STATE: **MONTANA**
GRANT TITLE: **High Priority Terrestrial Montana Habitats and Wildlife Species SWG Conservation Program**
GRANT NUMBER: **T-37-HM-4, Amendment #1**

PROJECT 1. Riparian/Wetland, Grassland, and Sagebrush Habitat Protection and Conservation

Fish Wildlife and Parks (FWP) conducted restoration efforts on nearly 250 acres of grassland/sagebrush habitat and over 200 acres of riparian/wetland habitat across Montana this past year. Five separate habitat restoration projects were conducted with a diversity of partners ranging from the Montana Department of Transportation and Montana Trout Unlimited to Pheasants Forever.

Milk River: This project area is located northwest of Glasgow directly adjacent to and also directly across the river from the Page-Tampico Conservation Easement (Figure 1). It contains roughly 2 miles of Milk River frontage, and contains two riparian zones composed of deciduous forests of cottonwood, ash, chokecherry, and box elder. The flood of 2011 left rich silt deposits in these zones, and significant cottonwood regeneration has resulted. The purpose of this project was to conserve riparian by allowing natural regeneration following the floods. FWP biologists worked with local landowners to discourage plowing and encourage the use of electric fences to direct grazing activities away from regenerating cottonwoods. Electric fences were purchased and installed to achieve this goal.

Foys Bend: This project area is located on the Foys Bend Conservation Area along the Flathead River in northwest Montana (Figure 2). The purpose of this project was to restore, preserve, and enhance riparian forests and important fish and wildlife habitats by creating deer exclosures and planting several hundred cottonwood and Douglas fir saplings within these exclosures. Natural benefits of restoring riparian habitat along the Flathead River include better water quality, flood water retention, groundwater recharge, decreased soil erosion, and increased habitat for wildlife and aquatic species. Three deer exclosures were constructed and several hundred cottonwood saplings were planted within these. Different treatments were applied to limit grass competition and reduce rodent damage in each of the three exclosures in order to identify the most successful and cost effective restoration methods.

Cree Crossing: The Cree Crossing Wildlife Management Area is a recent FWP acquisition consisting of 245 acres of native Milk River bottom habitat and 155 acres of previously farmed lands in north central Montana (Figure 3). The purpose of this project was to establish shrubs for thermal and security cover and to increase available edge habitat for a diversity of species. Over 2,560 shrubs were planted to enhance the river bottom habitat on this wildlife management area.

Moline Ranch: The Moline Ranch is a perpetual conservation easement of nearly 5,000 acres located in north central Montana (Figure 4). The ranch is a critical link in the remaining native sagebrush grassland breaks habitat of the Arrow Creek drainage. Seeding over 200 acres with native grass and shrub seed will ideally result in reconnecting native habitat pieces within this area while also providing cover and food resources to a diversity of species. The acres restored

through this effort will be protected under existing easement management plans to include implementation of rest rotation grazing.

French Gulch: The French Gulch project area is located within the Big Hole watershed of Western Montana (Figure 5). The purpose of this project was to restore riparian areas of the placer mined reaches of French Gulch (Figure 6). The placer mining has resulted in the stream being disconnected from the floodplain and as a result there is very limited riparian area. FWP partnered with the Big Hole Watershed Committee to begin design work for restoring the impacted reaches of the stream and riparian area. A fine scale topographic map of the floodplain of the stream using LiDAR technology was created and will be used to determine the location and dimensions for floodplain restoration and the quantities of material that will need to be moved to accomplish this restoration.

Managed grazing assessment: Livestock grazing is pervasive and managed by private landowners, federal agencies, and state agencies across the west. Wildlife conservation objectives are often primary considerations in grazing management programs but rigorous science on all the benefits and/or costs of grazing management is lacking. The Natural Resources Conservation Service is leading a west wide Sage Grouse Initiative (SGI), which provides for grazing management on private lands with the intent of benefitting sage grouse. FWP supported Montana State University in its second season of data collection to evaluate the impact of SGI grazing regimes on the food sources of sage grouse and migratory bird species. Specifically, information on arthropod abundance was gathered across a sampling frame stratified by different grazing intensities. Data collection is ongoing.

Land Acquisition: FWP purchased a 700+ acre island in the lower Yellowstone River, about 10 miles west of the Montana-North Dakota border (Figure 7). The property is adjacent to FWP's existing Seven Sisters Wildlife Management Area and is being managed as part of the WMA. Native vegetation on the property includes plains cottonwood, green ash and juniper stands with a mixture of buffaloberry, chokecherry and snowberry thickets. The island has high quality native plant communities in a variety of successional stages from willow covered sandbars to mature cottonwood/ash forests. The property is providing valuable habitat for over 120 vertebrate species documented in the lower Yellowstone River including 12 Montana Species of Concern. Acquisition of this property greatly enhanced habitat connectivity in the area as well as public access to more than a mile of the main stem of the Yellowstone and an additional mile of side channel. This access provides opportunity for hunting, boating, fishing, and wildlife viewing.

PROJECT 2. Species-Based Conservation

Prairie dog and black-footed ferret conservation: FWP continued efforts to identify the highest priority prairie dog complexes in Montana and explore opportunities for landowner incentive or stewardship programs to keep prairie dogs on these complexes. The prairie dog colonies of Choteau County (Figure 8) were visited this year to assess the accuracy of using 2009 National Agriculture Imagery Program (NAIP) photos to determine prairie dog colony presence and colony size *and* to gauge landowner tolerance of prairie dogs in the area. Seven of nine colonies were mapped for a total of 2,241 acres. An additional five small colonies were present within two miles of this complex, but they were not mapped. The majority of all the prairie dog acreage

in this complex was located on state-owned land, but colonies extended onto three privately owned parcels. Permission was not obtained to map all colonies, but many were viewed from county roads and determined to be active. An additional 1,000 acres were estimated in this way. Ferruginous hawks, golden eagles, and burrowing owls were observed at many of the prairie dog colonies.

FWP contributed logistic support to the field trials meant to assess Sylvatic Plague vaccine efficacy in Northeast Montana. Specific efforts are ongoing to 1) measure vaccine/bait uptake in prairie dogs under field conditions, 2) assess and compare prairie dog (and possibly ferret) survival rates in sites with and without vaccine/bait application, and 3) to monitor the occurrence of plague in sites with and without vaccine application. Field work began in May with ten US Fish and Wildlife Service volunteers setting up field sites, distributing baits and collecting data on prairie dog presence. Data collection in ongoing.

Golden eagle conservation: The FWP led Montana Golden Eagle Working Group continued discussions to prioritize monitoring and conservation work this past year. Specifically, the group identified the following objectives; 1) identify trends in golden eagle populations statewide and by Bird Conservation Regions (BCR), 2) assess breeding occupancy rates and reproductive success in Montana and by BCR, 3) estimate demographic rates (i.e., age-specific survival, breeding adult turnover) and leading causes of mortality, 4) identify important habitat use areas, and 5) assess contaminant levels in breeding, migrating and wintering eagles and identify "hot spots" for poisoning, if any.

FWP began tackling objectives #1 and #4 through a small scale golden eagle nest monitoring program. Nest surveys were initiated in habitats at highest risk of wind energy development (Figure 9) as accurate information on nest presence and success has become increasingly important for sound decision making on land use proposals across Montana. A total of 14 aerial survey plots were flown in June and a total of 21 golden eagle nests were observed. Golden eagle young were produced at four of the nests for an average of 1.5 young per nest. At least three territories had active nesting pairs that failed and at least two territories had pairs during the nesting season but no nest was identified. Detection probabilities were suspected to be lower for tree nests with 32% of the nests observed in trees while the remaining nests were on cliffs. More surveys are needed to complete our knowledge of nesting golden eagles in Montana and to better allow us to comment on land use proposals and provide mitigation measures.

Long-billed curlew conservation: FWP worked with Montana Audubon and other partners within the Montana Bird Conservation Partnership to launch the Long-Billed Curlew Habitat Initiative. Basic biological information was compiled, threats to curlews and curlew habitat were identified and conservation opportunities were prioritized (Figure 10). A focal area of the Mission Valley was identified and a best management practices brochure was designed for landowners. Work on this project is ongoing to identify conservation opportunities related to habitat restoration and conservation.

PROJECT 3. Species Survey and Inventory Conservation Activities

All bird monitoring: FWP, in conjunction with Rocky Mountain Bird Observatory, USDA Forest Service, USDI Bureau of Land Management, Northern Great Plains Joint Venture, South Dakota Game, Fish and Parks, Wyoming Natural Diversity Database, Audubon Wyoming, Wyoming

Game and Fish Department, and other partners continue landbird monitoring throughout all of the Badlands and Prairies Bird Conservation Region, and large portions of the Prairie Pothole, Northern Rockies, Southern Rockies and Colorado Plateau, and Shortgrass Prairie Bird Conservation Regions. This Integrated Bird Monitoring by Bird Conservation Region program uses a newly-developed, spatially-balanced sampling design with the Bird Conservation Region as the sampling frame and stratification by land management boundaries and ecoregional attributes. This monitoring design allows inferences about avian species distributions and population sizes from small scales to entire Bird Conservation Regions, facilitating conservation from fine scales to national and international levels. It also provides the baseline data necessary to prioritize habitats for conservation, restoration, and management.

Western Montana Species of Concern monitoring: Two interns and two technicians were hired to assist with nongame surveys and loon management activities in Northwest Montana under the supervision of a nongame biologist. Survey efforts were coordinated across Western Montana with survey crews, area biologists, and interagency staff. Efforts included surveys in subalpine and alpine habitat in the Bob Marshall Wilderness, the Whitefish Range, and the Mission Mountains for species likely to be impacted by climate change. Those species included hoary marmots, pika, white-tailed ptarmigan, bog lemmings, gray crowned rosy finch, and Clark's nutcrackers. Peregrine falcon, bald eagle, golden eagle, common loon, short-eared owl, and long-billed curlews surveys were also completed. Baseline species monitoring was conducted in areas threatened by subdivision or development. All of the above gathered information was used to determine highest priority habitats and properties for conservation work to ensure future habitat availability and connectivity for these species. Equipment was purchased to ensure the most efficient data collection possible for species of greatest inventory need.

Species specific monitoring: Black swifts are one of the least studied neo-tropical migrants in Montana and considered at "high risk" because of extremely limited population and/or habitat in Montana. In Montana, the black swift is classified as a high priority Species of Concern (S1) and a species in need of inventory. FWP surveyed seven probable locations in Northwest Montana to determine occupancy. Two new colonies were discovered making for a total of six known colonies in Montana.

The northern bog lemming is globally ranked as "apparently secure", but may be rare or possibly declining in parts of its range. In Montana, the bog lemming is considered "at risk" due to very limited and/or potentially declining population and/or habitat. The USDA Forest Service lists it as a "sensitive" species and FWP considers it a Species of Concern (S2). Northern bog lemming surveys were conducted in Northwest Montana at six previously occupied sites. Sites were trapped for approximately 800 trap nights excluding Hawkins pond where all stations were removed when a northern bog lemming was captured. Two northern bog lemmings were detected at one site out of a total of 4,119 trap nights. Sherman live-traps and scat plates were used but the question remains as to whether snap traps may be a more efficient method to detect presence.

The Coeur d'Alene salamander is a Montana Species of Concern (S2) that requires targeted surveys for monitoring. Sixty-six salamanders were detected at 35 of 45 sites surveyed. We surveyed 30 known locations documented by the Montana Natural Heritage Program, 13 new sites within the established range, and two sites outside of that range. Future surveys are needed to detect local extirpation within the limited range of this salamander.

Variance

Mountain Plover Monitoring: FWP decided not to implement a third year of mountain plover monitoring following analysis and review of the 2011-2012 data. Plovers were detected on only 18 surveys in 2011 and only 7 surveys in 2012 even though methods and sampling were refined in attempts to improve detection rates between the survey years. The 2012 survey locations were generally in more suitable habitat and surveyors had more flexibility in selecting the exact survey location. FWP determined that implementing a third year of monitoring, even with further improved techniques, would not meet the original project objectives; 1) estimating occupancy rates and detection probabilities across the state in known and predicted mountain plover habitat, 2) estimating landscape and habitat covariates associated with mountain plover occupancy, 3) estimating density of mountain plovers in core and, if possible, predicted habitat across the state, 4) estimating trends in occupancy by habitat across the state, and 5) estimating trends in abundance/density in core areas. FWP has determined that the cost of meeting these objectives is too prohibitive at this time but may be prioritized within budgets if conservation concerns for mountain plovers increase.