

NATIONAL PARK SERVICE
FINANCIAL ASSISTANCE: NOTICE OF INTENT TO AWARD

This announcement is not a request for applications.

This announcement is to provide public notice of the National Park Service's intention to award a task agreement under a previously competed or single source justified master cooperative agreement.

ABSTRACT	
Funding Announcement Number	P17AS00348
Project Title	Monitoring and Data Development for Special Status Plants and Pollinators in Mesa Verde National Park, Montezuma County, Colorado – 2017
Recipient	Jill Handwerk Colorado State University
Anticipated Federal Funding	\$19,000
Anticipated Period of Performance	6/15/17-9/30/18
Award Instrument	Task Agreement
Statutory Authority	54 U.S.C. §100703
CFDA # and Title	15.945 CESU
Point of Contact	Katie Gaertner Katie_gaertner@nps.gov

BACKGROUND AND OBJECTIVES

Cooperative Agreement Number P14AC00921 was entered into by and between the Department of the Interior, National Park Service, (NPS), and Colorado Natural Heritage Program (hereafter referred to as 'Recipient') for the purpose of providing research, technical assistance, and/or education, as described below. Unless otherwise specified herein, the terms and conditions as stated in the Cooperative Agreement will apply to this Task Agreement.

STATEMENT OF WORK

1. The data resulting from the 2016 and 2017 field surveys conducted by MEVE staff will be provided to CNHP for incorporated into the BIOTICS database. The resulting dataset will be provided to MEVE staff in a geospatial format, thus providing park biologists and operations staff the ability to view rare plant data in a consistent, repeatable format, following NatureServe methodology.
2. CNHP will continue to gather life history information on Chapin Mesa milkvetch by completing the following population monitoring tasks: 1) resample 43 belt transects, 2) resample the 20 demography plots established in 2015, 3) resample the original Sun Point and Sun Temple demography plots, 4) read and service the six soil moisture and temperature sensor/data logger sets emplaced in 2015 on Chapin Mesa, 5) update a regression model using all applicable population data available against precipitation, fire effects, and other parameters as appropriate, 6) provide a written report and photos detailing findings to MEVE staff.
3. In collaboration with MEVE staff (Tova Spector), CNHP will design and implement a pollination visitation study for Chapin Mesa milkvetch. The study will examine the relationship between insect visitation and fruit/seed set in burned vs unburned areas. The study will be a balanced design utilizing existing methods (Spackman 2004). CNHP will assist in testing the methods and working

with MEVE technicians to implement the study in the spring of 2017. This is considered a pilot study and a more robust design and implementation can be planned for future years.

RECIPIENT AGREES TO:

1. In the fall and winter of 2017 data provided to CNHP from MEVE staff field surveys will be entered into the CNHP BIOTICS database. Protocol developed by NatureServe for the Natural Heritage Programs will be followed to develop new or update existing element occurrence records.
2. Chapin Mesa milkvetch monitoring will be conducted starting in the late spring of 2017 and continue into the summer. CNHP staff will coordinate with MEVE staff to determine the most appropriate phenological window to conduct sampling. A total of 43 belt transects covering 4,067 meters will be sampled. These were originally sampled in 2001 (Anderson 2004). Subsequent sampling years were 2003, 2011, 2012, 2013, 2014, 2015, and 2016. Each transect is oriented in an east-west direction, traversing Chapin Mesa. The transects are 10 meters wide and spaced 500 meters apart following UTM northing lines projected in NAD 27 Datum, Zone 12T. Each belt transect is broken into 100m x 10m segments. Within each segment, a census of the Chapin Mesa milkvetch individuals will be recorded. To avoid deviating from the UTM northing line, CNHP staff will use a Trimble or Garmin GPS in tandem with a compass. Data will be recorded electronically using an iPad and will be incorporated into the long-term data set at the CNHP main office.

For the demography plots established in 2015, CNHP will re-measure:

- Number of individuals and seedlings
- Number of flowers and fruits per individual
- Number of aborted flowers (to support pollination study)
- Number of stems per individual
- Heights of individuals
- Use the line-point intercept method for weed species composition (50 points/50 m transect).

To continue gathering comparative data on plant longevity, CNHP will re-photograph and evaluate individual plants in subplots. CNHP will revisit soil moisture sensor data logger sets at six of the new demography plots (three burned and three unburned), download the data, change out batteries, and service the site and equipment as needed. CNHP also will resample the original Sun Point and Sun Temple demography plots using the original protocol to continue to enhance that long-term dataset.

CNHP will incorporate 2017 monitoring data into existing regression models to investigate the relationship between precipitation, vegetation community dynamics, invasive plants, and Chapin Mesa milkvetch densities. If other variables of interest are identified by CNHP or MEVE staff, those also will be incorporated. Regression models will be built with the assistance of the CSU Statistics Lab.

3. The pilot Chapin Mesa milkvetch pollination study will follow methods outlined in Panjabi 2004; *“Visiting insect diversity and visitation rates for seven globally-imperiled plant species in*

Colorado's middle Arkansas Valley". Available at
http://www.cnhp.colostate.edu/download/documents/2004/Arkansas_pollinators.pdf

NATIONAL PARK SERVICE AGREES TO:

The NPS ATR/project manager will obtain the necessary permits, environmental clearances, gate keys, radio and other park-specific requirements to facilitate the work of the principal investigator and her team. The ATR will ensure there is regular park staff participation in the fieldwork, data and GIS sharing, meetings, workshops, and development of final reports, published materials, and educational byproducts.