Grant Opportunity-Disturbance Impacts on Migratory Birds

Project sites are located across the Great Basin parts of northern Nevada. Proposals are due no later than close of business March 14, 2014. Grant proposals should be submitted to: info@ndow.org. Questions should be addressed to David Catalano dcatalano@ndow.org this work will support habitat and wildlife projects implemented by the Nevada Department of Wildlife (NDOW).

Grant Application Instructions
Please find below a scope of work for the implementation of wildlife habitat project vegetation monitoring. Your proposal at a minimum must include:

- Proposal text to address how the scope of work will be performed
- 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: anticipated number of labor hours and fully loaded costs by individual, travel costs, material costs and other anticipated expenses
- A schedule of activities
- Submission of the draft report in digital form is acceptable
- Provide detail of past interactions with NDOW projects and personnel

Grant Eligibility (must meet all the following criteria)

- Non-profit organization with offices located in Western Nevada
- Specific experience working with avian species and non-game wildlife habitat restoration in Nevada’s pinyon-juniper woodlands, sagebrush plant communities, and riparian areas. (Specific training will be provided however, experienced personnel will are preferred.)
- Specific experience with the preparation of data analyses and specifically the use of appropriate databases and statistics
- Specific experience with various equipment including global positioning systems (GPS), geographic information systems (GIS), topographic maps, avian survey equipment, field tablet computers, 4-wheel drive vehicles, standard computer programs such as Microsoft Office and the Database for Inventory, Monitoring and Assessment (DIMA)
- Specific experience with implementing statistically robust sampling protocols in remote settings
- Detailed knowledge of Nevada plant species and plant communities and the relationship between the vegetation and wildlife
- Specific experience with supervising personnel crews in remote areas of Nevada for extended time periods
- Proven ability to ID avian species through sight and sound

Scope of Work

This scope focuses on quantifying and characterizing disturbances to migratory birds along linear features (roads, powerlines, rail spurs), particularly those associated with energy or mining projects occurring within shrublands. The purpose of the proposed work is to provide wildlife managers with the information they need in order to most effectively manage development to minimize wildlife impacts. We propose a two pronged approach that combines 1) retroactive analysis of statewide data derived from the Nevada Bird Count (NBC), and 2) targeted field
studies. In addition, the work proposed herein will significantly complement other ongoing work, as described below.

The data analysis component will utilize the entire ten-year data set derived from NBC to examine the relationship between bird distribution and disturbance at a statewide scale, across a variety of habitat types. This data set contains bird data from over 500 different sites, many surveyed in multiple years. With this data set in hand, we will acquire and vet GIS layers defining the locations and extents of linear disturbance, as well as other point disturbance or area disturbance features to the extent possible, and explore their spatial relationships with bird abundance / distribution in a habitat-specific manner. In addition to analyzing bird data as a function of distance from linear disturbance features, we will also examine how the density of linear disturbance features may impact bird populations at a landscape scale. Finally, this analysis will allow us to refine currently-available estimates for the seasonal time frames when different bird species are especially sensitive to disturbances because of breeding activity.

The field study components are necessary to supplement our NBC data set with data from blackbrush (Coleogyne ramosissima) and sagebrush (Artemisia spp.) ecosystems, which currently suffer from low sample sizes. We will employ a combination of point counts and area searches on selected sites where distance from linear disturbance features can be varied in a systematic, replicated manner. In addition, the field study design will include significant surveys in control sites throughout different regions of the state, to ensure that data from disturbance-affected areas can be interpreted in proper context. The proposed study design will allow for a precise analysis of how bird abundance, diversity, and presence of particular species are affected by proximity to linear disturbance features, and how the size of these effects compare to the range of natural variation in bird density. These control sites will also provide a direct contribution to the overall statewide landbird monitoring program (Nevada Bird Count) for sagebrush and blackbrush habitats.

Tasks within the scope of work include:

- Specific experience working with avian survey equipment and protocols including but not limited to the following:
  - Bird species identification by sight and sound
  - Specific avian survey protocols
    - Transects
    - Area searches
    - Raptor surveys
  - Geographic Information System (GIS) use
  - Global Positioning System (GPS) use

- We propose three distinct tasks, as follows:
  - Conduct an intensive analysis of the ten-year NBC data set, using GIS layers describing disturbance features as the primary explanatory factors. This analysis will focus on linear disturbance features as described above, but will include point and area features as well to the extent possible, and will also examine not only proximity to disturbance as an explanatory factor, but density of disturbance at a landscape scale. Additionally, during
this analysis we will derive information relevant to better identifying the seasonal breeding windows of particular concern for specific bird species or species groups. This analysis will focus on shrubland habitats, but will also include reference to other habitat types, including pinyon-juniper woodland, to the extent possible.

- Conduct targeted field work in sagebrush habitat (but as part of our statewide habitat-stratified, random Nevada Bird Count coverage) to characterize the impact of proximity to linear disturbance features on breeding bird distribution, presence, abundance, and diversity. This study design will combine point count and area search approaches, and will include sufficient replication to allow for valid statistical analysis, and a sufficient number control sites to provide interpretational and statistical context and to help support the broader goal of coordinated statewide bird monitoring in sagebrush ecosystems. Specific study sites will be selected in consultation with NDOW, to maximize the opportunities for collecting data of the broadest possible interest and utility.

Conduct targeted field work as above, and as part of our statewide random Nevada Bird Count coverage, with a focus on blackbrush habitat and similar Great Basin / Mojave transitional shrublands.