



## Position Description

### Restoration Monitoring Data and Information Specialist

The National Wildlife Refuge Association, in partnership with Midway Atoll National Wildlife Refuge and the USFWS Pacific Region Inventory and Monitoring Program, seeks an individual with strong restoration ecology, database development, and ecological monitoring design skills for an 18-month period to help Refuge staff meet scientific information needs associated with expanding habitat restoration and weed control programming. The selected individual will be an employee of the National Wildlife Refuge Association and will work closely with Refuge staff and volunteers to develop robust data collection procedures, design databases, and data management systems for currently implemented weed control, native plant propagation and habitat restoration activities. The primary goal of this position is to set-up a robust habitat restoration monitoring system that can be utilized and maintained by USFWS staff to holistically evaluate the success of restoration efforts, encompassing and integrating complex and large-scale weed control and native plant propagation programs.

#### Project Overview

Midway Atoll National Wildlife Refuge (Refuge) is a globally significant seabird colony located in the remote Northwest Hawaiian Islands. With a 100+ year history of European human presence, including introduction of hundreds of non-native species and drastic modifications of terrestrial and marine habitat associated with construction of a large naval base, the US Fish and Wildlife Service (Service) is engaged in a multi-decade habitat restoration and creation effort. Invasive plant control and native plant restoration to provide high-quality nesting habitat for priority seabird species and other native wildlife are the primary management activities conducted at Midway.

The Refuge is currently undergoing significant and rapid changes in habitat structure and composition as a result of on-going control and eradication efforts directed at *Verbesina encelioides*. Additionally, a successful rat eradication completed in 1997 resulted in exponential increases in ground-nesting and burrowing seabird populations, who act as significant habitat modifiers through digging and nest-building activity. Year-round seabird nesting and a highly disturbed and dynamic environment situated in a tropical climate create a completely unique set of challenges and opportunities for habitat restoration. At this time the Refuge has an active on-site propagation and outplanting program for 13 species of native plants, only one of which, a native bunchgrass, has established collection, propagation and outplanting methods. Practices for all other species of native plants remain in the experimental stage. There is an urgent need for practical methods to document propagation and outplanting techniques and performance as well as monitor the resource response in order to increase understanding of why some out-plantings fail and modify techniques accordingly.

The invasive plant control program at Midway is well-established and successful for some species, however, as the most noxious weeds are eliminated from the Refuge, other weed species quickly occupy these niches. Methods to document and prioritize control efforts and determine effective herbicide types, spray intervals, and application methods for a variety of invasive plants are also urgently needed. Integrating weed control data with other restoration programming will be an essential component of the work.

## **Duties**

- Applies knowledge of relational databases and database design to design and develop data management, visualization, and analysis applications. The design and development of these customized applications will be tailored to allow end users (Refuge staff and volunteers) to access and manipulate survey information that would minimize user training.
- Applies statistical concepts, advanced GIS skills, and other innovative techniques to track all aspects of plant propagation performance, herbicide efficacy, outplanting success, and large-scale achievement of habitat rehabilitation and restoration objectives. Work closely with Refuge staff in the field and office to ensure that products are user-friendly and sustainable for long-term implementation.
- Work closely with Refuge staff to develop robust field and greenhouse data collection procedures and ensure that data is collected and managed in a way that facilitates analysis and development of propagation and outplanting SOPs. Work with Refuge staff and Honolulu-based Inventory and Monitoring Biologists to ensure designs meet project objectives and are statistically valid.
- Performs as a lead analyst in researching and adapting new techniques for complex data management, GIS, and data visualization. Subject area expert defining database structures, processing algorithms, version control and other transactions, interfaces to external databases, functionality and product design.

## **Minimum Qualifications**

- Knowledge of advanced biometric principles and statistical methods to design scientifically sound ecological monitoring frameworks and interpret results.
- Ability to identify and use statistical methods to analyze complex data sets including but not limited to Excel, MS Access, ArcGIS, R, and SAS.
- Knowledge of principles and practices of biology (i.e. ecological principles; ecosystems, plant, wildlife and fish population dynamics, and surveys for natural resource management) used to identify critical data needs to support surveys for resource conservation and management.
- Broad knowledge of advanced literature and theory in the fields of biometrics, statistics, restoration ecology, ornithology, and resource management, especially as it pertains to refuges.
- Extensive knowledge of database management concepts, principles, and methods including database logical and physical design sufficient to design, develop, and maintain data management systems that meet current and future monitoring program policy requirements for natural resource management.
- Ability to comprehend and evaluate developments in data management, spatial data collection and analysis, and related fields and apply them to refuge-based projects.
- Skills and experience using Trimble GPS units or similar mapping grade GPS units and ability to train others.
- In good health with no physical or mental conditions that require regular access to medical facilities. Moderate to good physical fitness in order to access off-road field sites situated in sandy, rugged terrain.

## **Additional Desired Qualifications**

- Knowledge and experience managing large scale plant propagation programs and facilities, including inventory management and tracking from potting to outplanting

- Knowledge and experience in invasive plant control, including geospatially-based tracking and monitoring of control effort
- Experience and knowledge of herbicide types, calibration, and application techniques used in a natural resources management setting

### **Duty Station**

Midway Atoll National Wildlife Refuge is a remote site and accessible by plane twice a month. Because of the isolated nature of this work, safety and the ability to live and work closely with a small group of people for extended periods of time is of the utmost importance. Evacuation for family emergencies or medical issues can typically take at least 24 hours and be potentially very expensive. The selected individual will need to carry medical-evacuation insurance.

A current passport is required for travel to and from Midway. Employees are responsible for their own travel to Honolulu. Two round-trip flights between Midway and Honolulu are provided. This includes travel at the start and end of the contract, as well as a break in middle. Housing is provided at no cost to the employee. An office space at Refuge headquarters with computer, telephone, internet connection, and office supplies will also be provided. The position requires access to USFWS networks and a full Federal background check (cost covered by the Refuge) will be required of the selected individual. Meals are provided on-site at the "Clipper House" which serves cafeteria-style food with a wide variety of dishes, including vegetarian options and a full salad bar, courtesy of Midway's hydroponic garden. There is a small convenience store on Midway that provides some basics: toiletries, refreshments, etc. Because Midway is a small community where employees work and live with FWS employees, volunteers, and resident base operations contractors, there is a zero tolerance policy for harassment or abuse of any kind, including alcohol or drug abuse.

### **Hours, salary, and benefits**

Hourly rate: \$20.00-\$25.00/hour depending on experience.

At this time there is funding for 78 weeks of work (18 months at 40 hrs/week). The employee will be expected to work a standard 40-hour work week, with occasional weekend or evening work, depending on specific project needs and time of year.

Lodging will be in private staff quarters (a remodeled duplex), which includes a bedroom, living room, full kitchen, and bathroom. The house is furnished with all appliances, beds and bedding, furniture, and basic kitchen utensils. Residents are responsible for the proper upkeep of their living quarters, as well as purchasing basic supplies (detergent, toilet paper, etc.).

The employee will be billed the resident meal rate (\$3.00 for breakfast, \$4.00 for lunch, and \$5.00 for dinner) for all meals eaten at the Clipper House.

The National Wildlife Refuge Association offers a full health and retirement benefits package.

### **The National Wildlife Refuge Association**

The National Wildlife Refuge Association is an independent 501(c)3 nonprofit organization that works in partnership with the U.S. Fish and Wildlife Service to advance the wildlife conservation mission of the National Wildlife Refuge System. For more information about the Refuge Association, please visit [www.refugeassociation.org](http://www.refugeassociation.org). The main contacts for this project are Anne Truslow, Vice President [atruslow@refugeassociation.org](mailto:atruslow@refugeassociation.org) and Meg Duhr-Schultz, Wildlife Refuge Specialist ([meg\\_duhrschultz@fws.gov](mailto:meg_duhrschultz@fws.gov)).

## **Schedule and Application Process**

Application deadline: December 11, 2015

Interviews: December 17-22, 2015

Selection made: by January 15, 2016

Project underway at Midway Atoll: April 12, 2016-September 2017

To receive a copy of the work plan or to ask project and location-specific questions, please contact Meg Duhr-Schultz. For salary and benefits questions, please contact Anne Truslow.

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To apply, please send a cover letter, resume/CV, and list of at least 3 professional references to both Anne Truslow *and* Meg Duhr-Schultz by December 11. Please submit application packages as a single .pdf file with your last name in the title of the document.