Grant Opportunity – Virginia Mountains Greater Sage-grouse Research and Monitoring

Proposals are due no later than September 8, 2017. Grant proposals and any questions should be directed to: Shawn Espinosa @ sepsinosa@ndow.org.

This project is intended to improve the understanding on the effects of wildfire on Greater sage-grouse within the Virginia Mountains, located in southern Washoe County, Nevada, and also to determine the effects of long-term raven control efforts on sage-grouse population growth rates.

Research and monitoring efforts in this mountain range began in 2009 with the intent to collect data on sage-grouse before the development of a proposed wind energy development. This development did not advance; however, data collected from the first few years of the project indicated that nest success was very low and that raven predation was the prevalent causal factor. Thus, raven control efforts were initiated in 2014 to determine whether or not this would help improve nest success and ultimately affect sage-grouse population growth rates in a positive manner.

Portions of this project area serve as important sage-grouse habitat during all life stages (breeding, nesting, brood rearing and winter) and several wildfires that occurred in 2016 and 2017 burned a significant amount of these habitats; however, some crucial breeding, nesting and brood rearing habitats (e.g., Spanish Flat) were spared from the fires. Research and monitoring efforts here will add to other ongoing studies regarding the ultimate effect of fires to sage-grouse populations. Understanding the ultimate effects of wildfire to sage-grouse demographic parameters such as adult and juvenile survival, nest survival as well as habitat use and distribution may also help with targeted restoration efforts (e.g. seeding and planting sagebrush) in strategic locations. This monitoring project is expected to span a two to three year period.

Grant Application Instructions

Please refer to scope of work below for details regarding this research project. Proposals should include the following at a minimum:

- Demonstrate qualifications to conduct tasks identified within the scope of work;
- Identification of the project manager and any supporting staff along with a brief description of their qualifications;
- A proposed cost estimate with detail to include: salary, travel, material costs and other anticipated expenses;
- A schedule of activities;
- Submission of the draft report in digital form

Grant Eligibility (must meet all the following criteria)

- Must be a Government Agency, Academic Institution (University) or scientific non-profit institution with offices located in either Nevada or California;
- Specific experience working with Greater Sage-grouse in Nevada and measuring demographic parameters and habitat selection of sage-grouse;
- Must also have prior experience assessing the effects of predator control (specifically ravens) efforts on sage-grouse populations.
Scope of Work

- Capture and radio mark (utilizing GPS satellite transmitters and VHF Transmitters) up to 60 female sage-grouse (15 GPS satellite transmitters and 45 VHF transmitters) over a two year period from 2018 through 2019;
- Capture and band any male sage-grouse encountered during trapping efforts;
- Periodically download and categorize data obtained from GPS satellite transmitters;
- Track VHF marked individual birds by ground or aircraft 2–3 times per week during the nesting period;
- Determine nest initiation dates of each female grouse;
- Identify movement patterns during the nesting season;
- Calculate kernel home-ranges of male and female grouse during the nesting season;
- Within 48 hours of nest fate, measure multiple microhabitat characteristics at each nest site, including total shrub cover, sagebrush cover, perennial and annual grasses, perennial and annual forbs, vertical cover, and horizontal cover (measured at 5, 10, 25, 50, 100 m from nest site);
- Use maps of vegetation types derived from remote sensing data in a Geographical Information System (GIS) to measure habitat characteristics at larger spatial scales;
- Measure the habitat characteristics (field and GIS) at random points that are spatially dependent and independent from the nest site;
- Conduct multi-scale habitat selection analysis using random and used points;
- Conduct raven and raptor surveys at nesting and random areas throughout the study site;
- Determine nest fate of each female grouse and estimate daily nest survival probabilities;
- Estimate the effects of habitat characteristics and predator abundance on nest survival rates;
- Estimate the effects of grouse age and body condition on nest survival rates;
- Track individual birds by ground or aircraft 2–3 times per week during brooding period;
- Conduct brood counts during day and night (spotlights) every 10-d interval through the brood-rearing period to document brood success. Broods with no chicks will be scored unsuccessful and confirmed within 48-hours;
- Conduct habitat measurements (field and GIS) at a subsample of brood locations during day and night and dependent random locations for each 10-day interval;
- Calculate 10-day interval brood survival rate;
- Develop and compare brood survival models that include vegetation characteristics as covariates to identify the effects of vegetation factors;
- Utilize GPS satellite transmitters and information obtained from aerial surveys for VHF marked grouse to determine winter habitat use areas;
- Calculate seasonal and annual survival rates and identify differences between sexes.

Location
The Virginia Mountains are located in western Nevada in Washoe County (see attached map). The project area is approximately 33 miles north of Reno and 11 miles west, northwest of the town of Sutcliffe (located on the west shore of Pyramid Lake). Access is limited and extremely difficult. Only four wheel drive pick-up trucks, jeeps or ATVs can access the upper elevations of the study area.

Contractor Furnished Property and Services
- The contractor shall furnish labor and certain equipment and supplies to perform all work as set forth in the specifications.
NDOW Furnished Property and Services

- NDOW may provide some personnel time to assist with the capture of sage-grouse over the course of the project.