, Panama City, Florida or
Georgia Ecological Services Field Office, Athens, Georgia

Housing: Panama City, Florida: Supported, on site, rent free; Athens, Georgia: Not Supported

Project Description

The Apalachicola-Chattahoochee-Flint (ACF) River Basin, from headwaters in north Georgia, to the Apalachicola Bay and estuary, is a focal geography in the southeast. Allocation of water for multiple uses in the ACF basin has been contentious for decades (e.g., FL v. GA, SCOTUS ruling issued 27 June 2018, <http://www.scotusblog.com/case-files/cases/florida-v-georgia-2/>). This project will provide an opportunity to explore how habitat, water quality, and water quantity influence five listed freshwater mussel species in the Flint River Basin of Georgia. The fellow will complete three separate studies that target Service recovery priorities and the results will be used in the Endangered Species Act processes including recovery planning and species status assessments. The fellow will build technical skills such as habitat mapping using sidescan sonar, mussel sampling and identification, and designing a laboratory experiment to identify host fish/mussel relationships. Additionally the fellow will complete a high priority modeling-based analysis focused on relationships among drought, consumptive water use, and listed freshwater mussel population characteristics. Perhaps more important than technical skills, will be the unique opportunities to work collaboratively within numerous partnerships that are critical to conservation in the ACF Basin.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, ecology, statistics/biometrics, fisheries or wildlife science, natural resource management or other closely related fields.

Working Conditions/Requirements

Analytical/modeling experience with large datasets

Desired Qualifications

Critical thinking ability, analytical/modeling experience with R and large datasets, curiosity and drive to learn new skills with limited time, ability and responsibility to work independently, excellent communication skills to work with partners, excellent writing skills, data management, and experimental design

Developing a Recruit-Retain-Reactivate Event Template

Project Number: DFP20R4EXT01

Location: Atlanta Regional Office, Atlanta, Georgia

Housing: Not supported

Project Description

The External Affairs program is looking for a fellow interested in coordinating with a large range of state and federal partners to develop hunting and fishing Recruit-Retain-Reactivate (R3) events. The fellow will be expected to implement both U.S. Fish and Wildlife Service (Service) and state priorities in developing R3 events that will further hunting and fishing participation throughout the southeast region of the United States. The fellow will need to work independently to research and develop protocols for hosting R3 events on Service owned or managed properties that meet both state and Service needs. At the conclusion of the project, the fellow will have developed a concise template that incorporates the developed protocols that will assist federal and state employees at both the regional and field level in developing and hosting R3 events.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, education and outreach, social sciences/humanities or other closely related fields.

Desired Qualifications

Ability to use basic computer software

Analysis of Culture Protocols of Lake Sturgeon at Five Federal Hatcheries

Project Number: DFP20R4FAC01

Location: Warm Springs National Fish Hatchery, Warm Springs, Georgia

Housing: Supported, on site, rent free

Project Description

This project will focus primarily on the compilation and analysis of culture protocols of Lake Sturgeon from five federal hatcheries to better understand the complexity of rearing processes at differing facilities. The fellow will conduct statistical analysis on existing culture data from 2018-2019 to characterize culture practices and to apply a more comprehensive and uniform approach to rearing lake sturgeon. This opportunity includes active engagement with the Project Leaders and fishery biologists from five federal hatcheries. The fellow will assist with cooperative efforts, propagation and production (spawning, egg care, etc), young-of-the-year transfers, and culture studies conducted at Warm Springs to restore and/or augment lake sturgeon.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, fisheries, natural resources management or other closely related fields.

Working Conditions/Requirements

Critical thinking skills are important and being fluent in Microsoft Office is necessary to complete this project. Communication skills and working collaboratively with many partners is key for this project.

Desired Qualifications

Fisheries students are preferred for this project. Keep accurate records. Compile, analyze and summarize statistical data. Prepare charts, graphs, and figures of analysis.

Hawaii (4)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Kealia Pond National Wildlife Refuge Environmental Education and Community Outreach

Project Number: DFP20R1NWR02

Location: Kealia Pond National Wildlife Refuge, Kahuku, Hawaii

Housing: Supported, on site, rent free or housing stipend, \$1500 per month if quarters are at capacity

Project Description

The Kealia Pond National Wildlife Refuge (KPNWR) encompasses nearly 800 acres of coastal wetland, and coastal strand habitat that conserves biodiversity, including three species of endangered Hawaiian waterbirds, migratory shorebirds, waterfowl, seabirds, endangered and native plant species, endangered Hawaiian monk seals, and green sea turtles. Two key objectives for KPNWR include (1) Provide wildlife-dependent public use and educational opportunities to enhance public understanding and appreciation of its natural resources and (2) Enhance awareness, protection, and appreciation of historic and cultural resources for the education, inspiration and enrichment of the public in a spirit of stewardship and trusteeship for future generations. The fellow will increase the capacity of the KPNWR for both of these objectives by writing, editing and formatting an environmental education plan to be incorporated into the future visitor services plan. The fellow will gain exposure to stakeholders within the U.S. Fish and Wildlife Service at multiple levels by collaborating with staff from Pacific Islands Refuges and Monuments, External Affairs and Conservation Planning and Visitor Services to develop the environmental education plan. Assistance with limited biological work on the refuge to become familiar with monitoring and management tools used to promote species recovery at KPNWR will also be a part of the fellow's role. The fellow will promote partnerships with community members, local schools, non-profits and Native Hawaiian organizations; and will play a key role in expanding opportunities for wildlife-dependent public uses at KPNWR, including wildlife observation, cultural practices, photography, environmental education, interpretation and volunteer service projects. Tremendous potential exists to expand these opportunities for local community members, especially members of the local Native Hawaiian community, at KPNWR with the development of an organized environmental education plan.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, natural resource management, science communication, environmental education, Hawaiian studies or closely related fields.

Required Knowledge/Skills/Working Conditions:

Basic understanding of wildlife ecology, botany, conservation, habitat restoration and endangered species management in Hawaii. Coursework and/or experience in writing and communication required. Valid driver's license. Experience with public speaking, community outreach and/or environmental education required. Ability to work outside and hike with a pack in potentially hot, humid, dry, rainy and unpredictable conditions with a positive attitude.

Desired Qualifications

Experience with 4-wheel drive vehicles. Ability to identify local flora and fauna. Experience with GPS/GIS preferred. Preference for a local candidate with background in Native Hawaiian Culture and/or Hawaiian Language and outreach to Native Hawaiian and local communities. Experience and interest in writing, editing, and formatting for publication is preferred.

Shorebird protection using biosonic hazing during rodenticide application

Project Number: DFP20R1NWR03

Location: Midway Atoll National Wildlife Refuge, Midway Atoll, Hawaii

Housing: Supported, on site, rent free

Project Description

Midway Atoll National Wildlife Refuge, in partnership with Island Conservation, is planning an aerial application of rodenticide to eradicate house mice on Sand Island. The baiting operation will commence July 1, 2020 and the last application could be as late as July 30. We chose this application window to minimize conflicts between the aircraft and flying albatrosses. Shorebirds occurring at Midway (Bristle-thighed Curlews, Pacific Golden Plover, Ruddy Turnstones, and Wandering Tattlers) are vulnerable to the toxicant being used and will ingest it if they have access. To maximize protection for the shorebirds we have scheduled the timing of the application after most of the shorebirds that use Midway will have left for their breeding season up in the Arctic and those remaining to over-summer will be trapped and held in captivity until seasonal migration to breeding grounds in the Arctic. This timing balances human safety and impacts to species with the time of maximum impact on the mice. The few shorebirds that remain will be further protected by placing them in captive care and hazing while the operation is underway and until the toxicant reaches levels in the environment low enough to be considered safe. Prior to the start of the project, the fellow will assist the shorebird mitigation team with catching resident shorebirds and temporarily move them to nearby Eastern Island - which has no mice and will not be treated with the rodenticide bait. The goal will be to capture and hold as many of the migratory shorebirds as possible on Eastern Island and hold them in safekeeping until it is safe to release them. In addition the fellow will assist with finding the most efficient way to deter shorebirds from Sand Island.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in biological sciences including conservation biology, wildlife biology, natural resource management or other closely related fields.

Working Conditions/Requirements

- Experience capturing and handling shorebirds.
- Must be willing and able to work 40+ hours per week.
- Must be in excellent physical and mental condition; able to walk 10 miles a day over variable terrain, lift and carry 25 lbs, ride a bicycle, swim, and be able to perform repetitive stooping and bending motions.
- Must be able to perform all duties in inclement weather including high heat and humidity, strong winds, and heavy rain.
- Must be able to pass a swim test (100 m swim, 100 m snorkel, and 2 minutes treading water).
- Must be comfortable with the use of pesticides.
- Must have a valid driver's license and current passport.

Desired Qualifications

- Avian care and husbandry experience.
- Skill in observation in order to recognize and evaluate conditions of animal health, diets, and behavior.
- Previous experience working in remote field locations.
- Ability to live in close quarters with other people and work with personnel from a diverse range of cultures and backgrounds.
- Experience working as a team member in isolated situations and challenging working environments.

Using sentinel passerines to confirm safe Brodifacoum levels

Project Number: DFP20R1NWR04

Location: Midway Atoll National Wildlife Refuge, Midway Atoll, Hawaii

Housing: Supported, on site, rent free

Project Description

Midway Atoll National Wildlife Refuge, in partnership with Island Conservation, is planning an aerial application of rodenticide to eradicate the house mouse on Sand Island by delivering a lethal dose of rodenticide to every rodent in a manner that minimizes harm to island residents and the ecosystem while still maintaining a high probability of success. The baiting operation will commence July 1, 2020 and the last application could be as late as August 15, 2020. This application window is when there are the fewest birds on the island; in particular, it will minimize conflicts between the aircraft and flying albatrosses. Endangered Laysan ducks and migratory shorebirds such as Bristle-thighed curlews are vulnerable to the toxicant and ingest the bait pellets if they have access. To prevent the exposure of toxicant to these birds we plan to capture birds and hold them on Eastern Island until Sand Island is deemed safe for their return. Due to the overlap in diets of Laysan ducks and non-native passerines (Common mynas and Atlantic canaries), we will capture these species, hold them, and release them first as sentinels to ensure Sand Island is safe before releasing Laysan ducks. The fellow working on this project would join the non-target protection team of the upcoming Midway mouse eradication project. They would participate in the development of a novel method to use non-native passerine birds at Midway to confirm when residues of the toxicant applied in a broadcast application are low enough to release non-target organisms safely back to the environment. The fellow will work with biologists and toxicologists to determine safe thresholds of Brodifacoum level and decision criteria for releasing sentinel species. The fellow will design and implement sampling methods for invertebrates that might pose a risk of secondary poisoning of sensitive non-target birds. When it is considered safe, sentinel birds will be released and the fellow will monitor the health of these birds via telemetry.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, ecotoxicology, environmental science, natural resource management or other closely related fields.

Working Conditions/Requirements

- Must be willing and able to work 40+ hours per week.
- Must be in excellent physical and mental condition; able to walk 10 miles a day over variable terrain, lift and carry 25 lbs, ride a bicycle, swim, and be able to perform repetitive stooping and bending motions.
- Must be able to perform all duties in inclement weather including high heat and humidity, strong winds, and heavy rain.
- Must be able to pass a swim test (100 m swim, 100 m snorkel, and 2 minutes treading water).
- Must be comfortable with the use of pesticides.
- Must have a valid driver's license and current passport.

Desired Qualifications

- Background in or currently studying environmental toxicology.
- Experience collecting terrestrial invertebrates.
- Previous experience working with passerines and using telemetry to track birds
- Previous experience working in remote field locations.

- Ability to live in close quarters with other people and work with personnel from a diverse range of cultures and backgrounds.
 - Experience working as a team member in isolated situations and challenging working environments.
-

Hawaii Wedge-tailed Shearwater Colony Database, Mapping and Outreach

Project Number: DFP20R1NWR01

Location: Honolulu Refuges and Monuments Office, Honolulu, HI

Housing: Provided, offsite, rent free or housing stipend

Project Description

The main Hawaiian Islands (MHI) are home to more than 20 species of seabirds protected under the Migratory Bird Treaty Act (MBTA), yet a comprehensive framework does not exist in which to store and share the locations of seabird colonies within the MHI, making protection difficult. Access to seabird colony information for local agencies, organizations and the public in Hawaii is necessary to prevent destruction to seabird nesting colonies during ground-disturbing construction projects. A network does not currently exist for such information sharing, but there is a current, timely opportunity to collaborate with USGS on the development and dissemination of the Seabird Colony Atlas for the MHI, currently underway. The fellow will assist with development of a seabird colony database and map products to display seabird data, focusing on Wedge-tailed Shearwater (WTSH) in the MHI. These products will help inform agencies, organizations, utilities, and the public about the presence of WTSH colonies in order to reduce disturbance during construction and other activities. The fellow will identify and contact key partners and stakeholders such as state and federal governmental agencies, and non-governmental organizations. They will review database products and make recommendations to improve data consistency between agencies, identify and summarize data gaps, and gather and review seabird survey protocols, with a focus on WTSHs. The fellow will help develop web-based outreach maps and other products and provide in-person Powerpoint presentations to inform stakeholders about the project. This project is a great opportunity to interact with the seabird science and conservation community in Hawaii and to maintain and conserve Hawaii's seabirds for future generations.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, or natural resource management; education/outreach including communications; geographic and information sciences including GIS, or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English, proficiency with windows operating system and personal computers, and experience with databases are required. There may be occasional fieldwork opportunities involving walking and riding in boats.

Desired Qualifications

Understanding of wildlife and conservation biology, or natural resources management. Proficiency with windows operating system and personal computers. Familiarity with Microsoft Word and Microsoft Access or other database program. Interest or familiarity with ArcGIS. Interest or familiarity with outreach and education. Experience reading scientific papers and distilling information therein. Reference review and acquisition (library skills). Experience creating scientific protocol. Data entry, organization, and summary skills.

Illinois (1)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Formalizing Protocols for the Endangered Hine's Emerald Dragonfly Captive Rearing Program

Project Number: DFP20R3ECO01

Location: Chicago Field Office, Chicago, Illinois

Housing: Not supported

Project Description

The fellow would be employed as part of the effort to complete development of the final protocols for the captive rearing and release of the Hine's emerald dragonfly (*Somatochlora hineana*). Specifically the fellow will be trained in the techniques used to maintain Hine's emerald dragonfly larvae in captivity during all stages: egg collection through release of adults to augment populations. The fellow will document these techniques and any successful variations between the primary facilities (USD, GNFH, USRC) currently operating in the captive rearing program for the Hine's emerald dragonfly. The fellow will go through an intensive field and lab training program with experienced experts in the ecology and conservation of the Hine's emerald where they will become familiar with the current captive rearing protocols. They will be trained to capture of adult females from wild populations in order to collect the eggs used to maintain the captive rearing program. The fellow will prepare (in consultation with experts from the various units currently involved) a comprehensive description of captive rearing protocol for the Hine's emerald dragonfly to facilitate future captive rearing and augmentation efforts.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, ecology, wildlife biology, natural resources management or other closely related fields.

Working Conditions/Requirements

Valid driver's license required. Ability to walk on uneven ground, ability to work outside in high temperatures, exposure to insects.

Desired Qualifications

Course work in entomology, population ecology, aquatic ecology, experience with handling and rearing immature insects especially dragonflies, experience netting and handling adult dragonflies, especially rare species.

Kansas (1)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Create a Standards-based Environmental Education Curricula for Great Plains Nature Center

Project Number: DFP20R6NWR03

Location: Great Plains Nature Center, Wichita, Kansas

Housing: Supported, housing stipend, \$3,500 total

Project Description

Great Plains Nature Center is an urban partnership located in the heart of the nation – Wichita, Kansas. It is a partnership between the U.S. Fish and Wildlife Service, Kansas Department of Wildlife Parks and Tourism, the City of Wichita Park and Recreation Department, and the Friends of the Great Plains Nature Center (GPNC). These partners share a common goal of providing opportunities for the public to investigate, understand and develop an appreciation for wildlife and the environment, while promoting sound stewardship of natural resources. Great Plains Nature Center has been in existence for over 20 years with a primary goal of providing education to the student of Wichita and the surrounding areas. However, a written curricula for the Nature Center has never been drafted and so staff members give programs that do not necessarily meet educational standards. The main goal for this project is to work with the staff of the Great Plains Nature Center to draft a curricula that meets the State of Kansas's educational standards and the National Education Standards. The final product will be an Environmental Education Curricula for the Great Plains Nature Center that the current and future staff will utilize. Working in the urban environment is critical for providing a citizenry that is knowledgeable about the environment and the critters that live there since 80% of the citizens in the United States live in an urban environment. There will be many networking opportunities with the project. Meeting with other local groups that provide environmental education and networking with the GPNC partners is mandatory. There will be opportunities to make a visit to the Regional Office in Denver to provide a presentation of the final curricula.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements, pursuing a degree in biological science, environmental sciences, wildlife biology, ecology, natural resource management, visitor services interpretation, environmental education, community outreach, education or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English. Valid state driver's license.

Desired Qualifications

Understanding of interpretation and environmental education. Interest or familiarity with urban audiences. Knowledge of wildlife and wildlife species. Interest in diverse communities and providing educational opportunities to these communities

Louisiana (1)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Assessing habitat use, suitability, and availability through spatial and temporal analysis of telemetry data

Project Number: DFP20R4FAC02

Location: Baton Rouge Fish and Wildlife Conservation Office, Baton Rouge/Lacombe, Louisiana

Housing: Supported, on site, rent free

Project Description

Critical evaluation of the frequency and duration of occupancy of various habitat types by individual species is an important step in understanding the relative importance of habitats features. The spatial distribution and availability of those features on the landscape is an factor in designing meaningful restoration and evaluating success of restoration projects. In Louisiana, the U.S. Fish and Wildlife Service is applying those strategies on Delta National Wildlife Refuge where alligator gar populations are still healthy but could be threatened with decline in the face of future wetland loss. This project will focus primarily on analyzing existing telemetry and habitat information for alligator gar at the mouth of the Mississippi River on Delta National Wildlife refuge to better understand the types of habitats available on the refuge that are used most frequently by alligator gar. The fellow will conduct statistical and geospatial analysis on existing telemetry and habitat information to characterize habitat use and to use that information to develop specific criteria around which to develop management recommendations. That process relies heavily on GIS to demonstrate the temporal and spatial suitability of habitats on the refuge that can provide managers with decision support assistance. Field-work includes validation of spatial habitat classifications through visual and quantitative means. This opportunity includes active engagement with state and federal natural resource managers to coordinate and assist in developing restoration priorities on refuge wetlands in consideration of multiple restoration objectives. It also provides interested fellows with an opportunity to use creative approaches in application of geospatial techniques and expanding GIS skills in a flexible environment. Refuge and Fish and Wildlife Conservation Office (FWCO) staff are available to provide a comprehensive introduction to the project and a strong foundation in support of candidates that are motivated to independently develop and implement this project.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, including conservation biology, fisheries, natural resources management or geographic information system, hydrology, modeling/statistics or other closely related fields.

Working Conditions/Requirements

Spatial analytical skills are important and being fluent in GIS will likely be necessary to complete this project in the allotted timeframe. Technical writing skills are also needed.

Desired Qualifications

PhD candidates are preferred for this project. Statistical analysis will be required, although our staff can provide some level of statistical support if necessary.

Maine (1)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Finding solid ground: Strategies for conserving saltmarsh sparrows

Project Number: DFP20R5NWR07

Location: Rachel Carson National Wildlife Refuge, Wells, Maine

Housing: Supported, on site, rent free

Project Description

Join staff at Rachel Carson National Wildlife Refuge in beautiful Wells, Maine and lead two projects aimed at conserving an At-Risk Species, the Saltmarsh sparrow. Saltmarsh sparrow populations have declined more than 80% since 1998, largely due to nest loss from increased marsh flooding. The proposed priority projects focus on developing tools to adaptively manage salt marsh habitats to conserve this species. The first project focuses on examining the feasibility of using self-regulating tide gates in Maine to reduce saltmarsh sparrow nest flooding. The second project will address a former marsh management technique that utilized ditch plugs to create waterfowl habitat. However, this technique resulted in soggy over-saturated soils, loss of vegetation, and overall habitat deterioration. The fellow will assess some of these former management areas and provide management recommendations.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, wildlife biology, ecology, botany, natural resource management, GIS, or other closely related fields.

Working Conditions/Requirements

Must have GIS/GPS skills and a valid driver's license. Must be comfortable collecting and entering data, using statistical software and word processing. Must be able to independently spend long hours in the field, walking in wet, muddy and hot conditions. Must be able to traverse small channels and ditches and be comfortable working in damp and buggy conditions. Must have prior field work experience in wildlife ecology, wetland ecology or botany. Occasional early mornings and flexibility when the work day starts is required for to meet project field work tasks.

Desired Qualifications

Salt marsh vegetation identification skills, experience banding passerines, and experience with ArcCollector a plus. Experience working with LiDAR datasets and RTK equipment desirable. Enrollment in a graduate program is also desired, but not required.

Maryland (3)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Bethany Beach firefly (*Photuris bethaniensis*) Population and Habitat Monitoring

Project Number: DFP20R5ECO01

Location: Chesapeake Bay Field Office, Annapolis, Maryland

Housing: May be provided at Blackwater National Wildlife Refuge in Cambridge, MD. Requested but not yet confirmed with the Refuge. Rental rate: Unknown at this time.

Project Description

The fellow will assist the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office (CBFO) and Delaware Division of Fish and Wildlife to conduct surveys for Bethany firefly in summer 2020 to confirm presence at ten sites and to assess abundance at nine confirmed sites. The fellow will also evaluate potentially suitable interdunal swale habitat at Assateague National Seashore and survey for presence of the species there. This information will support a Species Status Assessment developed to assess potential listing of the species under the Endangered Species Act, and will also help inform threats and conservation needs for the species. The fellow will prepare a report and presentation on findings of the 11-week fellowship and present those findings and conservation recommendations to the Service, and Delaware and Maryland State Heritage Programs.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in conservation biology, wildlife biology, wildlife management, environmental science, biology, ecology, natural resource management or other closely related fields.

Working Conditions/Requirements

Valid state driver's license. Ability to work in hot, wet, physically challenging field conditions. Written and oral proficiency in English.

Desired Qualifications

Knowledge of GIS and GPS, Skill at identifying insects/fireflies through sight or using keys, familiarity with Atlantic Coast ecology and vegetation.

Saltmarsh Sparrow Population and Habitat Monitoring in the Chesapeake Bay

Project Number: DFP20R5ECO02

Location: Chesapeake Bay Field Office, Annapolis, Maryland

Housing: Supported, off site, rent of \$242.50 per month

Project Description

The saltmarsh sparrow is a tidal marsh obligate songbird of Conservation Concern to the U.S. Fish and Wildlife Service (Service) that occurs exclusively in salt marshes along the Atlantic and Gulf coasts of the United States. While the species still occupies the majority of its historical range, the number of individuals within the breeding range has declined by 84 percent since 1998 due primarily to nest flooding and predation. The fellow will assist the Service's Chesapeake Bay Field Office (CBFO) and Audubon MD-DC to implement baseline monitoring for saltmarsh sparrow at a thin-layer restoration project site, a reference site, several restoration sites, and proposed restoration sites in the Blackwater-Fishing Bay

marsh system during the 2020 breeding season. The fellow will conduct point count surveys for saltmarsh sparrow and other breeding marsh birds using Saltmarsh Habitat and Avian Research Program (SHARP) protocol at the project sites and a reference site. In order to understand habitat conditions at the restoration sites, the fellow will assist with vegetation monitoring at these sites, using methods employed by the CBFO at the Poplar Island Environmental Restoration Project. The fellow will prepare a report and presentation on findings of the 11-week fellowship and present those findings and management recommendations to the Service, Audubon MD-DC, and other restoration partners.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not yet completed their degree requirements and are pursuing a degree in conservation biology, wildlife biology, wildlife management, environmental science, biology, ecology, natural resource management or other closely related fields.

Working Conditions/Requirements

Valid state driver's license. Ability to work in hot, wet, physically challenging field condition. Written and oral proficiency in English.

Desired Qualifications

Geographic Information Systems coursework, skill at identifying birds by sight and sound, vegetation monitoring experience

Delaware River Basin Conservation Act

Project Number: DFP20R5OSA04

Location: Chesapeake Bay Field Office, Annapolis, Maryland

Housing: Supported, housing stipend, \$1000 per month

Project Description

In 2016, Congress passed the Delaware River Basin Conservation Act (DRBCA), recognizing the nationally significant assets of the watershed. Priorities under the DRBCA include: conservation of fish and wildlife habitat; improvements in water quality for both wildlife and people; enhancement of water management for drinking water, ecological needs and flood mitigation; and improved opportunities for public access and outdoor recreation. The fellow will travel to Refuges and field offices within the Delaware River Basin (Delaware, New Jersey, and Pennsylvania) to collect data on each station's conservation needs and priorities, and help to link these with the priorities under the DRBCA. The fellow will have the opportunity to interact with partner organizations ranging from State resource agencies to non-profit, to small non-governmental conservation entities across the Delaware Basin in order to cultivate a better understanding of the conservation challenges within this unique geography. The fellow will create a comprehensive conservation plan and accompanying GIS story map, which highlights and prioritizes the conservation needs within Delaware Basin. Working with partners on landscape-scale conservation, including planning, on-the-ground protection, restoration, management of species and habitats, monitoring, public engagement, research, etc. will mean smarter, more cost-effective conservation and restoration investments. It will also improve our ability to ensure landscapes capable of supporting self-sustaining natural benefits for people, and thriving populations of fish and wildlife – now and in the future. Work products will be presented to U.S. Fish and Wildlife Service leadership and basin partners as a “plan of attack”, which will empower partners and field stations to seek out funding.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, natural resource

management; social Sciences/humanities including law and policy, environmental policy, environmental sustainability, natural resource policy; or other closely related fields.

Working Conditions/Requirements

Written/oral proficiency in English; Understanding of natural resource conservation; Experience with GIS mapping; Valid state driver's license

Desired Qualifications

Experience or interest in conservation planning; Interest in landscape level conservation; Experience working with conservation organizations in a partnership capacity; Experience with natural resource planning

Massachusetts (7)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Communicating to conserve the saltmarsh sparrow and at-risk species

Project Number: DFP20R5EXT01

Location: North Atlantic-Appalachian Regional Office, Hadley, Massachusetts

Housing: Supported, housing stipend, \$3,000 total

Project Description

The fellow will support communication objectives and storytelling related to strategic conservation priorities in the region. A key focus will be on communications around saltmarsh sparrow conservation work. The fellow will have the opportunity to work with scientists and public affairs staff to develop a communications products highlighting the innovative and urgent conservation work of U.S. Fish and Wildlife Service (Service) and partners to save the species. The fellow will be responsible for building relationships, collaborating across programs, and developing stories (blog, web, media). The fellow will produce numerous communications deliverables that inform and inspire target audiences to support efforts to conserve the saltmarsh sparrow and its habitat. The fellow will present their achievements to Service staff and partners. This position will be based out of the Service's North Atlantic-Appalachian regional office in Hadley, Massachusetts.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biology, ecology, and/or communications disciplines.

Working Conditions/Requirements

Valid state driver's license, proficiency in oral and written communications.

Desired Qualifications

Feature writing, news writing/reporter, or similar journalism courses. Freelance writing or journalism internships, or public affairs/public relations experience.

Collaboratively solving conflict between weirs and fish passage

Project Number: DFP20R5FAC02

Location: North Atlantic-Appalachian Regional Office, Hadley, Massachusetts

Housing: Not supported

Project Description

The U.S. Fish and Wildlife Service, North Atlantic-Appalachian region needs assistance in evaluating the pervasiveness of streamflow gaging weirs, the impact of weirs on fish passage, and the identification of solutions that support both fish passage and streamflow gaging needs. The removal of obsolete dams and undersized culverts is a focus for conservation practitioners in the states, the Service, and non-governmental organizations. The habitat restoration and population-level gains that can be made through these activities are significant, and their success often results in benefits to communities. However, we are realizing that streamflow gaging weirs, which often provide vital information to water managers, can impede fish movement. Therefore, it is mission critical that we fully understand the scale of the problem and collaboratively develop solutions so that the success of multimillion-dollar watershed investments is not jeopardized. The project will require working with an interdisciplinary team of experts including

hydrologists, biologists, and fish passage engineers to 1) map streamflow gaging weirs, 2) prioritize them for field investigation based on agency natural resource priorities, and 3) evaluate fish passage and streamflow gaging alternatives. Although results will be generated collaboratively, the fellow will be principally responsible for leading the project Revised July 8, 2019 for the duration of the 11 week period. There are multiple professional development opportunities embedded in this project, including working at the leadership and technical levels, presenting results to multiple agencies and soliciting feedback, developing a technical report with proposed solutions, and navigating sensitive conservation problems. The position is located in the U.S. Fish and Wildlife Service's regional office in Hadley, Massachusetts. Hadley is located in the Pioneer Valley, with an abundance of outdoor recreation opportunities available year-round.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not yet completed their degree requirements and are pursuing a degree in biological sciences (conservation biology, ecology, fisheries, and natural resource management), geographic information systems, hydrology or other closely related fields.

Working Conditions/Requirements

Working conditions include both office and field settings. Site visits to streams involve rocky terrain and wet conditions. Written and oral proficiency in English; Proficient at using Microsoft Word and Excel. Valid state driver's License and capability of swimming are essential.

Desired Qualifications

Knowledge of hydrology, stream ecology, and fisheries management. Capability of analyzing, using, and managing data (e.g. streamflow data) is helpful

Hatchery Infrastructure Digitization and Mapping

Project Number: DFP20R5FAC01

Location: Hadley Regional Office, Hadley, Massachusetts

Housing: Not supported

Project Description

This position will be based at the North Atlantic-Appalachian regional office in Hadley, Massachusetts. The fellow will be assigned to the Fish and Aquatic Conservation Program. This project seeks to gather and digitize infrastructure data at two national fish hatcheries, with the major deliverable being an ArcGIS Online map populated with layers of key infrastructure data at both hatcheries that can be used by staff for future project planning. This project is essential because the infrastructure it seeks to map out is critical for supporting the hatcheries' fish propagation mission. There is not currently a single dynamic resource the hatchery and regional engineering staff can use to see what systems are operational, which increases the risk of inadvertent damage to buried utilities, with potential catastrophic impact to fish on station. This project will present opportunities for professional development in the following areas: construction drawing interpretation; surveying; AutoCAD; ArcGIS; networking and site visits with hatchery staff; networking with regional engineering and program staff; and development of slide presentations to present to stakeholders.

Minimum Education Level and Major Requirement

Rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in engineering, architectural, or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English. Familiar with computers and the development/use of spreadsheets. Must be physically capable of conducting a site visit and performing basic surveying on hatchery ground that may be wooded, grass, or paved.

Desired Qualifications

Skill in communicating effectively both orally and in writing; basic AutoCAD and ArcGIS skills; ability to read and interpret construction drawings; basic surveying skills; valid state driver's license; ability to work in office and outdoor field conditions.

Marsh Experiments to benefit salt marsh sparrow

Project Number: DFP20R5MIG01

Location: Parker River National Wildlife Refuge, Newburyport, Massachusetts

Housing: Supported, on site, possibly rent free

Project Description

The fellowship at Parker River National Wildlife Refuge (NWR/refuge) offers a unique opportunity to conduct innovative research to restore imperiled salt marsh habitat for the saltmarsh sparrow as well as develop communication skills to inspire community-based conservation. The fellow will work closely with U.S. Fish and Wildlife Service staff developing regional conservation plans, while implementing field experiments at Parker River NWR that will drive future region-wide restoration strategies. The fellow will monitor two existing experiments and implement a third new experiment to increase marsh elevation and suitable nesting habitat for the highly vulnerable salt marsh sparrow. To ensure project success, the fellow will gain understanding of the latest science related to how the Plum Island system is responding to climate drivers and how anthropogenic manipulations, both past and current are influencing the ability to the marsh to adapt to current and future stressors. The fellow will develop outreach materials and engage refuge visitors and local residents to inspire actions that will benefit long-term marsh resiliency.

Materials will include a summary report of marsh change and various presentations. The fellow will work as part of a dynamic and fast-paced biological team under the supervision of the Refuge Biologist. He or she will work independently and with a variety of conservation partners. This is a great opportunity for applicants seeking a challenging environment to advance their scientific and communications skills while conducting cutting edge experimentation in a highly imperiled habitat.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in the field of conservation biology, wildlife biology, botany, restoration ecology, coastal geology, marine biology, or other closely related fields.

Working Conditions/Requirements

The fellow must have an understanding of restoration ecology and wildlife conservation and knowledge of research design and field survey techniques. The fellow should be familiar with coastal plant ID, or be able to identify plants using a taxonomic key. S/he must be able to spend long hours in the field, walking in wet, muddy, buggy, and humid conditions, and be able to jump small channels and ditches.

Desired Qualifications

The fellow should have excellent written and oral communication skills, with a strong desire to improve upon communication skills with different audiences. Strong multi-tasking, strategic thinking, problem solving, data management and analysis skills, and familiarity with GIS and RTK preferred.

Ecological and Socio-economic benefits of Aquatic connectivity efforts in the North Atlantic-Appalachian Region

Project Number: DFP20R5OSA03

Location: Hadley Regional Office, Hadley, Massachusetts

Housing: Supported, housing stipend of \$1,000 per month

Project Description

Since 2013, the U.S. Fish and Wildlife Service (Service) has used Hurricane Sandy resilience funds to remove 12 dams and improve fish passage at two other sites, re-opening more than 100 miles of river to migratory fish. This work is part of an overall regional effort to connect and open rivers and river systems. In the last decade, the Service has worked with partners to remove more than 660 barriers to fish passage in the Northeast, restoring access to nearly 6,500 miles of river and stream habitat and more than 28,000 acres of lakes, ponds, and wetlands. These efforts have added more than \$1.5 billion to the economy, through increased tourism and recreation, improved water quality, and protection of people and property. The fellow will assess the benefits of using consistent ecological and socioeconomic metrics for connectivity projects to quantify ecological outcomes and community benefits (e.g., flood reduction, infrastructure protection, and human safety). The fellow will review current practices that programs directly involved in improving fish passage and aquatic connectivity utilize to characterize project success and socio-economic benefits and contrast them with the ecological and community based performance metrics being used to assess Aquatic Connectivity projects included in the monitoring and evaluation of the Hurricane Sandy resilience program. To accomplish this, the fellow will conduct interviews with project leads and stakeholders and conduct site visits to projects. The results will be presented in various forums in the region. This effort will identify best practices for evaluating aquatic connectivity and fish passage projects, increasing public awareness, and quantifying ecological and community benefits in order to increase support for aquatic connectivity projects.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, fisheries, ecology, or natural resource management; or education including communications; or social sciences/humanities including human dimensions; or other closely related fields.

Working Conditions/Requirements

Valid state driver's license; Oral and written proficiency

Desired Qualifications

Interest in:

- Aquatic Connectivity, fish passage projects.
- Understanding the benefits to communities and infrastructure from dam removal projects.
- Using performance metrics to measure ecological and socio-economic outcomes of dam removal projects.

Regional Landscape Conservation Tools Serving the Northeast

Project Number: DFP20R5OSA01

Location: Hadley Regional Office, Hadley, Massachusetts

Housing: Supported, housing stipend \$1000 per month

Project Description

This project will enable the U.S. Fish and Wildlife Service's Science Applications Program to refocus our science delivery in support of our efforts to address at-risk species conservation. Many landscape-level

planning tools, geospatial data resources, species-habitat and range mapping tools, and predictive modeling outputs have been developed. Now we need to effectively deliver the many tools and resources that have been created. This project will assist in migrating the many resources available to a location and format that will be useful to our staff doing conservation work on the ground. The fellow will analyze the various tools and resources, and create a framework to best deliver them more effectively to our staff and partners using a centralized 'gateway' website. The fellow will (a) identify the materials to be migrated, (b) create the 'wire frame' to organize the content, (c) help draft the scope of work and deliverables for an outside contract to carry out, and (d) provide descriptive content and tagging to lead the user to identify the best tools and resources to address the needs of our conservation managers and partnerships.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences; education/outreach including environmental education, communications; geographic and information science including computer science, information technology; or closely related fields.

Working Conditions/Requirements

Experience with developing communication plans or strategies.

Desired Qualifications

Experience with graphic or web design; Digital communication experience.

Saltmarsh Sparrow habitat conservation using emerging geospatial science

Project Number: DFP20R5OSA02

Location: Hadley Regional Office, Hadley, Massachusetts

Housing: Supported, housing stipend \$1000 per month

Project Description

The North-Atlantic Appalachian Region of the U.S. Fish and Wildlife Service (Service) has prioritized the conservation of saltmarsh sparrow and the habitat it needs to survive. The saltmarsh sparrow is a tidal marsh obligate songbird that occurs exclusively in salt marshes along the Atlantic and Gulf coasts of the United States. Its breeding range extends from Maine south to Virginia including portions of 10 states. Across its range, the saltmarsh sparrow is experiencing low reproductive success, due primarily to increased nest flooding resulting from sea level rise and predation, resulting in rapid population declines. The Service is increasing our efforts to restore marshes on our wildlife refuges, collaborate with researchers, and help states and landowners to conserve the saltmarsh sparrow. Our objective is to ensure the long-term viability of the saltmarsh sparrow population in the wild throughout its current range. Nesting habitat is the most limiting component of the saltmarsh sparrow habitat needs, which is dependent on the quantity and quality of high marsh. Salt marsh vegetation composition is an important component of nesting habitat quality. Existing literature has identified distinct spectral signatures using orthoimagery for some of the key salt marsh vegetation species, which can be used to determine composition at sites. This project aims to leverage this emerging data science to analyze key salt marsh sites for breeding saltmarsh sparrows in the northeastern U.S. The fellow would be responsible for researching and designing a geospatial analysis for saltmarsh sparrow habitat at a scale appropriate for land managers to implement conservation measures on the ground. The outcomes of the project will be a workflow or protocol for other staff with geospatial expertise to implement at additional sites moving forward, a summary report of the analysis and findings relevant to future management for salt marsh (may be in a scientific journal format for future publication, if desired), and a final presentation at the conclusion of the project to the Regional Directorate Team summarizing the research and findings. These

project outcomes will directly impact conservation on the ground for saltmarsh sparrow, a declining species in need of immediate action to support its long-term viability.

Minimum Education Level and Major Requirement

Enrolled graduate student who has not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, botany, natural resource management, coastal and marine science; geographic and information sciences including GIS, cartography, hydrology, modeling/statistics; or other closely related fields.

Working Conditions/Requirements

Must have experience in geospatial design and analysis.

Desired Qualifications

Candidates with knowledge or experience in salt marsh or coastal ecosystems preferred.

Michigan (3)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Detroit River International Wildlife Refuge Bathymetric Assessment

Project Number: DFP20R3NWR03

Location: Detroit River International Wildlife Refuge, Trenton, Michigan

Housing: Supported, off site, rent free or supported, housing stipend, \$1,000 per month

Project Description

Detroit River International Wildlife Refuge (IWR/refuge) was established, in part, to protect and manage the remaining sensitive wildlife habitats in and along the Detroit River ecosystem. The refuge is mainly made up of coastal wetland habitat, both natural and diked impoundments, where plant and animal distributions are controlled by inundation or absence of water. These changes are becoming increasingly more difficult to predict as climate change leads to record breaking water levels in the Great Lakes, and coastal wetlands across the country struggle to adapt to the new normal. Invasive plant species such as phragmites and European frog-bit thrive in this disturbance and can form dense monocultures when left unchecked. An understanding of water depth and distribution within the refuge's impounded wetlands is critical for refuge management to manipulate water levels and encourage desired plants and animals where natural coastal wetlands may no longer be optimal habitat. Over the course of the 11 weeks, the fellow will collect, process, and map bathymetric data for four impounded wetlands within Detroit River IWR to facilitate successful water level management in these units. Deliverables will include a well-organized bathymetric report with digital elevation models, contour maps, and inundation maps of the four impoundments that show water depth and location at varying elevations. The report will culminate in a presentation given to all refuge staff at the end of the fellowship. These bathymetric data will be used for the water level management plan and invasive species management recommendations as Detroit River IWR staff manage for migratory waterfowl, waterbirds, and other wetland dependent wildlife. During the summer, the fellow will have the opportunity to travel to the Great Lakes Region Summer Intern Workshop to network with other fellows and interns within the region as well as full-time U.S. Fish and Wildlife Service employees.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, geographic information systems or other closely related fields.

Working Conditions/Requirements

Familiarity with ArcGIS required (at least one course and/or experience working with ArcGIS Pro preferred). A valid state driver's license and the ability to work in extreme temperatures and environments and comfort working on or in water are all necessary to carry out this project.

Desired Qualifications

The successful applicant will be comfortable working with ArcGIS software (preferably ArcGIS Pro) and have experience making digital elevation models and contour maps. Familiarity with non-motorized watercraft such as kayaks and canoes is encouraged.

Public Use Plan for the Green Point Area

Project Number: DFP20R3NWR01

Location: Shiawassee National Wildlife Refuge, Saginaw, Michigan

Housing: Supported, on site, rent free

Project Description

The fellow would prepare a landscape scale public amenities plan for the Green Point Area of the Shiawassee National Wildlife Refuge (refuge) that includes trails, parking areas, kiosks, a youth fishing pier, an outdoor classroom, river access, etc. The plan would include a detailed map of the public amenities, a cost estimate for each amenity, and development of public outreach materials once the plan is finalized. The fellow would coordinate the development of the plan with refuge staff; federal, state and Tribal Trustees; non-governmental organizations; and community leaders. Initial funding for public infrastructure is the result of a Natural Resource Damage Assessment Settlement in which the U.S. Fish and Wildlife Service is the lead Trustee. Engagement with community leaders will occur to coordinate the desired actions from our community needs assessment (public input already collected) to ensure our actions augment or link to existing or desired future community assets. Strong coordination with refuge staff is necessary to ensure proposed plan is consistent with the refuge's mission and our planned environmental restoration of the same area.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not completed their degree requirements pursuing a degree in education/outreach, natural resource management, geographic information systems or other closely related fields.

Working Conditions/Requirements

Experience working with ARC GIS

Desired Qualifications

Classwork associated with landscape architecture or parks and recreation planning/management.

Pollinator Conservation Coordination

Project Number: DFP20R3OSA02

Location: East Lansing Ecological Services Field Office, East Lansing, Michigan

Housing: Supported, housing stipend, \$1,000 per month

Project Description

The U.S. Fish & Wildlife Service (FWS) is seeking a fellow to assist with coordination and implementation of pollinator conservation. This is an opportunity to perform specialty analyses on high impact opportunities to improve FWS operations and coordinate with state fish and wildlife agencies. To support this effort, the fellow will work with the National Pollinator Coordinator and Midwest Landscape Initiative Coordinator on product development. The fellow will conduct literature reviews, develop or refine conservation measures, and help design products related to pollinators and landscape level conservation. The fellow will interact with employees across the FWS and with other pollinator experts and conservation partners. This position will engage with various levels of FWS employees (field, regional offices, and headquarters) as well as state fish and wildlife agencies, academic institutions and other partner organizations. The fellow will have the opportunity to brief senior leadership, decision makers and observe high-level discussions regarding agency strategy. The fellow will assist with the development of a national strategy for pollinator conservation. Time permitting, work on additional support products may include but are not limited to: developing a summary of existing and available pollinator data and databases, conduct an assessment of current pollinator inventory and monitoring activities within the

FWS and among partner organizations, develop briefing materials, and communication tools. Additional fellows may be recruited in other parts of the country to assist in the national pollinator effort; if these fellows are hired, opportunities will be provided for the fellows to collaborate with one another.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not completed their degree requirements pursuing a degree in conservation biology; wildlife biology; ecology; natural resource management; human dimensions; sociology; public administration; communications; law and policy; environmental studies and law or other closely related fields.

Working Conditions/Requirements

General knowledge of natural resource management. Excellent time management/project management and analytical skills; superb oral and written communication skills, including presentation skills; development and use of spreadsheets; ability to conduct a literature search; flexible work style and ability to work in a team setting; understanding of and commitment to the mission of the U.S. Fish and Wildlife Service; a valid state driver's license.

Desired Qualifications

A competitive fellow will possess proficient skills in communication, both oral and written; are self-motivated and demonstrate good problem solving skills. Experience or interest in conservation planning and policy; resource management, applied sciences, conservation biology and/or environmental law. Be able to facilitate discussions to inform and assist in the determination of strategic program priorities. While the main focus of the position will be on organizational coordination and partner outreach, knowledge of fish and wildlife science is imperative as scientific integrity is at the core of this position.

Minnesota (3)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Black Dog Unit Plan for Minnesota Valley National Wildlife Refuge

Project Number: DFP20R3NWR04

Location: Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota

Housing: Supported, on site, rent free. Refuge housing located in Carver, Minnesota

Project Description

The selected fellow will be responsible for developing a management plan for the Black Dog Unit on Minnesota Valley National Wildlife Refuge (refuge) with headquarters in Bloomington, Minnesota. Specific tasks will include delineating, ground-truthing and mapping the current mosaic of fen/wet meadow/mesic prairie habitat within the unit, using GIS. The fellow will also research the habitat requirements for previously identified refuge resources of concern and determine desired future habitat condition within the unit. The fellow will be responsible for incorporating the current and desired habitat conditions, and habitat requirements of resources of concern, into a Unit Management Plan. The plan will include management areas and strategies needed to improve habitat for the resources of concern. The fellow will also be expected to share the final plan with refuge management, and develop a presentation on the project for the Great Lakes Region Intern Workshop. This work is critical to the refuge and this Unit Management Plan will be a template other refuges and wetland management districts.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not completed their degree requirements and are pursuing a graduate degree in biological sciences including biology, wildlife biology, ecology, botany, natural resource management or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English. Valid state driver's license. Ability to work in challenging field conditions including walking through muddy wetlands and uneven terrain. Fieldwork can range from cool/rainy conditions to hot/humid conditions around ticks and mosquitoes. Coursework or experience is required in botany especially the ability to identify wetland plants in the Midwest. A basic understanding of geographic information science and hydrology concepts is necessary.

Desired Qualifications

Identification of Midwest wetland and prairie plants and trees. Basic wetland/grassland bird knowledge. Proficient use of ArcGIS Desktop version 10.5 or later, ArcGIS Online, Collector. Experience working with soil maps and wetland mapping.

The Development of a Complex-wide Baseline Inventory

Project Number: DFP20R3NWR02

Location: Detroit Lakes Wetland Management District and Glacial Ridge National Wildlife Refuge Complex, Erskine, Minnesota

Housing: Supported, on site, rent free

Project Description

The Detroit Lakes Wetland Management District (WMD) and Glacial Ridge National Wildlife Refuge Complex (NWR/complex) is looking to hire a biological fellow for an 11-week appointment from

approximately late May through late August of 2020. Project work will focus on Glacial Ridge NWR and waterfowl protection areas in Polk County, on the eastern edge of the prairie pothole region in northwestern Minnesota. The incumbent will work with a team of biologists to develop and test a baseline inventory framework, including GIS solution, for NWRs and WMDs in the prairie landscape of Minnesota. Other biological fellow duties may include assisting with other biological monitoring or research on lands managed within the complex, and assisting with public use and environmental education events. Housing will be provided in the U.S. Fish and Wildlife Service's bunkhouse located on Rydell National Wildlife Refuge.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in geographic information systems, natural resource management, conservation biology, wildlife biology, ecology, or other related fields.

Working Conditions/Requirements

The work will consist of a combination of office work on the computer with fieldwork in areas with uneven terrain, difficult access and in potentially inclement weather.

Desired Qualifications

The fellow should be able to work both independently (with little supervision), as well as part of a team. They should be able to provide basic leadership to seasonal interns and volunteers that they will provide in-field supervision to. Previous college coursework should have provided them with at least some background in GIS and familiar with in commonly used office programs (e.g., Microsoft Office, Microsoft Excel). Knowledge of prairie ecosystems is desired but not mandatory.

Pollinator Conservation: Operations Assessment and Strategy Development

Project Number: DFP20R3OSA01

Location: Midwest Regional Office, Bloomington, Minnesota

Housing: Supported, housing stipend, \$1,300 per month

Project Description

The U.S. Fish & Wildlife Service (FWS) is seeking a fellow to assist with coordination and implementation of pollinator conservation. This is an opportunity to perform specialty analyses on high impact opportunities to improve FWS operations. To support this effort, the fellow will work with the National Pollinator Coordinator on product development for FWS pollinator conservation activities. The fellow will conduct literature reviews, develop or refine conservation measures, and help design summary products related to pollinators. The fellow will interact with employees across the FWS and with other pollinator experts and conservation partners. This position will engage with various levels of FWS employees (field, regional offices, and D.C.) as well as state fish and wildlife agencies, academic institutions and other partner organizations. The fellow will have the opportunity to brief senior leadership, decision makers and observe high-level discussions regarding agency strategy. The fellow will assist with the development of a national strategy for pollinator conservation. Time permitting, work on additional support products may include but are not limited to: developing a summary of existing and available pollinator data and databases, conduct an assessment of current pollinator inventory and monitoring activities within the FWS and among partner organizations, develop briefing materials, and communication tools. Additional fellows may be recruited in other parts of the country to assist in the national pollinator effort; if these fellows are hired, opportunities will be provided for the fellows to collaborate with one another.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not completed their degree requirements and are pursuing a degree in conservation biology; wildlife biology; ecology; natural resource management; human dimensions; sociology; public administration; communications; law and policy; environmental studies and law or other closely related fields.

Working Conditions/Requirements

General knowledge of natural resource management. Excellent time management/project management and analytical skills; superb oral and written communication skills, including presentation skills; development and use of spreadsheets; ability to conduct a literature search; flexible work style and ability to work in a team setting; understanding of and commitment to the mission of the U.S. Fish and Wildlife Service; a valid state driver's license.

Desired Qualifications

A competitive fellow will possess proficient skills in communication, both oral and written; demonstrate good problem solving skills; have experience or interest in conservation planning and policy; a basic understanding of natural resource management and applied sciences. Strong candidates will be self-motivated, have a basic understanding of or experience in conservation planning, conservation biology, natural resource management, and/or environmental policy analysis; have an interest or experience in law and policy, and possess strong written and oral communication skills. Be able to facilitate discussions to inform and assist in the determination of strategic program priorities. While the main focus of the position will be on organizational coordination and partner outreach, knowledge of fish and wildlife science is imperative as scientific integrity is at the core of this position.

Mississippi (1)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Organizing Refuge GIS

Project Number: DFP20R4NWR06

Location: Mississippi Sandhill Crane National Wildlife Refuge, Gautier, Mississippi

Housing: Supported, on site, rent free

Project Description

This project will occur at two refuges (Mississippi Sandhill Crane National Wildlife Refuge, Grand Bay National Wildlife Refuge) in the Gulf Coast Refuge Complex. They are home to the largest remaining patches of coastal wet pine savanna, one of the rarest and most species-rich ecosystems in the Southeastern US, and two of the most endangered vertebrate populations, the Mississippi Sandhill Crane and the Dusky Gopher Frog. The Refuge complex has numerous spatial datasets, including Cadastral (refuge boundaries), key wildlife species like the Mississippi Sandhill Crane and Dusky Gopher Frog, prescribed burning information, habitat management, invasive plants, vegetation, etc. The primary goal of this project is to organize all Refuge datasets into well-organized, intuitive ESRI geodatabases that can be fully utilized by all resource and management staff. The GIS will inform future restoration and endangered species recovery efforts. The fellow will also develop and update data relating to refuge habitat types and compartment boundaries and produce accurate maps for Refuge staff use. The fellow will need to coordinate with Refuge biological, fire, and other staff, and with partner agencies such Grand Bay National Estuarine Research Reserve to ensure the data is correct and representative.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, botany, natural resource management; or geographic information systems including cartography, information technology, geography or other closely related fields.

Working Conditions/Requirements

No mandatory technical certifications. Satisfactory completion of a college introductory GIS course such as Application of Spatial Technologies to Wildlife Management or Introduction to Geographic Information Systems, Introduction to GIS Laboratory. Experience in basic ArcMap skills cartography, and mainly office work at the computer but some fieldwork to ground truth data.

Desired Qualifications

General knowledge of ecology, wildlife biology, ecological restoration; proficient in MS Office software; ability to work with different programs and agencies. Extra consideration for Geographic Information Technology Certificate, geodatabase development, organization, and management; knowledge of data management standards. Completion of courses such as advanced cartography, remote sensing and image interpretation, spatial analysis and modelling.

Missouri (1)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Prairie Monitoring on Northern Missouri National Wildlife Refuges

Project Number: DFP20R3NWR05

Location: Swan Lake National Wildlife Refuge, Sumner, Missouri and Loess Bluffs National Wildlife Refuge, Forest City, Missouri

Housing: Supported, on site, rent free

Project Description

This project will serve as both a preliminary investigation on Swan Lake National Wildlife Refuge (NWR) and a continuation of monitoring program for the bottomland prairie community on Loess Bluffs National Wildlife Refuge (NWR). The project will evaluate the use of prescribed burning and herbicide treatment on reed canarygrass (*Phalaris arundinacea*) (RCG), along with its effects on the state endangered prairie massasauga rattlesnake (*Sistrurus tergeminus tergeminus*), and native plants. The project will document community composition and structure of the bottomland prairie using established protocols developed by the grassland monitoring team, which has been modified for the bottomland prairie. The project will contribute to our understanding of community ecology of the bottomland prairie and provide a valuable assessment to implement recently developed management objectives. Swan Lake and Loess Bluffs NWRs' habitat management plans (HMPs) target specific bottomland prairie objectives and identify the need for monitoring to assess the condition of high priority management units. These HMPs identified the need to enhance the native grass and forb composition of the bottomland prairie but questions remain as to what the response of utilizing those management tools would be. Monitoring is needed to inform management to sustain habitat health, biological integrity and success of management tools, particularly prescribed burning, herbicide and possibly grazing. Products produced by the fellow include but are not limited to the following: analysis, summary report and potential peer reviewed publication of data collected in 2016-2018 and 2020 on Loess Bluff NWR and 2020 for Swan Lake NWR (heat map of RCG based on percent infestation, native vs. nonnative composition, massasauga population demographics and effects of treatments on the reduction of RCG). On Loess Bluff NWR results from the 2016/2017 seasons showed reduction of RCG of over 30% (2016 \bar{x} = 68% and 2017 \bar{x} = 30%) in the aerially treated area.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, botany, natural resource management, geographic and information sciences including GIS, modeling/statistics or other closely related fields.

Working Conditions/Requirements

Field work is typically in hot/humid conditions around ticks and mosquitoes. Coursework or experience is required in: botany specifically plant taxonomy and use of dichotomous keys to identify plants. Natural resource and wildlife management courses including but not limited to the following wildlife techniques, conservation biology, population biology and ecology. Modeling, statistics and/or Geographic Information Systems.

Desired Qualifications

Identification of Midwest plants (specifically prairie plants), and statistical methods using R and/or R Studio (R Mark/ R Markdown). Proficient use of ArcGIS Pro version 2.3.3 or later, ArcGIS Online, and Collector/ Survey123 Apps.

Montana (4)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Acoustic monitoring of grassland songbirds on restoration and enhancement sites

Project Number: DFP20R6MIG02

Location: Northern Great Plains Wetland Management District Complex – Bowdoin National Wildlife Refuge/ Wetland Management District, Malta, Montana

Housing: Supported, on site, rent free

Project Description

Conservation of grasslands and at-risk species, specifically grassland songbirds, i.e. Sprague’s Pipit, Chestnut-collared and McCown’s Longspur, and Baird’s Sparrow, in the Prairie Pothole Region is a regional priority. FWS and partners are engaged in significant efforts to conserve, restore, and enhance grasslands in northeast and north-central Montana, which is the last core breeding area for these four regional priority songbirds in the United States. The project will assess the effectiveness of remote acoustic recording devices to record an index of abundance of birds in direct comparison to live surveys conducted by biologists. The project will entail constructing and deploying recording devices, conducting field surveys of grassland birds, and analysis of the results. This project will ideally confirm the value of recording devices in bird monitoring, resulting in increased capacity for monitoring at-risk grassland songbirds across the landscape. Increased monitoring capacity would allow the FWS and partners to greatly expand quantitative monitoring of the response of the four regional priority grassland songbirds across a wide variety of restored and enhanced grasslands and those being managed under different grazing systems.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in biological sciences, including conservation biology, wildlife biology, ecology, natural resource management, or other closely related fields.

Desired Qualifications

Fellow should have the ability to work independently in remote areas, 4x4 experience, operating and navigating by GPS and some basic level of field experience. Desired would be familiarity with bird identification and conducting point counts.

Information and data summary for Sicklefin and Sturgeon Chub Species

Status Assessments

Project Number: DFP20R6ECO03

Location: South Dakota Ecological Services Office, Pierre, South Dakota or Bozeman Science Applications Office, Bozeman, Montana

Housing: Not supported

Project Description

The U.S. Fish and Wildlife Service (FWS) is seeking a graduate level student to work in summer months on information and data gathering, summary and assessment to support Species Status Assessments (SSAs) for 2 cyprinid chub species native to the Missouri and Mississippi Rivers: Sicklefin Chub and Sturgeon Chub. The FWS was petitioned to list these species under the Endangered Species Act in the 90s and after a 12-month Finding in 2001, the species were determined to be Not Warranted for Listing.

In 2017, a positive 90-Day Finding on a recent petition resulted in an agreement to complete Species Status Assessments for these 2 fish by September 2023. The right person would have some experience in fish management, species assessments or other relevant ecological or conservation related work. The right person will work independently with fish and wildlife professionals to: 1) frame species' information requirements and threats related to the petition and for SSA needs; 2) identify and collect or summarize information and data available; 3) create a data-base of existing information; 4) in collaboration with State partners, identify data gaps and research needs that would support status assessments and decisions; 5) draw conclusions based on information, status assessment, data gaps, trends and ecological conditions. This is an excellent opportunity for an ambitious young conservation professional to get experience at the ground level in working with FWS and State partners related to Endangered Species Act listing and assessment for 2 fish species that are threatened with declines and yet broadly distributed throughout the Midwest.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in biological sciences, including conservation biology, ecology, wildlife biology, fisheries, natural resource management or other closely related fields.

Working Conditions/Requirements

Must be fluent and proficient in writing and speaking in the English language. Must be able to work at a computer, writing and comfortable speaking to a group. Must have basic ability to process data.

Desired Qualifications

Excellent writing and speaking skills. Qualified in statistical analysis relating to conservation, fisheries management or Endangered Species Act/at-risk species. Skills in conducting assessments of species or ecological/conservation conditions related to at-risk species.

Rainbow Trout Broodstock Fin Erosion at Ennis National Fish Hatchery

Project Number: DFP20R6FAC01

Location: Ennis National Fish Hatchery, Ennis, Montana

Housing: Supported, on site

Project Description

The fellow will be stationed at the Ennis National Fish Hatchery. The Ennis National Fish Hatchery is a key broodstock facility providing coldwater salmonid eyed eggs to State, Federal, tribal and research partners across the country. Several broodlines are housed here and future plans will look at additional broodline development. Currently, retired broodstock are un-useable for many outreach/stocking opportunities. Handling, environmental factors and spawning stress erode tail, dorsal, and pectoral fins resulting in fish that are visually unappealing and would likely not survive the rigors of the wild for long periods. The selected fellow will research improving the fin quality and overall fish quality of retired broodstock fish with the goal of providing these large (4 to 6 pound) Rainbow trout for recreational fishing opportunities. This directly meets Department of Interior and U.S. Fish and Wildlife Service priorities, utilizes existing resources, and will promote additional angling interest. The fellow will present results at the Bozeman Fish Technology Center, Montana Fish Wildlife and Parks, and local partners and angling groups will be invited to attend. Results of this study will be used to continually modify existing infrastructure to provide optimal rearing conditions and reduce perceived fin wear.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences relating to conservation biology, fisheries or other closely related fields.

Working Conditions/Requirements

Enthusiasm to learn and ability to work in cold, wet environments

Desired Qualifications

Strong candidates will have a background in fishery biology with an emphasis in aquaculture. An understanding of scientific writing methods and study design is desirable.

Combatting invasive grasses through historic stock densities

Project Number: DFP20R6NWR04

Location: Northern Great Plains Wetland Management District Complex, Malta, Montana

Housing: Supported, on site, rent free

Project Description

This project will investigate the relationship between livestock density and invasive grasses in a critically important landscape in north-central Montana. Historically, the northern Great Plains were grazed by large herds of nomadic ungulates (bison, elk and others) which moved in adaptive response to vegetation “green up” in our highly dynamic prairie climate. The impact of these dense congregations of animals on the native vegetation would have been severe, but only for a very short time as herds quickly moved on to new forage. Modern grazing management has taken a very different form, with diffuse herds of domestic livestock managed at conservative densities across the landscape. Concurrently, we have seen a dramatic increase in invasive, Eurasian grasses across the region. These species originate from a more stable climate where a diffuse style of grazing has been in place for thousands of years. Our team will work with the fellow and the surrounding livestock managers to assess the potential of applying historic, high stock densities as a tool to combat invasive Eurasian grasses in the Northern Great Plains Wetland Management District (WMD) Complex. The project will sample vegetation across a range of stock density management histories from low density to high. Sampling will include abundance and vigor of invasive grasses, abundance, vigor and diversity of native grasses, and any other relevant vegetation metrics. Fellow will be stationed at the Bowdoin NWR/WMD headquarters within the Northern Great Plains WMD Complex. Housing will be provided in the Bowdoin NWR/WMD bunkhouse. Office space and a vehicle will also be provided. Bowdoin NWR/WMD is located in northeastern Montana. Approximately 7 miles from Malta, Montana, population approximately 2,000. The area is a mix of Short-grass Prairie and Sage brush. Ranching and farming are the dominant lifestyles. There are numerous partners working on conservation efforts in this area.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements, pursuing a degree in conservation biology, wildlife biology, ecology, botany, natural resource management, range management or other closely related fields.

Working Conditions/Requirements

Primary work will be outside in remote locations in varying weather conditions from cold to hot, windy, and in precipitation. Contact with biting and/or stinging insects, wildlife, and livestock. Experience driving off-road/4WD vehicles and navigating by GPS required. Candidate should have some background in range ecology and management and basic familiarity with vegetation sampling methods.

Desired Qualifications

The ideal candidate would have experience with vegetation identification in the northern Great Plains, particularly in identification of grasses. Other desirable qualifications include experience with Geographic Information Systems (GIS), ecological study design and statistical analysis, familiarity with livestock ranching operations, knowledge or experience about grazing management, working with private landowners in rural areas, and a passion for community-based conservation.

Nebraska (1)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Patch Burn Grazing Impacts on Vegetation and Birds

Project Number: DFP20R6NWR05

Location: Valentine National Wildlife Refuge, Valentine, Nebraska

Housing: Supported, on site, rent free

Project Description

The Valentine National Wildlife Refuge is seeking an enthusiastic and qualified individual to work with refuge staff to conduct bird and vegetation surveys and statistical data analysis on an exciting habitat management system. The Sandhills of Nebraska are the largest intact grassland in the western hemisphere, and the grasslands are still largely dominated by native grasses and forbs. One of the main challenges facing the native diversity of the Sandhills is the homogeneous vegetative structure and composition created by most Sandhills ranching operations, and how that may affect the avian community. In 2016, the Valentine National Wildlife Refuge (Refuge) began a patch-burn grazing program on a section of the Refuge with the intent of creating habitat heterogeneity to benefit the flora and fauna of the Sandhills region. Patch-burn grazing is a management idea modeled on historic fire and bison grazing interactions with which the prairies evolved. Within the patch-burn graze unit, an area is burned either in the fall or spring. This creates a mosaic of vegetation structure and composition, from heavily utilized grassland in the burned part of the unit to very lightly used areas far from the burn. The intensive grazing on the burned areas temporarily weakens the dominant grasses, creating patches of bare ground and allowing annual plants the opportunity to grow and produce seeds. As the cattle move on the following growing season, the dominant grasses begin to recover, and with several years of light grazing will recover to dominate the vegetative cover.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in ecology, botany, range management, ornithology, GIS, modeling/statistics or other closely related fields.

Working Conditions/Requirements

Skills required would include Bird identification by sight and song, basic plant identification skills, ability to conduct statistical analysis/data modelling, basic ability to use ArcGIS/ArcPro programs, drivers license, ability to work doing strenuous activity for significant periods of time, often walking over rough terrain and in muddy conditions; on rough or uneven surfaces; wading through marshes, biting insects, and in many instances during difficult weather conditions.

Desired Qualifications

Ability to use Program Distance to summarize bird data. Great organizational and time-management skills

Nevada (2)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Environmental Education Curriculum Development

Project Number: DFP20R8NWR01

Location: Desert National Wildlife Refuge Complex, Las Vegas, Nevada

Housing: Supported, on site, rent free

Project Description

The Desert National Wildlife Refuge Complex, located in Southern Nevada, is seeking a motivated, independent, graduate fellow to develop environmental educational programs highlighting the unique ecological and biological diversity of the Mojave Desert. Incumbent will create curricula for elementary-aged students that adheres to both state and Next-Gen Science Standards, as well as agency mission and goals. Curricula must be inter-disciplinary, interactive, and relevant. All developed materials must be exportable, meaning they can be performed by any educator, in or outside the classroom. Desired candidate has a strong background in curriculum development, particularly with regard to outdoor environmental education. All curricula developed would be the groundwork off which all future programs would be developed. Incumbent will work independently, often in remote desert locations. Position involves traveling between an inter-agency office in Las Vegas, the Desert National Wildlife Refuge, and the Ash Meadows National Wildlife Refuge. Dorm-style housing may be available. At end of 11-week period, the incumbent will present their programs to refuge staff for evaluation. The U.S. Fish and Wildlife Service (FWS) is a dynamic, engaging agency that leads the world in wildlife conservation, habitat restoration, and environmental stewardship. By working for the FWS, you would be part of a legacy set forth by Aldo Leopold, Margaret Murie, and Rachel Carson.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in environmental education or other closely related fields.

Working Conditions/Requirements

Valid state driver's license; Bachelor's degree in a topic related to the position, such as natural resources, biology, or environmental education; Have an accredited teaching certification or be enrolled in an accredited teaching certification program. Project work is mostly indoors but may require some outdoor work in extreme weather conditions, including high temperatures and wind; some travel may be required.

Desired Qualifications

Environmental Education degree ; 2 years' experience working in EE capacity; Demonstration in developing programs for K-5; Familiarity with the desert ecosystem; Ability to work effectively with a variety of stakeholders while maintaining and strengthening positive working relationships with our partners; Multi-lingual (Spanish/English preferred)

Endangered Species Habitat Restoration Specialist

Project Number: DFP20R8NWR02

Location: Moapa Valley National Wildlife Refuge, Moapa, Nevada

Housing: Supported, on site, rent free

Project Description

Established in 1979, Moapa Valley National Wildlife Refuge serves to protect three thermal spring systems that provide habitat for the Moapa dace. The Moapa dace is an endemic, critically-endangered minnow that inhabits the headwaters of the Muddy River System in southern Nevada. Since its establishment, extensive habitat restoration efforts have been conducted on the Refuge and adjacent lands and those projects are ongoing. Currently, recovery efforts are aimed at continued habitat restoration through invasive species (aquatic and terrestrial) control and maintaining stream flows. Western mosquitofish (*Gambusia affinis*) and shortfin mollies (*Poecilia mexicana*) are two non-native fishes that present an ongoing threat to the recovery of the Moapa dace through competition and predation. Additionally, non-native California fan palm (*Washingtonia filifera*) and eel grass (*Vallisneria* spp.) have become common in the system and negatively alter spring flows, further inhibiting recovery efforts. This habitat restoration project will provide an opportunity to reduce the negative impacts that invasive species are having on the Moapa dace population by removing predators and restoring stream flows to a level more conducive to dace recovery.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, fisheries, ecology, or natural resource management; or other closely related fields.

Working Conditions/Requirements

A valid driver's license is required. Work will be conducted in a harsh desert environment with high temperatures. The position will require working flexible hours depending on weather conditions. Applicant should be fluent in English to ensure effective communication with supervisor and partners.

Desired Qualifications

Understanding of fish conservation issues; Familiarity with aquatic and terrestrial invasive species issues; and Ability to work effectively with a variety of stakeholders while maintaining and strengthening positive working relationships with our partners.

New Jersey (2)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Biology and marsh restoration projects at Cape May National Wildlife Refuge

Project Number: DFP20R5NWR05

Location: Cape May National Wildlife Refuge, Cape May Court House, New Jersey

Housing: Supported, on site, rent free

Project Description

The fellow will be stationed at Cape May National Wildlife Refuge in Cape May Court House, New Jersey, a 12,000 acre refuge in the Cape May Peninsula, renowned for bird, insect and bat migrations. The fellow would work with the intern program, salt marsh monitoring and restoration grants, and coordination of these programs. The fellow would provide fieldwork for biological surveys including nekton, SETs, water quality, water level loggers, beach nesting birds, endangered plants, invasive plants, etc. These projects all involve critical work to improve habitat on refuge lands. There will be a lot of networking opportunities to work with non-profit groups, other agencies, other refuges, interns, etc.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biology, wildlife management, or other closely related fields.

Working Conditions/Requirements

Valid state driver's license, IT training, boat training, and ATV training

Desired Qualifications

Arduous duty. Outside work in extreme conditions including heat, bugs, non-consolidated marsh, etc., able to carry 50lbs while working in heat and unstable settings

Urban Refuge Youth Photography Workshop

Project Number: DFP20R5NWR06

Location: Edwin B Forsythe National Wildlife Refuge, Oceanville, New Jersey

Housing: Supported, on site

Project Description

Edwin B Forsythe National Wildlife Refuge (NWR), located 10 miles outside of Atlantic City, seeks a dynamic, creative, and hardworking candidate who has the passion for getting different audiences enthusiastic about spending time in the outdoors through conducting a series of smart phone photography workshops. With our current visitation to Forsythe NWR skewing 55 years old or older, you will learn strategies on how to effectively connect the resources to different groups. The fellow will work primarily with youth groups in an urban setting. The fellow will gain event planning and organizational skills by planning a field trip to the refuge as well as an art show. The fellow must have strong communication skills, knowledge of different social media platforms, and the ability to use smart phones to take beautiful and through-provoking images as well as videos, which will ultimately be presented to refuge management, community stakeholders and regional staff.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in community outreach, environmental education, communications, visitor services/interpretation, human dimensions, social/environmental justice or other closely related fields.

Working Conditions/Requirements

60% of the work will be indoors and 40% outdoors during the summer months on the New Jersey shore. The conditions can be hot, humid and buggy at times.

Desired Qualifications

Must have the ability to use smart phone technology to produce good quality images and videos. Must possess the skills to teach others how to use that technology.

New Mexico (5)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Bighorn habitat analysis and riparian restoration monitoring

Project Number: DFP20R2NWR05

Location: San Andres National Wildlife Refuge, Las Cruces, New Mexico

Housing: Supported, on site, rent free

Project Description

This project is located at San Andres National Wildlife Refuge (refuge), headquartered in Las Cruces, New Mexico. The refuge was established to protect habitat for desert bighorn sheep. The objectives of this project are to 1) summarize and analyze satellite GPS data from collared bighorn and create home range, seasonal use, and habitat use maps, 2) transition legacy GIS data from ArcMap into ArcGIS Online, and 3) assist with riparian restoration monitoring. This project is critical to meeting inventory and monitoring needs for the refuge. The fellow selected will have opportunities to present information to numerous partners and to network with partners from various local, state, and federal agencies.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not yet completed their degree requirements and are pursuing a degree in biological sciences, geographic information systems or other closely related fields.

Working Conditions/Requirements

Adequate physical fitness to work in hot, rugged, sometimes humid and buggy conditions

Desired Qualifications

Experience in ArcGIS Pro and ArcGis Online, Ability to drive manual transmission 4x4 vehicles

Building public awareness and support for Middle Rio Grande Valley National Wildlife Refuges

Project Number: DFP20R2NWR08

Location: Sevilleta National Wildlife Refuge, San Acacia, New Mexico

Housing: Supported, on site, rent free

Project Description

There are three national wildlife refuges (NWR/refuge) in the Middle Rio Grande Valley of New Mexico. Valle de Oro NWR is an urban refuge located in Albuquerque, the largest city in the state. Bosque del Apache NWR, located 90 miles south of Albuquerque, is one of the most well-known waterfowl refuges in the system and draws visitors from around the globe. Sevilleta NWR, located halfway between Valle de Oro and Bosque del Apache, is one of the largest refuges in the lower 48 states, is primarily a research refuge, and is arguably one of the least known refuges in the system. This project seeks to determine public perception of the three refuges and to make recommendations for increasing awareness and support of these three very different refuges. All three refuges draw local support from basically the same geographic area, but perhaps from varying demographic groups. The project seeks to determine what local public perception is of the three refuges and will make recommendations for how to incorporate the findings into outreach and engagement efforts.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in education/outreach, social sciences/humanities or other closely related field with an interest in wildlife conservation.

Working Conditions/Requirements

Valid driver's license. Most of the work will be in an office or meeting setting. There will be some outdoor work as the fellow will need to familiarize themselves with the three refuges and the resources they manage.

Desired Qualifications

Background in visitor services or human dimensions

Valle de Oro NWR Community Engagement Research, Year 2

Project Number: DFP20R2NWR09

Location: Valle de Oro National Wildlife Refuge, Albuquerque, New Mexico

Housing: Supported, off site, housing stipend \$500 per month

Project Description

Valle de Oro National Wildlife Refuge (NWR/refuge) is the southwest's first Urban National Wildlife Refuge located in Albuquerque, New Mexico. The refuge is 570 acres adjacent to the Rio Grande Bosque and is currently farm fields in transition to native habitat and visitor use facilities over the next 5 years. In an effort to further the refuge's work in knowing and relating to the host community, the fellow will be assigned to work on the Valle de Oro NWR community engagement research and complete the following tasks: Compile and synthesize information on the Hispanic/Latino and Tribal/Indigenous communities surrounding Valle de Oro NWR. This will include taking work completed by the 2017 fellow and building on the work done in identifying of the existing Hispanic/Latino and Tribal/Indigenous community groups and their respective missions, key community events (e.g. Muertos y Marigolds Parade), and the most effective niches for the Valle de Oro NWR to fill within the target community. Review and summarize existing literature, general information, and recent agency work (Urban Wildlife Conservation Program national team, *Standards of Excellence for Urban National Wildlife Refuges*, National Park Service Urban Agenda, etc.) in order to identify current strengths and gaps. Create a survey tool, protocol and start approval process that will allow the refuge to evaluate community understanding and connection to Valle de Oro NWR.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not completed their degree requirements and are pursuing a graduate degree in in social science/humanities or other closely related fields.

Working Conditions/Requirements

- Fellow should have basic written and oral proficiency in Spanish and English.
- Fellow should have a basic understanding of wildlife conservation and environmental biology.
- Experience in Human Dimensions research and survey design required
- Fellow should have a strong understanding of New Mexico culture.
- Fellow should have a driver's license, clean driving record and be able to complete an online defensive driving course.

Desired Qualifications

- Advanced written and oral proficiency in Spanish and English preferred
- Understanding of community engagement techniques preferred

- Experience working with Hispanic/Latino and/or Tribal/Indigenous communities preferred
 - Experience working in New Mexico preferred
-

Tracking Actions for the Conservation of Species (TRACS) System Data Management for the Southwest Region

Project Number: DFP20R2WSF01

Location: Albuquerque Regional Office, Albuquerque, New Mexico

Housing: Not Supported

Project Description

The U.S. Fish and Wildlife Service's Wildlife and Sport Fish Restoration Program (WSFR) is the largest grants program in the Department of the Interior, managing over a billion dollars in grants to states annually for species and habitat conservation, recreation, and outdoor education. The standards for program accountability are high, both in terms of the legal requirements set in statute and regulation for grant recipients and WSFR, as well as the expectations of Congress, the tax-paying outdoor industry, and the public. The fellow will assist WSFR in the southwest region with the implementation of a new standardized reporting structure and metrics, so WSFR can easily communicate program accomplishments by rolling-up data to report on the partnerships performance at local, state, regional, and national scales.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences geographic information systems or other closely related fields.

Desired Qualifications

Proficient in MS Office Excel, database management, GIS, and web based applications.

Advanced Rearing Techniques for Gila Trout

Project Number: DFP20R2FAC03

Location: Mora National Fish Hatchery, Mora, New Mexico

Housing: Supported, on site, rent free

Project Description

The fellow will work on Gila trout (*Oncorhynchus gilae*) recovery efforts at the Mora National Fish Hatchery in New Mexico. The Hatchery serves as the sole captive refugia and propagation for recovery of Gila trout in the Southwest. Gila trout are endemic to mountain streams in the Gila, San Francisco, Agua Fria, and Verde River drainages in New Mexico and Arizona. Gila trout were originally recognized as endangered under the Federal Endangered Species Preservation Act of 1966. Federal-designated status of the fish as endangered was continued under the Endangered Species Act of 1973. The Gila trout was down-listed to Threatened in 2006. The Mora National Fish Hatchery staff has hypothesized that Gila trout are not accustomed to captivity. For several years, Mora Hatchery has supplied eggs to other fish hatcheries and found less than desirable growth rates on the Gila Trout in captivity. Slow growth rates are hampering attempts to replace non-native rainbow trout hatchery production with native Gila Trout. Rearing techniques, such as modification of tank shading, less crowding in the tanks and less frequent tank cleaning may be beneficial to gaining monthly growth on the fish. The fellow will examine shading, density and cleaning techniques on survival and growth of Gila trout. The fellow will be responsible for daily care and the collection of required biometric data of the study's Gila trout, as well as assisting the hatchery staff with caring for the production Gila Trout when needed. The fellow will be responsible for completion of the Advanced Rearing Techniques of Gila Trout study, writing a final report and poster of

all study results and making a final oral presentation to the staff at Mora National Fish Hatchery staff, as well as to the Gila Recovery Team.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, fisheries, natural resources management or other closely related fields.

Working Conditions/Requirements

Enthusiasm to learn!

Desired Qualifications

Strong candidates will have a background in fishery biology with an emphasis in aquaculture, plus an understanding of scientific writing methods and study design is desirable.

North Carolina (1)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Natural Resource Goals and Objectives for the Coastal and Piedmont Ecosystems (CAPES) Refuges

Project Number: DFP20R4OSA01

Location: Raleigh Ecological Services Field Office, Raleigh, North Carolina

Housing: Not supported

Project Description

Specific, measureable, achievable, results-oriented, and time-fixed (SMART) management objectives are recognized as the necessary precursor to adaptive management and implementation of inventory and monitoring. Currently, many refuges in the National Wildlife Refuge System do not have these objectives defined and documented. The inventory and monitoring program has been directed to develop these objectives. The Coastal and Piedmont Ecosystems (CAPES) team has done a substantial amount of work that can be utilized to develop a strategic plan for the region as well as develop SMART objectives for the refuges in CAPES. During the period May – Aug 2020, the southeast region inventory and monitoring program must develop landscape level conservation goals and SMART objectives for CAPES, along with a step-down strategy to implement this plan, and objective development procedures with a subset of CAPES refuges. The fellow will be responsible for developing a draft Landscape Level Strategic Conservation Plan for the CAPES Region, including fully developed management goals and SMART objectives for priority habitats. The fellow will provide a detailed report on the development process of the Strategic Conservation Plan and how it relates to the Southeast Blueprint. The fellow will draft a process document on the step-down of the regional plan to individual refuges. The process document will be informed by leading at least four of the CAPES refuges through the process. This project will help the CAPES region complete their strategic plan and help CAPES refuges achieve the chief's charge. Through these efforts, U.S. Fish and Wildlife Service can make more informed, science-based decisions for conservation and management of refuge lands.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not yet completed their degree requirements and are pursuing a degree in conservation biology, wildlife biology, ecology, GIS, communications or other closely related fields.

Working Conditions/Requirements

- Must possess a valid state driver's license.
- Ability to work and communicate with diverse audiences.
- Experience in developing written documents and formal reports, including figures and tables.
- Must be able to document observations using both handwritten notes and computers. The fellow should possess skills to use Microsoft Office programs including Excel, Word and Access.
- Interpersonal and communication skills (both oral and written).
- Knowledge/experience of GIS programs, online mapping and website building.

Desired Qualifications

- The fellow should have the knowledge and ability to communicate in a professional manner orally and in writing with both public and professional settings. Fellow should be skilled in management of time and have a demonstrated ability to meet deadlines.

- To complete this project, the fellow must have experience in developing written documents, within tight deadlines, which inform the reader and expresses original thought. The fellow must be able to document observations using both handwritten notes and computers. The fellow should possess skills to use Microsoft Office programs including Excel, Word and Access.
- The fellow should have knowledge and skills in developing formal reports including development of figures and tables. Fellow should be able to professionally present information within the report to fellow professionals and public.
- Working knowledge of policies and procedures related to setting goals and objectives in natural resource management.

Oklahoma (1)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Farming and Wetland Management Effects on Invertebrates and Migratory Birds

Project Number: DFP20R2NWR07

Location: Sequoyah National Wildlife Refuge, Vian, Oklahoma

Housing: Supported, on site, rent free

Project Description

The fellow will be stationed at the 20,800-acre Sequoyah National Wildlife Refuge (refuge) established in 1970 at the confluence of the Arkansas and Canadian Rivers. The Arkansas River floodplain has bottomland hardwood forests and wetlands that provide unique habitat for migratory and resident wildlife, including tens of thousands of migratory waterbirds. This study will build on past invertebrate survey work conducted at the refuge that described the invertebrate communities in floodplain forest and seasonal herbaceous wetlands. Invertebrates are the primary link between primary production and higher trophic levels in wetlands. In fact, they are a critical component of migratory waterfowl and shorebird diets. Moreover, wetland invertebrates play a significant role in influencing nutrient cycling and other ecological functions of wetlands. The proposed study will further examine the potential impacts of current farming practices at the refuge on wetland invertebrate communities as well as the associated influence on migratory bird use of these wetlands during the spring. The fellow will collect invertebrates on a weekly basis from wetlands that range along a gradient of wetlands heavily impacted by farming practices to those minimally impacted. The fellow will use results from this study to provide the refuge with a better understanding of how farming practices may be affecting invertebrate food resources and potentially influencing waterbird use of the refuge. Guidance on how to better manage refuge wetlands for invertebrates and waterbirds during migration will be one of the important outcomes from this research. The fellow will work in collaboration with a field research team sponsored by Oklahoma State University, comprised of students, technicians, and university professors. At the conclusion of the study, the fellow will develop and present an oral and written report for refuge, university, and other partners.

Minimum Education Level and Major Requirement

Graduate students who have enrolled in or have begun their first year pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, or natural resource management; or other closely related fields.

Working Conditions/Requirements

The fellow will be required to take an online defensive driving course to operative government vehicles. The fellow will be required to take an online FISSA training. The fellow will be working in boats, in and around water, in extreme heat and humidity, and will be exposed to ticks, biting insects, and venomous snakes. The fellow must be proficient in written and oral English.

Desired Qualifications

The fellow should be knowledgeable of aquatic invertebrates, their life history and identification, and survey techniques. The fellow should be proficient with Microsoft Office, able to proof and enter data, conduct basic statistical analyses, and prepare a written report and provide an oral presentation of study findings, conclusions, and recommendations.

Oregon (3)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Baker Sage-grouse: West Nile Virus Surveillance and Mapping

Project Number: DFP20R1ECO01

Location: La Grande Field Office, La Grande, Oregon

Housing: Supported, off site, rent free at Oregon Department of Fish and Wildlife Elkhorn Wildlife Area in North Powder, Oregon

Project Description

In response to a sharp decline in the Baker County, Oregon greater sage-grouse population, local stakeholders are implementing a multi-faceted strategic plan to reduce all threats to sage-grouse and their habitat. Yet little is known about one threat, West Nile virus (WNV). Sage-grouse are highly susceptible to WNV and WNV-related die-offs can be population-limiting. However, the degree to which WNV may be impacting the local sage-grouse population is largely unknown because current disease surveillance efforts are focused in agriculture-dominated areas of the county that are not utilized by sage-grouse. Because the sage-grouse population in the Baker Priority Area for Conservation (a concentration of sage-grouse habitat in Baker County; PAC) is estimated at less than 250 individuals, it may be disproportionately affected by the disease. This project will quantify the prevalence of WNV in the Baker PAC to understand the extent to which it may be limiting the local sage-grouse population and identify disease “hot spots” in which to conduct WNV risk-reduction activities. Specifically, the fellow will work with U.S. Fish & Wildlife Service, Oregon Department of Fish and Wildlife, Bureau of Land Management, Baker Valley Vector Control, and landowners to implement a mosquito trapping and disease testing program in sagebrush habitat utilized by sage-grouse. The fellow will deploy mosquito traps, identify and submit mosquitos for diagnostic testing, manage all project data, and conduct GIS analyses to develop a “heat map” representing the risk of WNV in the Baker PAC. The fellow will report results and recommendations to reduce WNV risk to the Baker Sage-grouse local working group, as well as develop and educational campaign to alert landowners of voluntary strategies to reduce mosquito breeding habitat.

Minimum Education Level and Major Requirement

Undergraduate seniors and rising seniors who have not completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, or natural resource management; education/outreach including environmental education, community outreach, or communications; social sciences/humanities including human dimensions; and/or geographic information sciences, including GIS, or cartography.

Working Conditions/Requirements

Must have a valid driver’s license. Must have or be able to obtain an ATV Safety Education Card. Must be proficient in Microsoft Word, Excel and ArcMap (GIS). Must have skill in the operation of office equipment, office programs and mapping technologies. Must be organized and detail-oriented; prioritize and make decisions independently using initiative and good judgement in completing tasks and responsibilities. Must have the ability to communicate clearly and effectively in oral and written forms with landowners, partner agencies and entities. Must be able to work independently with minimal supervision and with diverse clientele. Must have the ability to operate an ATV. This position requires a flexible work schedule that varies in the days and number of hours worked on a daily basis, but not necessarily each day, and does not exceed forty (40) hours in a work week. Work will be performed in both an office and outdoor environment in all weather conditions. Must be able to stand and walk for extended periods of time over rough terrain; lift and move material weighing up to 50 pounds.

Desired Qualifications

Knowledge of natural resource practices and wildlife management including the habitat needs of fish and wildlife and how to integrate wildlife conservation and sustainable agriculture practices. An understanding and appreciation of landowner/working land, rural ranch community, and sagebrush conservation issues, ideally with some knowledge of the local areas or similar areas based on experience in other regions.

Bird by Bird Program—“Scaling Up” in Portland-Vancouver

Project Number: DFP20R1MIG01

Location: Portland Regional Office, Portland, Oregon

Housing: Supported, on site, rent free. Local candidates may qualify for a commuting allowance.

Project Description

The U.S. Fish and Wildlife Service (FWS) is recruiting for a fellow who is passionate about educating children and families about wildlife. This position is stationed in Portland, Oregon, however the fellow will be engaging in communities throughout the Portland, OR-Vancouver, WA metropolitan area. The fellow will develop a roadmap to expand our pilot Bird by Bird program in a sustainable and high quality fashion. The Bird by Bird program uses birds to teach conservation and stewardship values to youth and their families, by learning about birds and birding, employing citizen science conservation education and healthy activity outdoors. The program provides monthly classroom lessons, plus field trips during the year so students can apply birding skills in the field. This model supports repeat engagement that deepens learning and understanding; provides a richer opportunity to build relationships within our diverse community; and can be evaluated for long-term success. Major duties will include: developing a working knowledge of the existing Bird by Bird Program; incorporating the Service’s Urban Standards of Excellence; conduct stakeholder interviews; researching local community demographics and opportunity areas for program expansion; and creating a framework and recommendations for expansion of the program. The fellow will have the opportunity to: interact with FWS staff from a variety of levels and disciplines; visit and learn from national wildlife refuges; and engage with a variety of community partners.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, fisheries, ecology, ornithology, or natural resource management; education/outreach including environmental education, community outreach, citizen science or communications; social sciences/humanities including human dimensions; environmental justice; or other closely related fields.

Working Conditions/Requirements

Willingness to work with and develop relationships with local communities; a valid state driver’s license

Desired Qualifications

Knowledge of education systems, including ability to apply national and state learning standards; knowledge of birds and local ecosystems; ability to converse, read and/or write in Spanish.

Pacific Region Invasive Species Strategy

Project Number: DFP20R1OSA01

Location: Portland Regional Office, Portland, Oregon

Housing: Not Supported

Project Description

Invasive species, like brown tree snakes and cheatgrass, cause substantial ecological harm in the Pacific region, and many more invaders (e.g. zebra mussels) loom on the horizon. This challenge cannot be sufficiently combatted by any one U.S. Fish and Wildlife Service (Service) program, and yet no single program has lead responsibility to coordinate Service action. To address this predicament, the Pacific region established a cross-program invasive species team (PRIST) in 2011. PRIST conducted a preliminary review of regional capacity and needs in 2013 that has led to achievements such as the Service's first invasive species prevention policy. Despite that success, the review has become outdated and many of its recommendations remain unfulfilled. This project, based at the Pacific regional office in Portland, Oregon, will provide a meaningful opportunity to advance the region's capacity to address invasive species. The fellow will prepare an update to the 2013 report, enhance understanding of invasive species investments and science needs in the region, and develop an invasive species strategic plan that can guide PRIST projects and Service partnerships for the next five years. The fellow will work with PRIST and other key Service staff to learn about invasive species challenges in the Pacific region, and will have substantial opportunities to engage with, and be mentored by, invasive species experts within all of the major Service program areas.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences and associated majors.

Working Conditions/Requirements

Proficiency in verbal and written communication; proficiency in use of Microsoft products and/or associated Google documents for word processing, spreadsheets, and presentations.

Desired Qualifications

Familiar with invasive species ecology and management; interest in the intersection of science, policy, and management.

Rhode Island (1)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Developing Outreach and Mapping Tools for Shorebird Conservation

Project Number: DFP20R5MIG02

Location: Rhode Island Field Office, Charlestown, Rhode Island

Housing: Not supported

Project Description

The U.S. Fish and Wildlife Service Division of Migratory Birds (FWS-DMB) has a leading role in the conservation shorebirds throughout their migratory range. Through coordination of the Atlantic Flyway Shorebird Initiative (AFSI; <http://atlanticflywayshorebirds.org/>), FWS-DMB works with partners across the western hemisphere to implement conservation strategies for shorebirds with the aim of increasing populations of focal species 10-15% by 2025. In addition, the FWS-DMB is collaborating with partners on shorebird movement studies to help address knowledge gaps and inform conservation issues throughout the migratory range. The overarching aim of the fellowship project is to support shorebird conservation efforts conducted by the FWS-DMB. Specific objectives are to: 1) update the AFSI online project tracking database and dashboard; 2) complete a summary report describing accomplishments of AFSI partners towards meeting targets in the AFSI to date; 3) create an online shorebird movement map using data from >750 shorebirds tracked with the Motus Wildlife Tracking System; 4) deliver a presentation to the Motus community, including Motus users throughout the FWS, describing the online tracking map and methods used to visualize the data; 5) assist with other shorebird conservation efforts as assigned (e.g. translating shorebird conservation priorities into human wellbeing priorities, downloading data from Motus Wildlife Tracking Stations in southern New England).

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology and natural resource management; education/outreach; social sciences/humanities; geographic information systems or other closely related fields.

Working Conditions/Requirements

Experience with ArcGIS

Desired Qualifications

Experience with ArcGIS online applications (Survey123, Storymap); experience with programming using R and/or Python.

South Carolina (1)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Assessing and Mapping Conservation Easements for Savannah Coastal Refuges Complex

Project Number: DFP20R4NWR01

Location: Savannah Coastal Refuges Complex, Hardeeville, South Carolina

Housing: Supported, on site, rent free

Project Description

Management objectives for the Savannah Coastal Refuges Complex (complex) includes protecting and providing habitat for threatened and endangered species, migratory birds, and native wildlife species. The complex administers 28 conservation easements totaling 2,041 acres acquired from the Farmers Home Administration. These properties cover diverse locations across the coastal plain of Georgia and previous surveys suggest they can provide many conservation benefits. This survey information is outdated, however, and there is a strong need to survey these properties to obtain updated information on land cover and wildlife diversity. The fellow will develop a priority list of 10 easements and conduct site visits to assess potential conservation value of the land, document easement compliance, and develop recommendations for conservation actions to promote at the sites. The fellow will also compile and create a single GIS layer of the easement property maps. The fellow will develop a final report with survey results and recommendations and provide a presentation to Refuge staff. The fellow will get an in-depth experience at the refuge complex, with the opportunity to work with all programs, including refuge management, refuge biology, visitor services, maintenance, and law enforcement.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences (including conservation biology, wildlife biology, ecology, botany, or natural resource management) or geographic information systems (including GIS, cartography, or land survey), or other closely related fields.

Working Conditions/Requirements

Advanced knowledge of Geographic Information Systems, including ArcGIS and geographic metadata authoring; proficiency in navigation with a handheld GPS device; written and oral proficiency in English; valid driver's license; ability to hike uneven terrain and carry a pack up to 25 pounds.

Desired Qualifications

Understanding of wildlife conservation and habitat management; interest or familiarity with public outreach.

South Dakota (1)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Information and data summary for Sicklefin and Sturgeon Chub Species

Status Assessments

Project Number: DFP20R6ECO03

Location: South Dakota Ecological Services Office, Pierre, South Dakota or Bozeman Science Applications Office, Bozeman, Montana

Housing: Not supported

Project Description

The U.S. Fish and Wildlife Service (FWS) is seeking a graduate level student to work in summer months on information and data gathering, summary and assessment to support Species Status Assessments (SSAs) for 2 cyprinid chub species native to the Missouri and Mississippi Rivers: Sicklefin Chub and Sturgeon Chub. The FWS was petitioned to list these species under the Endangered Species Act in the 90s and after a 12-month Finding in 2001, the species were determined to be Not Warranted for Listing. In 2017, a positive 90-Day Finding on a recent petition resulted in an agreement to complete Species Status Assessments for these 2 fish by September 2023. The right person would have some experience in fish management, species assessments or other relevant ecological or conservation related work. The right person will work independently with fish and wildlife professionals to: 1) frame species' information requirements and threats related to the petition and for SSA needs; 2) identify and collect or summarize information and data available; 3) create a data-base of existing information; 4) in collaboration with State partners, identify data gaps and research needs that would support status assessments and decisions; 5) draw conclusions based on information, status assessment, data gaps, trends and ecological conditions. This is an excellent opportunity for an ambitious young conservation professional to get experience at the ground level in working with FWS and State partners related to Endangered Species Act listing and assessment for 2 fish species that are threatened with declines and yet broadly distributed throughout the Midwest.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in biological sciences, including conservation biology, ecology, wildlife biology, fisheries, natural resource management or other closely related fields.

Working Conditions/Requirements

Must be fluent and proficient in writing and speaking in the English language. Must be able to work at a computer, writing and comfortable speaking to a group. Must have basic ability to process data.

Desired Qualifications

Excellent writing and speaking skills. Qualified in statistical analysis relating to conservation, fisheries management or Endangered Species Act/at-risk species. Skills in conducting assessments of species or ecological/conservation conditions related to at-risk species.

Tennessee (2)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Riverlands Alliance Project Coordinator and Spatial Analysis

Project Number: DFP20R4OSA02

Location: Tennessee National Wildlife Refuge, Springville, Tennessee

Housing: Supported, on site, rent free

Project Description

This position will work with numerous members of the Riverlands Outdoor Heritage Conservation Alliance who are working to sustain capacity for natural resource use and stewardship while also conserving the cultural history, quality of life, and community vitality of western Kentucky and Tennessee. The fellow will gain experience working with personnel from three national wildlife refuges, one national park, one U. S. Forest Service site, Tennessee Valley Authority, U. S. Army Corps of Engineers, Department of Defense Fort Campbell Military Post, multiple Kentucky Fish and Wildlife Agency Wildlife Management Areas (WMAs), Tennessee Wildlife Resources Agency WMAs, Kentucky State Parks, Tennessee State Parks and various non- government organizations. The individual selected for this position will possess strong people skills, communication skills, knowledge of GIS, and sharing of information on multiple online platforms (websites, social media sites, online maps, etc.). The fellow will work with various land management personnel from multiple federal and state land management agencies to collect information on bird watching opportunities on their lands. The fellow will use this information to develop maps and general information about the various birding opportunities in the riverlands geography. The fellow will build online maps with the information collected. The web pages will be hosted on the Riverlands Alliance web page with links available for posting on each agency web site.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not yet completed their degree requirements and are pursuing a degree in conservation biology, wildlife biology, communications, human dimensions, GIS or other closely related fields.

Working Conditions/Requirements

Interpersonal and communication skills (both oral and written) are very important for this project. Knowledge/experience of GIS programs, online mapping and website building are required for the spatial aspects of this project. Experience building web pages is needed for conveying the information to the public.

Desired Qualifications

Completion of a human dimensions class, communications class and an ornithological course would be helpful for this project. As stated above GIS courses, media design (newspaper, factsheets, other print media) and online technological courses. Knowledge of common grassland and forest interior birds associated with the lower Tennessee/Cumberland River Ecosystem would be beneficial.

Facilitating Service data management through Story Maps and GeoPlatform.gov

Project Number: DFP20R9OSA01

Location: Tennessee Field Office, Cookeville, Tennessee

Housing: Not supported

Project Description

The fellow will gain a breadth of experience and a large professional network helping the U.S. Fish and Wildlife Service (Service) build its data management capabilities. The Service recognizes that our natural resource data are an essential public asset that informs conservation decisions for the Nation's fish and wildlife resources. Increasing public and policy expectations demand that the Service ensure the reliability, availability, and transparency of our scientific information. Proper data management is not only good governance, but focused attention to all aspects of data management, from planning to analysis to archiving, will result in better conservation decisions and outcomes. The fellow will work with multiple programs across the Service and the Department of the Interior to transfer data to the GeoPlatform and create communication tools to demonstrate how GeoPlatform.gov can facilitate improving data management. The fellow will also have an opportunity to attend and participate at our data management workshop at National Conservation Training Center where they will engage with staff across the Service as well as a trip to our Headquarters in DC where you will be able to engage with Service and Department of Interior leadership.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in geographic and information science including GIS, cartography, hydrology, modeling/statistics, computer science, information technology; biological sciences including conservation biology, wildlife biology, fisheries, ecology, botany, or natural resource management; or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English and an ability to represent the Service in a professional, positive, and enthusiastic manner.

Desired Qualifications

At least one advanced GIS course is highly recommended.

Texas (8)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Effects of temperature on growth rates of juvenile freshwater mussels in Texas

Project Number: DFP20R2FAC02

Location: Inks Dam National Fish Hatchery, Burnet, Texas

Housing: Supported, on site, rent free

Project Description

The fellow will work on freshwater mussel culture efforts at Inks Dam National Fish Hatchery (hatchery) in Burnet, Texas. The hatchery serves as one of three U.S. Fish and Wildlife Service (FWS) facilities in Texas rearing native mussels. Mussels being reared include the Texas fatmucket *Lampsilis bracteata*, the Texas pimpleback *Cyclonais petrina*, the pimpleback *Cyclonais pustulosa*, the pistolgrip *Tritogonia verrucosa*, the yellow sandshell *Lampsilis teres*, and the three ridge *Amblema plicata*. These mussels are endemic to central Texas and will be collected from both the Colorado and San Antonio River drainages. The fellow will design an on-hatchery experiment to determine growth and survival differences of mussels reared in indoor aquaculture systems. The fellow will compare the effects of different temperatures on growth and survival of juvenile mussels. The fellow will work with hatchery, Austin Ecological Services, and San Antonio River Authority (SARA) biologists to collect broodstock for captive rearing. Glochidia from these broodstock will be used to infest host fish and ultimately produce juvenile mussels to be used in this study. Data from this study will be summarized by the fellow to determine optimum temperature preferences for each species of mussel examined and later used to advance culture techniques for freshwater mussels at Inks Dam National Fish Hatchery and beyond. The fellow will be responsible for designing on-station rearing experiments, field collection broodstock, and completion of a final report and poster presentation. The fellow will also complete an oral presentation of findings to FWS and SARA staff.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, fisheries, natural resource management or other closely related fields.

Requirements/Working Conditions

The fellow will be required to work outdoors during summer months when ambient temperatures may exceed 100 degrees Fahrenheit.

Desired Qualifications

Strong candidates will have a background in fishery biology with an emphasis in aquaculture. An understanding of scientific writing methods and study design is desirable.

Grow out of Channel Catfish in partial recirculation system to prevent transfer of Zebra Mussels to Tribal Trust Partners

Project Number: DFP20R2FAC01

Location: Inks Dam National Fish Hatchery, Burnet, Texas

Housing: Supported, on site, rent free

Project Description

The fellow will work on production of channel catfish in partial recirculating aquaculture systems at Inks Dam National Fish Hatchery in Burnet Texas. The Hatchery serves as the U.S. Fish and Wildlife Service's (Service) sole distributor for channel catfish to Native American partners in Arizona, New Mexico, and Texas. The fellow will design an on-hatchery experiment to determine survival and performance of channel catfish in partial recirculating system. Weekly mussel sampling, stocking densities, flow indices, oxygenation systems, and operating procedures for partial recirculation will be developed and/or improved. The fellow will work with Service employees and Service partners. The fellow will be responsible for designing on-station rearing experiments, and completion of a final report and poster presentation. The fellow will also complete an oral presentation of findings to the Inks Dam National Fish Hatchery staff and the Service.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, conservation biology, fisheries, natural resource management or other closely related fields.

Requirements/Working Conditions

The fellow will be required to work outdoors during summer months when ambient temperatures may exceed 100 degrees Fahrenheit.

Desired Qualifications

Strong candidates will have a background in fishery biology with an emphasis in aquaculture. An understanding of scientific writing methods and study design is desirable.

Black-capped Vireo Post-delisting Monitoring Support

Project Number: DFP20R2ECO01

Location: Arlington Ecological Services Field Office, Arlington, Texas

Housing: Not Supported

Project Description

The U.S. Fish and Wildlife Service (Service) is the premier fish and wildlife agency with a mission of working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. This position is located in Environmental Review, Consultation, and Recovery Branch of the Arlington Ecological Services Field Office (ESFO). The Arlington ESFO is one of three field offices in Texas and is responsible for administering various wildlife conservation programs in the northern third of the state. The primary purpose of this position is to support ongoing monitoring of the status of the black-capped vireo, a songbird that was removed from the list of threatened and endangered wildlife in 2018. As part of this process, the Service is required to monitor the species for a minimum of five years to ensure its status remains healthy (post-delisting monitoring). The Service, and our conservation partners, are coordinating efforts to conduct surveys and evaluate data annually. This position would coordinate with conservation partners to identify priority areas for surveys, develop survey methods for select properties, conduct field surveys to determine the abundance of breeding birds, and report the results. More information on the post-delisting monitoring

for the black-capped vireo can be found at our website:

<https://www.fws.gov/southwest/es/ArlingtonTexas/>.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in ecology, wildlife biology, conservation biology or other closely related fields.

Working Conditions/Requirements

General knowledge of wildlife ecology, use of spreadsheets and word processing. Ability to work outdoors in hot temperatures, hiking across rugged terrain (rocks, hills, dense woodlands). Proficiency in oral and written English. Ability to hear and detect high frequency bird songs from distances up to 100 meters. Must have driver's license.

Desired Qualifications

Familiarity with GIS software; basic statistical analysis; general familiarity with common bird vocalizations.

Conservation without Conflict Spatial Data Analysis

Project Number: DFP20R2ECO02

Location: Arlington Ecological Services Field Office, Arlington, Texas

Housing: Not supported

Project Description

The U.S. Fish and Wildlife Service (Service) is the premier fish and wildlife agency with a mission of working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. This position is located in the Restoration and Pre-listing Branch of the Arlington Ecological Services Field Office (ESFO). The Arlington ESFO is one of three field offices in Texas and is responsible for administering various wildlife conservation programs in the northern third of the state. The primary purpose of the fellowship is to support ongoing species status assessments and recovery actions of species that occur primarily in east Texas, including rare freshwater mussels and plants. Good spatial information is crucial to 1) ensure that listing decisions under the Endangered Species Act are based on the best available information (e.g., abundance and distribution data), 2) recovery actions are focused on areas that will provide the most benefit to the species, and 3) delisting is supported by comprehensive surveys that demonstrate robust, thriving populations. All of these initiatives rely on spatial analysis to identify opportunities where collaboration and access to private land could prove pivotal to ensure accurate and timely conservation decision-making. This position would coordinate with conservation partners to identify priority areas for surveys, protection, or restoration on select private property.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in ecology, wildlife, conservation biology, geographic information systems or other closely related fields. Strong emphasis in GIS studies.

Working Conditions/Requirements

General knowledge of biology/wildlife ecology, use of geographic information systems, spreadsheets and word processing. Proficiency in oral and written communication in English. Must have valid state driver's license.

Desired Qualifications

Familiarity with GIS software and understanding of spatial data analysis; excellent written and verbal skills; willingness and experience working with diverse partners.

Southwest Region Pollinator Conservation Technical Tool Development

Project Number: DFP20R2ECO03

Location: Austin Ecological Services Field Office, Austin, Texas

Housing: Supported, off site, housing stipend, \$2500 total

Project Description

Building on the success of the U.S. Fish and Wildlife Service's (Service) initiative to conserve monarch butterflies and recognizing the decline of numerous pollinator species, the Service is currently establishing pollinators as a national priority. As a part of this process, the Service is developing a national pollinator conservation strategy and organizational structure that will engage all regions and programs. The fellow will develop technical tools to assist the southwest region in prioritizing and implementing pollinator conservation activities as a part of this national effort. Specific tools that the Fellow will develop include an inventory of pollinator species throughout the region, a list of at-risk pollinator species in Texas and Oklahoma, and GIS maps that portray at-risk species diversity and pollinator hot spots throughout Texas and Oklahoma. The fellow's tools will inform where the region should focus proactive conservation activities aligned with the national initiative. The fellow will be offered the opportunity to work with a wide variety of Service programs and staff, and to present their final products to regional office leadership and various pollinator working groups. The fellow will be stationed at the Austin Ecological Services Field Office (Austin, TX), under the supervision of the Regional Monarch Lead and in coordination with the Regional Pollinator Coordinator and the Science Applications program.

Minimum Education Level and Major Requirement

Enrolled graduate students who have not completed their degree requirements and are pursuing a graduate degree in biological science including conservation biology, wildlife biology, ecology, botany, or natural resource management; geographic information sciences including GIS or cartography; or other closely related fields.

Working Conditions/Requirements

Proficiency in basic GIS cartography, written and oral proficiency in English

Desired Qualifications

Understanding of pollinating insects and their decline, familiarity with biodiversity databases

Attwater's prairie chicken recovery

Project Number: DFP20R2NWR01

Location: Attwater Prairie Chicken National Wildlife Refuge, Eagle Lake, Texas

Housing: Supported, on site, rent free

Project Description

The Attwater Prairie Chicken National Wildlife Refuge plays a lead role in implementing recovery actions for the endangered Attwater's prairie-chicken. Recovery actions include habitat management, release of captive-reared prairie-chickens to supplement populations in the wild, and monitoring to provide feedback on effectiveness of these recovery efforts. As a result, the refuge maintains several large, complex datasets that document various aspects of Attwater's recovery and refuge biology. The

fellow will develop an annotated data catalog of these datasets to serve as a reference for current and future biologists and managers. The fellow will also assist with compilation of data for analysis, assist with Attwater's prairie-chicken brood monitoring including processing vegetation and invertebrate samples, and assist with transfer and release of captive-reared prairie-chickens into the wild including monitoring and daily feeding of birds in acclimation pens. All these duties are crucial to the recovery of the Attwater's prairie-chicken, and the fellow will have the opportunity to see the wide range of resources that are required to conserve an endangered species and will get to meet with multiple partners that assist with these projects. The fellow will be an integral part of the recovery effort, and the work they produce will aid in making future management decisions.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, ecology, or natural resource management; geographic and information sciences including modelling/statistics or information technology; or other closely related fields.

Working Conditions/Requirements

Must possess a valid state driver's license; must be able to complete work outside in a humid environment where temperatures can reach over 100 degrees.

Desired Qualifications

Experience working with computer databases and data management; knowledge of wildlife ecology principles; experience using radio telemetry; experience conducting wildlife and habitat surveys; interest in endangered species management.

Evaluation of Management Techniques of Texas Woodlands

Project Number: DFP20R2NWR02

Location: Balcones Canyonlands National Wildlife Refuge, Travis County, Texas

Housing: Supported, on site, rent free

Project Description

The Balcones Canyonlands National Wildlife Refuge, located 40 minutes outside of Austin, TX, is on the cutting edge of research and management of woodland habitat for the endangered golden-cheeked warbler (*Setophaga chrysoparia*). Established in 1992, the Refuge's highest biological priority is the conservation and understanding of woodland habitat management for the golden-cheeked warbler. Large-scale experiments are conducted on the Refuge to evaluate habitat management techniques. Knowledge from these experiments is communicated to both laypersons and professional land managers to assist in recovery of the species. The fellow will have the opportunity to collect and analyze data as a follow up ten years after understory thinning and prescribed fire treatments were applied within golden-cheeked warbler habitat. The fellow will have the opportunity to see a wide range of resources that are required to conserve an endangered species and will get to meet with multiple partners that assist with these projects. The fellow will be an integral part of the recovery effort, and the work they produce will aid in making future management decisions.

Minimum Education Level and Major Requirement:

Enrolled graduate students who have not completed their degree requirements and are pursuing a graduate degree in biological sciences including conservation biology, wildlife biology, botany, ecology, or natural resource management; geographic and information sciences including modelling/statistics or information technology; or other closely related fields.

Working Conditions/Requirements

Fellow must have course work in statistics, botany, and wildlife management. In addition, student must have knowledge of bird survey and vegetation monitoring techniques, statistical methods, and use of GIS and GPS. Student must be able to conduct field work independently. Must possess a valid state driver's license; must be able to complete work outside in a humid environment where temperatures can reach over 100 degrees.

Desired Qualifications

Knowledge of or interest in fire ecology or avian behavioral observation and behavioral ecology. Experience working with computer databases and data management; knowledge of wildlife ecology principles; experience conducting wildlife and habitat surveys; interest in endangered species management.

Take me back to Santa Ana National Wildlife Refuge

Project Number: DFP20R2NWR06

Location: Santa Ana National Wildlife Refuge, Alamo, Texas

Housing: Supported, on site, rent free

Project Description

The fellow in this position serves at the U.S. Fish and Wildlife Service's Santa Ana National Wildlife Refuge (NWR/refuge) within the South Texas Refuge Complex. Established in 1943 for the protection of migratory birds, the 2,088 acre refuge is considered the jewel of the refuge system. The subtropical thorn forest is host to an astounding 400 species of birds and nearly 300 species of butterflies, making it a wildlife watcher's delight. Known by birders across the globe and winter Texans, this little gem remains unknown to the majority of 1.3 million people that reside in the area. Santa Ana is within a 20 mile radius of sprawling cities – such as Mission, McAllen, Edinburg, Pharr, San Juan, Alamo, Donna, Weslaco and Mercedes, Texas, as well as Reynosa, Tamaulipas in Mexico. Despite its accessibility, there are barriers keeping the community from this refuge. One of 14 Urban National Wildlife Refuges, and 23 Urban Refuge Partnerships, the refuge is actively promoting intellectual, physical, and emotional connections between the residents of the Lower Rio Grande Valley to nature and the refuge. Santa Ana NWR has a strong public use program that offers excellent wildlife watching, photography, and environmental education and interpretation programs, yet new approaches are needed to reach out and become relevant to new audiences. The fellow will be responsible to leading the development and implementation of new outdoor recreational programs compatible with refuge public uses, promote awareness and conservation actions to benefit pollinators and Monarchs in the region, engaging community stakeholders and volunteers, and promoting a conservation stewardship by caring for native plants dedicated to enhancing the urban landscape with habitat. All while collaborating with a team of experts that work at the refuge.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences – such as environmental science, conservation biology, wildlife biology, ecology, botany, urban ecology, urban forestry; and/or a degree in education and outreach – such as visitor services/Interpretation, environmental education, community outreach, communications and/or citizen science.

Working Conditions/Requirements

- Possess a valid driver's license
- Have great communication skills and communicate effectively with English and Spanish speakers
- Be able to work with diverse audiences

- Be able to work outdoors in hot and humid conditions, with temperatures reaching over 100 degrees.
- Be able to walk and/or stand for extended periods of time
- Be motivated, flexible and willing to learn
- Be able to work in a fast-paced environment

Desired Qualifications

Some experience working with diverse audiences, Spanish speakers, working with volunteers, interpretation, outdoor recreation, gardening, experience with Adobe suite, social media, or other digital media desired.

Utah (3)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Development of a Species Status Assessment (SSA) and Draft SSA Report for Cisco Milkvetch and Isely Milkvetch

Project Number: DFP20R6ECO01

Location: Utah Ecological Services Field Office, West Valley City, Utah

Housing: Not supported

Project Description

The U.S. Fish and Wildlife Service (FWS) is the premier fish and wildlife agency with a mission of working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. This position is with the Ecological Services program. It is located in the Utah Field Office in West Valley City which is near Salt Lake City, Utah. During the 11-week fellowship, the fellow will complete a species status assessment (SSA) and a draft SSA report for two endangered plants including Cisco milkvetch and Isely milkvetch. The process will begin by becoming familiar with examples of plant SSAs, specific species information, and the FWS SSA writing process. The fellow will be responsible for coordinating the SSA drafting process with species recovery teams and the land management entities where the species occurs including the U.S. Forest Service, the State of Utah, and the Bureau of Land Management. The fellow will take part in 1-2 field trips to see the species and their habitat, and may also assist with surveys. After writing an initial draft of the document, the fellow will move the document through the review and editing process within the FWS Utah Field Office and the Lakewood Regional Office.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in ecology, biology or other closely related fields. GIS experience would also be helpful.

Working Conditions/Requirements

The fellow should have an undergraduate degree in botany, biology, conservation biology, ecology, environmental studies, or a closely related field, and be enrolled in a similar graduate program. Effective communication and solid writing skills will be necessary. The work is almost exclusively in an office setting, writing a complex document.

Desired Qualifications

Although not required, a well-qualified candidate would meet some or all of the following criteria: a degree in botany, familiarity with the Endangered Species Act, and experience writing regulatory documents necessary for environmental regulatory compliance (e.g. environmental impact statements, environmental assessments, biological assessments, biological opinions, recovery plans, listing decisions, etc.).

Improving Early Rearing Survival of Bonneville Cutthroat

Project Number: DFP20R6FAC02

Location: Jones Hole National Fish Hatchery, Vernal, Utah

Housing: Supported, on site, rent free

Project Description

The fellow will be stationed at the Jones Hole National Fish Hatchery. The Jones Hole National Fish Hatchery is a key rearing station for Bonneville cutthroat trout for stocking in Flaming Gorge, Steinaker and Red Fleet Reservoirs. The facility has 15,000 gpm of spring water at 54 F, ideal for rearing trout. Currently, early rearing survival rates of cutthroat trout are lower than survival rates of rainbow trout reared in similar conditions. The selected fellow will work on improving survival rates and overall fish condition of cutthroats reared at Jones Hole NFH. Results will be used to guide future management decisions at the facility. The fellow will present results to the Hatchery staff, Utah Division of Wildlife Resources, local partners, and angling groups. Results of this study will be used to continually improve rearing conditions for cutthroat trout.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, including conservation biology, fisheries, or other closely related fields.

Working Conditions/Requirements

Enthusiasm to learn and ability to work in cold, wet environments

Desired Qualifications

Strong candidates will have a background in fishery biology with an emphasis in aquaculture. An understanding of scientific writing methods and study design is desirable.

Invasive plant distribution and best practices management

Project Number: DFP20R6NWR02

Location: Bear River Migratory Bird Refuge, Brigham City, Utah

Housing: Supported, on site, rent free

Project Description

The fellow will develop a strategy in order to collect GPS data on invasive plant species detected throughout Bear River Migratory Bird Refuge in Brigham City, Utah. They will review existing GIS data and literature, general information, recent agency work in order to identify current needs and requirements. In addition, the individual will take the data collected and develop it into a GIS layer(s) targeting specific plant species in priority locations. The fellow will also develop suggestions and recommendations in order to support the Service in managing the most critically invasive species found on the Refuge. Finally, the fellow will write a final report detailing their work, informed by their findings.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursing a degree in biological sciences, conservation biology, wildlife biology, ecology, botany, natural resource management, GIS, or other closely related fields.

Working Conditions/Requirements

Written and oral proficiency in English and a valid driver's license. Work will be in both the office and the field.

Desired Qualifications

Understanding and ability to use Trimble or other GPS units, basic understanding of wildlife conservation, environmental biology, ecological principles and applications.

Virginia (5)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Diamondback Terrapin Exclusion Barrier Monitoring and Outreach

Project Number: DFP20R5NWR04

Location: Eastern Shore of Virginia National Wildlife Refuge, Cape Charles, Virginia

Housing: Supported, on site, rent free

Project Description

Fisherman Island National Wildlife Refuge (NWR) is located near the tip of the Delmarva Peninsula, south of Cape Charles, Virginia and is traversed by the Chesapeake Bay Bridge Tunnel (CBBT). Diamondback terrapins (a species having a high risk of extinction or extirpation based on the State's Wildlife Action Plan) move across the roadway during nesting season and high mortality associated with motor vehicle strikes has been historically observed. To reduce mortality the CBBT and the refuge have entered into a partnership to place terrapin crossing barriers at key locations along the roadway. These barriers will be installed the fall/winter of 2019. The fellow would work for the refuge monitoring (video/camera) the effectiveness of the newly installed diamondback terrapin barrier in reducing motor vehicle strikes on Fisherman Island NWR. The fellow would also be responsible for the design and installation of two educational panels and conducting educational tours explaining the importance of the barriers for terrapin conservation. Experience with wildlife monitoring studies, project design, data analysis and report writing is preferred. Experience with public outreach and education would be beneficial.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in conservation biology, natural resource management or other closely related fields.

Working Conditions/Requirements

Valid state driver's license

Desired Qualifications

Strong communications skills. Knowledge of interpretive and educational presentation is important. Strong research observation skills and study documentation is a plus.

Chincoteague Pony Grazing Management and Monitoring

Project Number: DFP20R5NWR03

Location: Chincoteague National Wildlife Refuge, Chincoteague, Virginia

Housing: Supported, on site, rent free

Project Description

Chincoteague National Wildlife Refuge (NWR) is a unique refuge on the Delmarva Peninsula along the eastern shore of Virginia. Since the inception of the refuge, the U.S. Fish and Wildlife Service has supported grazing leases on Chincoteague NWR for the iconic Chincoteague ponies. This is a unique relationship where ponies are the property of the Chincoteague Volunteer Fire Company (CVFC) but grazed on refuge lands. The grazing can be beneficial to many habitat objectives in specific habitat types but grazing has largely been unmanaged and important habitats (namely salt marsh) on the refuge have declined as a result of overgraze. The refuge has worked with U.S. Department of Agriculture (USDA) to

define grazing management strategies and USDA has drafted transition models that serve as indicators of when to move horse out of areas early so as to avoid impacts. The fellow would be responsible for implementing a rotational grazing program in conjunction with the CVFC and the refuge and subsequently monitor the changes in vegetation in response to grazing management. Data collected would also assist USDA in refining the transition models for salt marsh (a habitat type they have not worked extensively in and will be exported for use by USDA). The fellow should have interest in range management, and vegetation monitoring; and display solid communication skills and initiative. Results of this work will assist the refuge in understanding whether these changes can result in significant improvements in habitat quality and establish methods that can be used as an integrated component of refuge management.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in natural resource management, conservation biology, rangeland management or other closely related fields.

Working Conditions/Requirements

Valid state driver's license

Desired Qualifications

Knowledge of study design and data management is important. Skill in livestock fence repair is desired.

Mosquito Management at Chincoteague National Wildlife Refuge

Project Number: DFP20R5NWR02

Location: Chincoteague National Wildlife Refuge, Chincoteague, Virginia

Housing: Supported, on site, rent free

Project Description

Chincoteague National Wildlife Refuge (NWR/refuge) is located on Assateague Island, a long barrier island that runs from southern Maryland into Virginia. The refuge was founded in 1943 for the primary purpose of providing habitat for migratory waterfowl. Large freshwater impoundments were created providing important wetland habitat for migratory waterfowl during migration in this important bird area. In 1965, Assateague National Seashore was created and placed a recreational beach within Chincoteague NWR that is administered by the National Park Service (NPS). Over time, the recreational beach has been subject to storm damage that has eroded the beach to a point that it is not sustainable to maintain at that location. The refuge and the NPS worked together with the community to identify a location within the refuge that is more sustainable. That parking lot location is adjacent to several of these wetland impoundments and thus will likely be subject to a different visitor experience when it comes to mosquitos. It is clear that we can implement some minor changes during the construction and management of the parking areas adjacent to these wetlands to improve mosquito issues. In order to understand the issue, the fellow will be responsible for conducting monitoring of mosquitos and use the information on habitat preferences, species present and periodicity to develop recommendations to reduce mosquito and human interactions. The fellow should have interest in entomology, human dimensions, land management and wetland ecology; and display solid communication skills and initiative. Results of this work will assist the refuge in understanding whether changes in stormwater management, or impoundment management can result in significant improvements to mosquito habitat and establish methods that can be used as an integrated component of refuge management. Mosquitos are an important component to the ecosystem, thus recommendations must balance ecological values with visitor services.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in conservation biology, natural resource management, or other closely related fields.

Working Conditions/Requirements

Valid state driver's license

Desired Qualifications

Strong communications skills. Knowledge of study design and data management is important. Skill in basic entomology is desired.

Foreign Species Fellow – Candidate Notice of Review

Project Number: DFP20R9ECO02

Location: U.S. Fish and Wildlife Service Headquarters, Falls Church, Virginia

Housing: Not supported

Project Description

Please join the dynamic team in the U.S. Fish and Wildlife Service's Headquarters Office. The Ecological Services Program, Branch of Delisting and Foreign Species is offering an exciting fellowship opportunity. The position is located in Falls Church, Virginia, just outside the Nation's Capital, allowing for ample networking opportunities both within the U.S. Fish and Wildlife Service (Service) and with external partners. The selected fellow will assist the Service in meeting the statutory requirement of the Endangered Species Act (ESA) to assess annually the status of species listed as candidates for inclusion on the Lists of Endangered and Threatened Wildlife and Plants under the ESA. This work is essential in determining whether a species should be elevated or removed from candidate status or have its listing priority number changed. Specifically, the selected fellow will be responsible for conducting literature searches for the best scientific and commercial information available to assess the status of 19 foreign species listed as candidates under the ESA. The fellow will update the species status assessments based on their research, and work to conduct briefings and prepare documents (including briefing papers, and outreach materials) associated with the 19 foreign species for inclusion in the formal review and submission of the Candidate Notice of Review (CNOR) to the *Federal Register*. This is a terrific fellowship opportunity if you are interested in learning more about international conservation, Federal and international laws governing wildlife, and experience in endangered species research and writing.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not completed their degree requirements and are pursuing a degree in biological sciences or other closely related fields.

Working Conditions/Requirements

Fellows will work in our Falls Church, Virginia office using standard office equipment (e.g., computer, printer, scanner, paper shredder, and electric or manual hole punch). We will provide a workspace and a computer. The work will generally be sedentary. Exceptions may include physical work that requires lifting of books or boxes and travel to offsite meetings. Modes of transportation to offsite meetings will include personal vehicle, public transportation, or carpooling

Desired Qualifications

Enrollment in a college or university, good communication/writing skills; background/knowledge in wildlife biology, environmental science and policy, ecology, or similar preferred; experience with basic computer applications.

GIS Strategy for Ecological Services

Project Number: DFP20RHQEC001

Location: U.S. Fish and Wildlife Service Headquarters, Falls Church, Virginia

Housing: Not supported

Project Description

The Ecological Services program in Headquarters is seeking a fellow to assist Ecological Services in the development of a strategy for Geographic Information Systems (GIS) to improve on how we use GIS in our decision making in a consistent manner. The fellow shall provide recommendations for the collection, management, storage and access to geospatial data used in the Environmental Conservation Online System (ECOS) now and in the future. The fellow will ensure that current ECOS meta data standards are documented and recommendations are made for the future. The fellow will work with various U.S. Fish and Wildlife Service (FWS) staff and contractors so that s/he may fully understand the environment and needs for the future and to better understand distinct GIS life cycles so that we may ensure all geospatial data life cycles are along the same line. The fellow will provide good quality, fit-for-purpose data via intuitive interfaces to help FWS Ecological Services meet its annual goals and longer-term objectives. The fellow will assist in the design of GIS products that are oriented toward solutions, and publish them after they are fully functional and accepted by the business sponsor.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not completed their degree requirements and are pursuing a degree in Geographical Information Sciences (GIS) or other closely related fields.

Working Conditions/Requirements

GIS Certification Required

Desired Qualifications

Previous experience with GIS systems; awareness of the Endangered Species Act; familiarity with best management practices for data

Washington (1)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Coho Salmon Production Assessment in the Tsoo-Yess River

Project Number: DFP20R1FAC01

Location: Makah National Fish Hatchery, Neah Bay, Washington

Housing: Supported, on site

Project Description

The fellow will be stationed at Makah National Fish Hatchery (NFH) in Neah Bay, WA. The station rears Coho Salmon and other Pacific Salmon species to support U.S. Fish and Wildlife Service (FWS) Tribal Trust responsibilities to the Makah Tribe and to provide fishing opportunity for both Tribal and non-Tribal commercial and recreational fishers. Increases in water temperatures at the hatchery have resulted in disease outbreaks and increased mortality of hatchery Coho Salmon, which has significantly influenced commercial and recreational tribal fisheries and hatchery production. The FWS is working with the Makah Tribe to explore innovative solutions to this problem including alternative release strategies for juvenile Coho Salmon. The fellow will design and implement juvenile Coho Salmon habitat assessments in the Tsoo-Yess River, WA. This information will help determine how many fish the river can support and if the revised rearing and release program is effective. The fellow will work with fish biologists and managers from Makah NFH, Western WA Fish and Wildlife Conservation Office, and Makah Tribe to identify survey sites in the Tsoo-Yess River, conduct stream fish surveys for juvenile Coho Salmon throughout the summer, summarize survey results, and produce a Coho Salmon distribution map and written summary report. The research results will be presented to the various partners at the end of the summer. Housing will be provided at Makah NFH. The hatchery is at the northwest tip of Washington State's Olympic Peninsula. The hatchery is minutes away from Olympic Coastal beaches and hiking opportunities in Olympic National Park. During the summer, numerous opportunities exist in the area for fishing, exploring Pacific Coast beaches, hiking in Olympic National Park and nearby areas, and other outdoor activities.

Minimum Education Level and Major Requirement

Enrolled graduate student (accepted into graduate program, but has not yet begun) pursuing a degree in biological sciences including conservation biology, wildlife biology, fisheries, ecology, or natural resource management.

Working Conditions/Requirements

Fellow will be conducting electrofishing surveys in the field. FWS electrofishing certification will be required (online training) as well as first aid/CPR. Much of the work will be performed in the field. Successful fellow will need to be able to walk over uneven surfaces up to 1 mile, be able to lift up to 50 pounds, and be able to wade in streams.

Desired Qualifications

The fellow will need to be able to work independently, work as a member of a team, and provide leadership for field surveys. The fellow will be working in the field so they must be comfortable working in the outdoors and performing stream fish surveys. Fish identification skills, GIS skills, and the ability to communicate orally and in writing are desired.

Washington D.C. Metropolitan Area (2)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Foreign Species Fellow – Candidate Notice of Review

Project Number: DFP20R9ECO02

Location: U.S. Fish and Wildlife Service Headquarters, Falls Church, Virginia

Housing: Not supported

Project Description

Please join the dynamic team in the U.S. Fish and Wildlife Service's Headquarters Office. The Ecological Services Program, Branch of Delisting and Foreign Species is offering an exciting fellowship opportunity. The position is located in Falls Church, Virginia, just outside the Nation's Capital, allowing for ample networking opportunities both within the U.S. Fish and Wildlife Service (Service) and with external partners. The selected fellow will assist the Service in meeting the statutory requirement of the Endangered Species Act (ESA) to assess annually the status of species listed as candidates for inclusion on the Lists of Endangered and Threatened Wildlife and Plants under the ESA. This work is essential in determining whether a species should be elevated or removed from candidate status or have its listing priority number changed. Specifically, the selected fellow will be responsible for conducting literature searches for the best scientific and commercial information available to assess the status of 19 foreign species listed as candidates under the ESA. The fellow will update the species status assessments based on their research, and work to conduct briefings and prepare documents (including briefing papers, and outreach materials) associated with the 19 foreign species for inclusion in the formal review and submission of the Candidate Notice of Review (CNOR) to the *Federal Register*. This is a terrific fellowship opportunity if you are interested in learning more about international conservation, Federal and international laws governing wildlife, and experience in endangered species research and writing.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not completed their degree requirements and are pursuing a degree in biological sciences or other closely related fields.

Working Conditions/Requirements

Fellows will work in our Falls Church, Virginia office using standard office equipment (e.g., computer, printer, scanner, paper shredder, and electric or manual hole punch). We will provide a workspace and a computer. The work will generally be sedentary. Exceptions may include physical work that requires lifting of books or boxes and travel to offsite meetings. Modes of transportation to offsite meetings will include personal vehicle, public transportation, or carpooling

Desired Qualifications

Enrollment in a college or university, good communication/writing skills; background/knowledge in wildlife biology, environmental science and policy, ecology, or similar preferred; experience with basic computer applications.

GIS Strategy for Ecological Services

Project Number: DFP20RHQEC001

Location: U.S. Fish and Wildlife Service Headquarters, Falls Church, Virginia

Housing: Not supported

Project Description

The Ecological Services program in Headquarters is seeking a fellow to assist Ecological Services in the development of a strategy for Geographic Information Systems (GIS) to improve on how we use GIS in our decision making in a consistent manner. The fellow shall provide recommendations for the collection, management, storage and access to geospatial data used in the Environmental Conservation Online System (ECOS) now and in the future. The fellow will ensure that current ECOS meta data standards are documented and recommendations are made for the future. The fellow will work with various U.S. Fish and Wildlife Service (FWS) staff and contractors so that s/he may fully understand the environment and needs for the future and to better understand distinct GIS life cycles so that we may ensure all geospatial data life cycles are along the same line. The fellow will provide good quality, fit-for-purpose data via intuitive interfaces to help FWS Ecological Services meet its annual goals and longer-term objectives. The fellow will assist in the design of GIS products that are oriented toward solutions, and publish them after they are fully functional and accepted by the business sponsor.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not completed their degree requirements and are pursuing a degree in Geographical Information Sciences (GIS) or other closely related fields.

Working Conditions/Requirements

GIS Certification Required

Desired Qualifications

Previous experience with GIS systems; awareness of the Endangered Species Act; familiarity with best management practices for data

West Virginia (2)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Threatened & Endangered Species Conservation Planning in West Virginia

Project Number: DFP20R5ECO06

Location: West Virginia Field Office, Davis, West Virginia

Housing: Not Supported

Project Description

The fellow will prepare a five-year status review or portions of a draft recovery plan for a federally listed species in West Virginia. The species selected may include the darters, crayfish, salamanders, or plants. The fellow may also develop or revise survey protocols for these species and hold workshops and meetings with other U.S. Fish and Wildlife Service partners to help implement these plans. The preparation of these documents will require both independence and strong collaboration skills. The fellow will have the opportunity to work with multiple state and federal management agencies, as well as species experts at universities and research facilities. The best-qualified fellow for this position should have strong writing and critical thinking skills, will be highly organized and professional, and will use a breadth of knowledge of basic plant and animal biology to accomplish tasks and deliverables. This position will provide a highly qualified student with thorough experience in endangered species conservation and recovery.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences including conservation biology, wildlife biology, fisheries, ecology, environmental sciences, or similar natural resource management. Degrees in geographic information systems or hydrology may also qualify.

Working Conditions/Requirements

Written and oral proficiency in English. Experience with Microsoft Word, Excel, and Powerpoint. Due to the rural nature of the work site and distance to shopping facilities (e.g. grocery stores, etc.) a valid state driver's license and vehicle are required.

Desired Qualifications

Experience or familiarity through either course work or field work, with at least one of these taxa: darters, crayfish, salamanders, or plants; Excellent writing skills; Understanding of endangered species planning and management; Familiarity with conducting surveys for plants or animals; Familiarity with ArcGIS.

Native Youth Community Adaptation and Leadership Congress (NYCALC)

Project Number: DFP20R9NCT01

Location: National Conservation Training Center, Shepherdstown, West Virginia

Housing: Supported, housing stipend, \$700 per month

Project Description

The Native Youth Adaptation and Leadership Congress (NYCALC) is the only national level program of its kind designed for Native American, Alaskan Native and Pacific Islanders to develop leadership skills while learning how to address environmental issues facing their communities. The mission of NYCALC is

to engage Native youth, college students, community members, and federal agencies through educational opportunities, leadership development, and through the promotion of communication and collaborative efforts between Native communities and the Federal family in natural resource conservation and stewardship. For more information on NYCALC visit: www.nycalc.org. The fellow will assist in the development and delivery of NYCALC. Additionally the fellow will increase the capacity of NYCALC through the development and implementation of a social media and outreach plan. The fellow will interact with and learn from partners at federal, state and non-government levels. Professional development includes leadership development, networking and resume building opportunities. NYCALC supports the Department of Interior's Federal Trust responsibilities to Indian tribes and Native Alaskans.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences, education/outreach, social sciences, humanities or other closely related fields.

Working Conditions/Requirements

Strong social media and networking skills.

Wisconsin (1)

Partner Organization: [Student Conservation Association \(SCA\)](#)

Physical habitat and Freshwater Mussel community assessment for the Wapsipinicon River

Project Number: DFP20R3FAC01

Location: Midwest Fisheries Center, Onalaska, Wisconsin

Housing: Not supported

Project Description

The Wapsipinicon River has a total drainage area of 2,520 square miles with the majority of the watershed residing in the state of Iowa. Land use in this watershed is dominated by agriculture and there is a growing concern that increased flooding events have increased sediment loading to the river. Dam removals have increased connectivity within the river by improving fish passage and providing greater access to seasonal habitats and fish host-mussel encounters increasing the potential for propagation, dispersal and survival. However, the increase in sediment loads may contribute to habitat instability, negatively impacting presence and abundance of native mussels residing in the river. The fellow will collect side scan sonar to compare to previously collected side scan sonar and overlap mussel community data to investigate if in-channel physical habitat changes are having an impact on mussels in the target reaches of the Wapsipinicon River in Iowa. The fellow will also be researching and compiling data from Littleton, Iowa to Independence, Iowa on the Wapsipinicon River to set the foundation for a sediment transport model.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in biological sciences including conservation biology, wildlife biology, fisheries, ecology, or natural resource management; geographic and information sciences including GIS; or other closely related fields.

Working Conditions/Requirements

Applicant must have a valid state driver's license and be able to lift up to 40 pounds for the movement of equipment in the field, and be able to work in the field for a large portion of the project. Written and oral proficiency in English.

Desired Qualifications

At least one advanced GIS course is highly recommended. Coursework in ecology, fisheries, and/or hydrology is also highly desirable.

Wyoming (2)

Partner Organization: [Greening Youth Foundation \(GYF\)](#)

Data collection and summary for the Western Bumble Status Assessment

Project Number: DFP20R6ECO04

Location: Wyoming Field Office, Cheyenne, Wyoming

Housing: Not supported

Project Description

Conservation of at-risk pollinators is a regional priority, and the western bumble bee is ecologically significant, providing pollination services to numerous native and commercial plant species throughout its range, including key plants in the grassland and sagebrush ecosystems, the conservation of both are priorities. This U.S. Fish and Wildlife Service is currently determining if this species should be listed under the Endangered Species Act, and this fellow will assist acquiring and collecting data, including some analyses, to inform an accurate assessment for this effort. Additionally, the data will be collected with the intent of supporting long-term conservation of this key pollinator.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, including conservation biology, botany, natural resources management, geographic information systems, modeling/statistics, or other closely related fields.

Desired Qualifications

Bee identification, entomology, database management.

Management of pronghorn on F.E. Warren Air Force Base

Project Number: DFP20R6FAC03

Location: Colorado Fish and Wildlife Conservation Office, Cheyenne, Wyoming

Housing: Not supported

Project Description

This program offers a chance to collaborate with multiple agencies to undertake unique pronghorn management challenges at F. E. Warren Air Force Base in southeast Wyoming. Limited natural predators and a bountiful food supply found on the Base golf course, lawns, and ornamental landscapes have led to high population levels leading to conflicts and safety concerns (vehicle collisions). In collaboration with Wyoming Game and Fish Department, U.S. Fish and Wildlife Service (FWS) has worked to address these conflicts to maintain a viable and healthy population, address Air Force safety and mission concerns, and provide recreational hunting opportunities. In close coordination with a FWS biologist, fellow will survey the Base pronghorn population every two weeks. New population information will be added to existing datasets, and trends will be analyzed and models developed to determine demographic patterns. Hunter Management Area recommendations and pronghorn hunting rules will be reviewed and any proposed changes will be vetted through Air Force, WGFD and FWS personnel. Fellow will report regularly through weekly written and oral presentations. A final report will be prepared documenting accomplishments. The fellow will gain exposure to multiple stakeholders, navigate organizational levels, demonstrate a high degree of autonomy and personal responsibility, and present deliverables and work products to diverse key decision makers. This project supports the mission of the

FWS and fulfills National/Regional priorities including (1) creating a conservation stewardship legacy; (2) fostering relationships with organizations advocating for balanced stewardship and use of public lands; (3) developing recommendations to increase access for recreational hunting activities; and (4) expanding lines of communication with state natural resource agencies, FWS, and local communities.

The fellow must be a self-starter with critical thinking and problem solving abilities, able to identify informational needs, analyze potential outcomes, and resolve issues and concerns as they arise. An understanding of military culture is desirable.

Minimum Education Level and Major Requirement

Graduate student who has completed at least their first year or more of graduate school (Masters or PhD), but has not yet completed their degree requirements. Pursuing a degree in biological sciences, social sciences, geographic and information sciences, or other closely related fields.

Working Conditions/Requirements

(1) Valid state driver's license, (2) Knowledge of population dynamics and modeling, (3) Completion of at least 1 year of graduate level education in biological, fisheries, or wildlife management sciences, (4) Ability to traverse rough terrain on foot, (5) Knowledge of computer program software (R Statistical Analysis software), (6) Ability to communicate effectively, both orally and in writing, clearly, concisely, and with technical accuracy.

Desired Qualifications

(1) Basic knowledge of applicable Federal, State, and local laws, regulations, and other guidance to make recommendations concerning assigned restoration, conservation, wildlife and fisheries management principles and practices, (2) Ability to search technical reports, databases, and other sources to obtain information, (3) Ability to work cooperatively as a team member in natural resources projects. (4) Experience with Statistical Program R including population modeling

Guam (1)

Partner Organization: [American Conservation Experience \(ACE\)](#)

Mariana Islands compliance monitoring database for endangered species

Project Number: DFP20R1ECO02

Location: Ecological Services Marianas Field Office, Hagatna, Guam

Housing: Not Supported.

Project Description

The fellow will work with field, database and GIS biologists to lead a project developing a template for reporting and populating an Endangered Species Act (ESA) compliance monitoring database with annual reports submitted by military partners (geospatially referenced) that track multiple regulatory commitments including biological opinions, integrated resources management plans and other agreements in the Marianas Islands.

Minimum Education Level and Major Requirement

Undergraduate rising seniors and seniors who have not yet completed their degree requirements and are pursuing a degree in degree biology, conservation, natural resources management or other closely related fields. GIS training preferred.

Working Conditions/Requirements

Office work with some field site visits. Basic understanding of wildlife ecology, botany, conservation, habitat restoration and endangered species management in Guam.

Desired Qualifications

Access database and/or GIS training preferred (but not mandatory).