

U.S. Geological Survey
Fort Collins Science Center
Ecosystem Dynamics Branch
Wildlife Biologist
GS-0486-11

INTRODUCTION

The incumbent serves as a Wildlife Biologist in the Ecosystem Dynamics Branch of the Fort Collins Science Center (FORT), U.S. Geological Survey (USGS), Fort Collins, Colorado. The incumbent conducts work on wild horse and burro population estimation and population dynamics and related biological science.

The FORT mission is to develop, integrate, and provide ecological knowledge to improve the conservation and management of natural resources in interior western landscapes and the nation. The Ecosystem Dynamics Branch contributes to this mission through research on natural resource problems at the landscape and system level. The purpose of the Branch is to conduct research on how natural and anthropogenic processes affect natural systems on public lands.

A. DUTIES

Provides technical assistance to the Bureau of Land Management (BLM) Wild Horse and Burro Program to train field managers on aerial survey techniques developed by USGS. Assists with selection of appropriate survey method for the Herd Management Area or complex, prepares transect maps in a geographic information system (GIS), guides each aerial mission from start to finish, converses with and educates BLM field managers and vendors/pilots on techniques ensuring proper methods are used, flies aerial surveys (without excessive air sickness) with BLM managers on-board to train them, records data and demonstrates paper data reading in flight, manages data after surveys, and either facilitates or conducts the statistical analysis for simultaneous double observer and other population estimation models.

Develops an aerial survey training manual for BLM in a suitable USGS publication format.

Provides input/ideas on ways to improve BLM's wild horse and burro database, which hosts and houses BLM's population survey and gather data.

Designs and implements sampling programs, population estimation and other research studies of wild horses. Initiates new research on population estimation techniques for wild horses and burros. Collaborates with USGS scientists on the development of new methods to count wild horses and burros, and tests new methods.

Analyzes and interprets population data for the Wild Horse and Burro Project.

Prepares reports and manuscripts for peer review in fields of wildlife biology, wild horse and burro ecology, and range ecology.

Prepares and gives presentations of study results and their implications as they relate to refinement of federal policies affecting wild horse and burro management and effects on land use and wildlife habitats.

Collaborates with colleagues in USGS, contractors, and other federal employees in support of task completion. Coordinates and effectively interacts with other Federal Agencies (e.g., BLM, U.S. Forest Service) at County, State, and National levels, private landowners, and representatives of non-government organizations.

Provides technical assistance and expertise to other Branches at FORT, and to managers in the Department of the Interior.

Conducts training in aerial survey techniques.

Operates government-provided vehicles as an incidental driver.

B. FACTORS

FACTOR 1 - KNOWLEDGE REQUIRED BY THE POSITION

Professional knowledge of biological principles, terminology, procedures, methods, and management practices and agency policy and programs in order to organize, schedule, and execute assignments applying the full range of standard and non-routine biological field and office procedures.

Knowledge of aerial survey techniques and demonstrated experience flying aerial surveys for ungulates using simultaneous double observer methodology.

Demonstrated ability to train resource management personnel in the use of aerial survey techniques.

Ability to collect, compile, and analyze biological data applying seasoned judgment and experience in order to modify procedures and methods to obtain accurate results and make non-routine interpretations.

Demonstrated understanding of the statistical theory supporting the simultaneous double observer methodology.

Knowledge of scientific methods sufficient for gathering, analyzing, and interpreting findings, including knowledge of scientific experimental design techniques and strategies, and principles and methods of statistical analysis.

Skill in preparation of scientific study plans and proposals for new research to be submitted to a variety of potential funding sources.

Skill in conducting literature reviews and identifying, extracting, interpreting and summarizing pertinent information from literature and files.

Skill in oral and written communication, particularly technical writing for the preparation of reports or manuscripts for publication of results in scientific journals or other outlets.

Extensive knowledge of data entry software (e.g., Excel, QPRO, Access, or DBASE), statistical packages (e.g., MARK, Distance, R, SAS, SYSTAT, or others), and GIS software.

Demonstrated experience using GIS software to manage and collect data, conduct analyses and develop maps for publication as well as for field use.

Demonstrated experience designing, implementing, and managing databases, particularly using ArcGIS and MSAccess.

Demonstrated ability making recommendations to government agencies regarding land use policy.

Ability to use and develop scripts in R statistical software to perform data analyses.

Ability to plan and carry out administrative and logical aspects of a study plan.

Ability to train and instruct field personnel.

Must possess a valid driver's license.

FACTOR 2 - SUPERVISORY CONTROLS

Formal supervision is provided by the Ecosystem Dynamics Branch Chief, who sets the overall objectives and makes resources available. The Project Chief assigns the specific project work, and in consultation with the employee, develops the priorities and deadlines. The incumbent develops priorities to achieve task objectives, has considerable latitude in carrying out recurring assignments of moderate difficulty, and is expected to select, apply, and adapt standard techniques and procedures necessary to complete the work, schedule the field operations, and assure the quality of the data collected.

Incumbent must make independent decisions regarding successful completion of the field data collection without guidance from the Branch or Ungulate Project chief. Performs work with the responsibility for using trained judgment in determining which questions should be referred to supervisor. Unusual or difficult problems are either not assigned or are resolved by the supervisor before incumbent carries out the assignment. The employee keeps the supervisor and Ungulate Project chief informed of progress, potentially controversial matters, or far-reaching implications. Completed work is

reviewed from an overall standpoint in terms of feasibility, compatibility with other work, and effectiveness in meeting requirements, compliance with policies and work plans, and/or expected results.

FACTOR 3 - GUIDELINES

Guidelines include oral and written instructions, study plans, technical guides, agency manuals, maps, standard operating procedures, policy memoranda, standard scientific and technical reference texts, equipment and instrumentation manuals, and current scientific literature. Since assignments usually involve new requirements or applications, the guidelines have limited applicability, are very general, not directly related to the core problem, or have gaps in specificity. The employee exercises judgment in selecting, interpreting, and applying the guidelines, in addition to extending their applicability to situations not specifically covered.

FACTOR 4 – COMPLEXITY

The incumbent's work requires performing various technical duties that involve differing and unrelated processes and methods. The employee exercises discretion and judgment in selecting from various approaches to planning and conducting the work and in applying conventional methods, approaches, and techniques to new situations. Independently resolves technical and procedural problems encountered in planning, executing, and finalizing assignments.

FACTOR 5 - SCOPE AND EFFECT

The work involves applying conventional, technical, and administrative solutions and practices to a variety of problems. Resultant data directly affects the adequacy of research conclusions that will be used in assessing state and federal conservation policies. Management recommendations may have significant impacts on agencies responsible for land development policy, private industry, conservation organizations, and the general public.

FACTOR 6 - PERSONAL CONTACTS

The incumbent has contact with the supervisor, co-workers, State and Federal biologists and managers, law enforcement personnel, university researchers, conservation organizations, private contractors, students, members of the communications media, and the general public.

FACTOR 7 -PURPOSE OF CONTACTS

Contacts are for the purpose of receiving work assignments, verifying biological information concerning the study-area environment, communicating study results, responding to requests for information, and coordinating field activities. The incumbent's contacts are usually working toward a common goal and generally are reasonably cooperative.

FACTOR 8 - PHYSICAL DEMANDS

The work requires frequent aerial helicopter and fixed wing surveys that must be accomplished without suffering excessive motion sickness, in order to record and collect

detailed data. Travel will be required, estimated to be 20–30% time of this position. The work may involve bending, walking, hiking over rough terrain, carrying up to 40 pounds, and moderate physical exertion. Hand and finger dexterity and physical coordination are required. The work also requires sitting or standing at a desk for long periods to conduct statistical analyses, use GIS, and write with a computer.

FACTOR 9 - WORK ENVIRONMENT

Incumbent works primarily outdoors, and also in an office. The indoor work area has adequate light, heat, and ventilation. The work outdoors brings exposure to adverse weather conditions including rain, snow, heat, and cold. The U.S. Geological Survey has determined that the duties of this position are suitable for telework and the incumbent may be allowed to telework with supervisor approval.