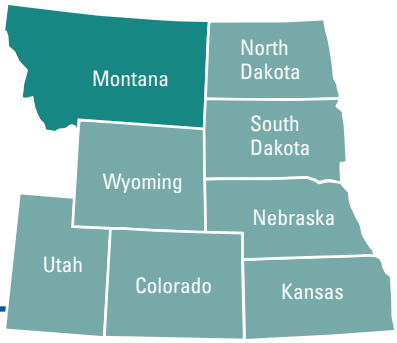
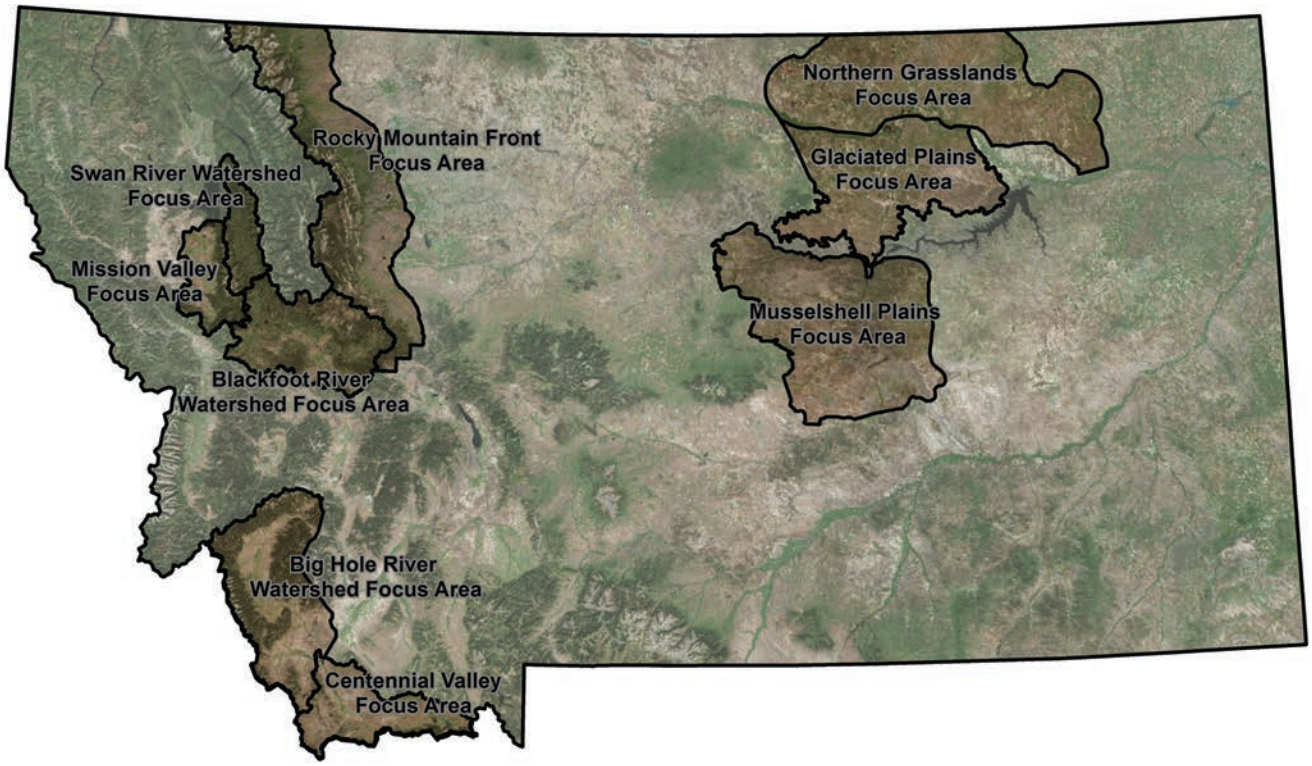
Montana





Montana PFW program Focus Areas. USFWS map.

Introduction and Overview

The Montana PFW program (MT PFW) began discussing the merits of conservation focus areas in the mid-1990s. In 1999, the MT PFW program developed its first strategic plan using intact habitats and proximity to National Wildlife Refuges as the basis for selecting conservation focus areas. This process led to the selection of 7 Conservation Focus Areas (CFA) covering approximately 30% of the lands in Montana.

During Fiscal Year 2007, the Montana Step-Down Strategic Plan refined the conservation planning process. The 2007 Plan (covering the years 2007–2011) identified geographic planning areas, selected priority focal species for each geographic planning area, analyzed biological models and incorporated other scientifically based conservation plans. The processes also included a robust in-reach and out-reach effort. This led to the selection of 10 CFAs encompassing 11% of the private lands in Montana.

For the 2012–16 planning cycle, the MT PFW program developed a 10-step approach for selecting CFAs. The ten steps identified geographic areas for basis of the planning, selected focal species, analyzed biological models, identified overlap in other conservation plans, assessed landscape intactness, identified existing community-based conservation groups, evaluated potential threats that led to selecting CFAs. This process also led us to 10 CFAs and increased the amount of private lands covered to 13%.

The 2017–2021 planning process relied heavily on the previous three strategic plans for the MT PFW program. We again adopted a ten-step process for our prioritization; however, this fourth iteration of the MT PFW plan has a significant emphasis on species population/range within Montana. This shift of emphasis to focal species populations is based on two primary objectives/principles. The first is to be consistent with the Service Strategic Habitat Conservation model where selecting focal species and understanding their population dynamics is fundamental. Secondly, if we are going to positively affect the populations of focal species, then we need to be working in landscapes that support a large percent of the species population.

One of the other significant changes in the 2017–2021 MT PFW Strategic Plan is the inclusion of a monitoring framework based off of

Jones Lake in the Blackfoot Valley of Montana. Photo by Joe Milmoe, USFWS.

our focal species. The monitoring component links our habitat goals for our focal species to biological outcomes at the Focus Area landscape. This new addition of monitoring is key for completing the loop in Strategic Habitat Conservation.

2017–2021 Ten-step CFA Approach

1. Service focal species
2. Percent of species population/ range in Montana
3. Is there enough Strategic Habitat Conservation data available for a given species
4. Private/public ownership
5. Social and political considerations
6. Prioritize species in a tiered format
7. Anaylze priority habitat for Tier I species
8. Landscape scale assessment of multiple species
9. Threat analysis
10. Select final Conservation Focus Areas

The 2017–2021 Strategic Planning process begins with selecting focal species that will be the basis of our on-the-ground conservation work. We developed a list of potential focal species using six different sources including: federally threatened and endangered species, Federal Trust Species; Montana Fish, Wildlife & Parks (MFWP) Species of Concern; Service Director's 2016 Priorities; Service Regional Director for the Mountain Prairie Region 2016 Priorities; and Service Refuge Chief for the Mountain Prairie Region 2016 Priorities. Only those species that occur in Montana from the above sources were used as part of this process.

We then evaluated each of the potential focal species based on the percentage of their known populations or range that occurs in Montana. After evaluating the proportion of each species population and range in Montana, selection of 10% or greater was determined to be a natural break for selection of a focal species. For many species we have breeding population numbers associated with the individual species. An example for known population is Sprague's pipit, where 26% of the global breeding population occurs in Montana (Lipsey 2015). For those species where we didn't have population level data, we relied on the best available information related to percentage of range of the species habitat that occurs in Montana. Canada Lynx is an example where we don't have a solid population number occurring in Montana, but we have the species range in the form of designated critical habitat. The Service designated critical habitat for this Distinct Population Segment (DPS) shows 33% of the species range occurs in MT (Service 2015).

The third step in the process involves evaluating data availability for each potential focal species based on the Strategic Habitat Conservation model. In order for a species to be considered as a focal species we must be able to answer these four data questions:

1) Is there spatial population/range data available at a statewide basis that will allow prioritization for on-the-ground conservation efforts to affect the largest percentage of the population?

2) Is there enough scientific data available that documents the threats to an individual species?

3) Can we link threats to conservation measures for implementation of on-the-ground conservation to alleviate those threats?

4) Is there long-term (greater than 5 years) population trend data available for the given species within Montana, and will that data be collected for at least the next 5 years?

The fourth step in the process is evaluating the spatial population/range data available for the potential focal species to assess what proportion of the population or habitat is occurring on privately owned lands in Montana. The PFW program can only work on private or tribal lands for our on-the-ground conservation activities. In some cases we have species or distinct population segments for a species that occur primarily on public lands. In our Strategic Plan we want to document those, but understand that it will need to be a different program or entity that works on conservation delivery in those cases. An example of this would be Bull Trout in the Saint Mary's DPS on the Rocky Mountain Front of Montana. The threats (fish passage and fish entrainment) associated with this DPS are either largely on public lands or are associated with a federal (Bureau of Reclamation) irrigation diversion.

The fifth step involves assessing whether a specific species has any special political or social challenges associated with selecting it as a focal species and focusing on-the-ground conservation projects during the next five years. In private lands conservation we need to be able to sell the product (species) at a landscape scale if we are going to be able to affect the population of that given species. With a small number of species, current political and social acceptance will hinder accomplishments and positive impacts to the species. An example is black-footed ferret, the species ranks high in every other category, but it's not politically or socially accepted across the landscape at this time. The MT PFW program will work with individual landowners on projects for these species but we will not select landscapes for our work based on this. These species will be reevaluated as part of our next strategic planning process.

Chestnut-collared longspur. Photo by John Carlson.

The sixth step involves placing each of the individual species into a five-tier format. Tier I Focal species are those species that we can answer yes to on all five of the categories above. Tier IIA – Secondary Species are those species that we can answer yes for questions 1–4 above but not step 5 (see step 5). Tier IIB – Secondary Species are those species where less than 10% of their population occurs in Montana, but that portion that does occur in Montana occurs in a concentrated area where we believe we could have an effect on the population. Tier III – Data Needs or science needs are those species where the necessary SHC data isn't available to select them as a Tier I or II Species (see step 3). Tier IV – Limited Private Lands Responsibility as it relates to the MT PFW program abilities to effect the overall population an individual species on private lands verses public lands (see step 4). Tier V – All other species are those species where less than 10% of the population occurs in MT and they are not covered under Tier IIB.

Focal species Tiers

I. Focal Species
II. Secondary Species
    A. Special political and social challenges
    B. Low MT responsibility but locally important areas
III. Data Needs
IV. Limited Private Lands Responsibility
V. All Other Species

The seventh step in the process is analyzing priority habitat for Tier I Focal species. For each of the Tier I species we assessed the species distribution and population densities then mapped what we are calling priority habitat. Priority habitat varies from species to species and is data driven. In all cases we reached out to the experts for each Tier I species for selecting the parameters around priority habitat. Two examples are westslope cutthroat trout (Fig. 1) Conservation Populations in Montana (MTFWP 2015) and

Tier I	Tier II	Tier III	Tier IV	Tier V
Arctic Grayling	Black-footed Ferret - A	Wolverine	Pallid Sturgeon	Gadwall
Grizzly Bear	Piping Plover - B	Greater Sandhill Crane		Brewer's Sparrow
Bull Trout	Whooping Crane - B	Canada Lynx		Blue-winged Teal
Trumpeter Swan		Long-billed Curlew		Golden Eagle
McCown's Longspur				Sage Thrasher
Westslope Cutthroat Trout				Sagebrush Sparrow
Baird's Sparrow				Monarch Butterfly
Sprague's Pipit				Least Tern
Northern Pintail				White Sturgeon
Mallard				Norther Long-eared Bat
Yellowstone Cutthroat Trout				Red Knot
Greater Sage-grouse				Mountain Plover
Northern Shoveler				

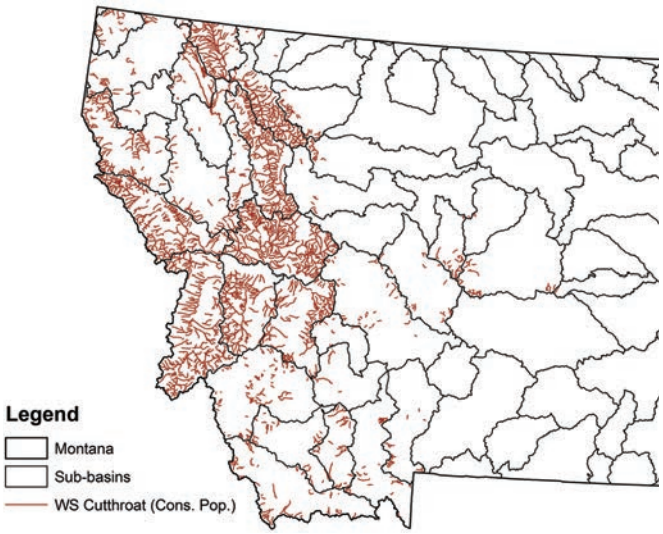


Figure 1. Westslope Cutthroat Trout.

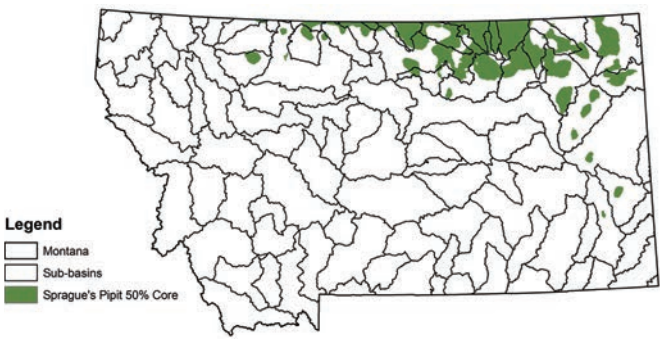


Figure 2. Sprague's Pipit.

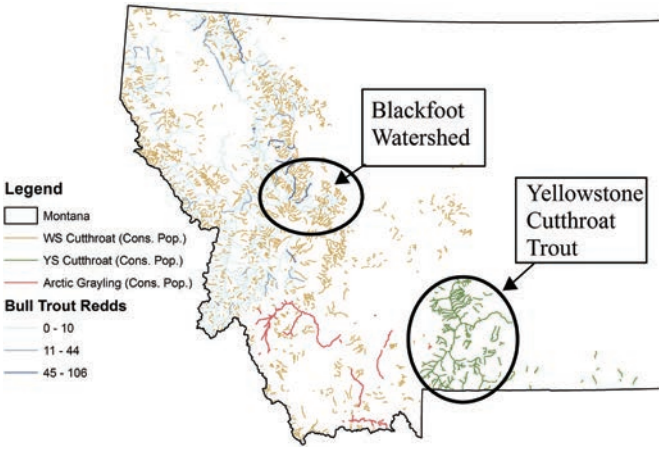


Figure 3. Native Fish Overlap.

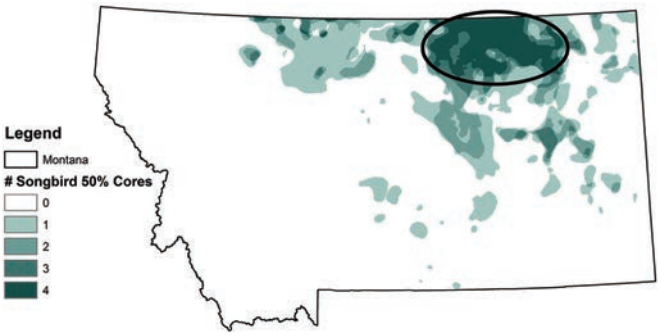


Figure 4. Grassland Bird Overlap.

Figure 5. MT PFW Draft Focus Areas.

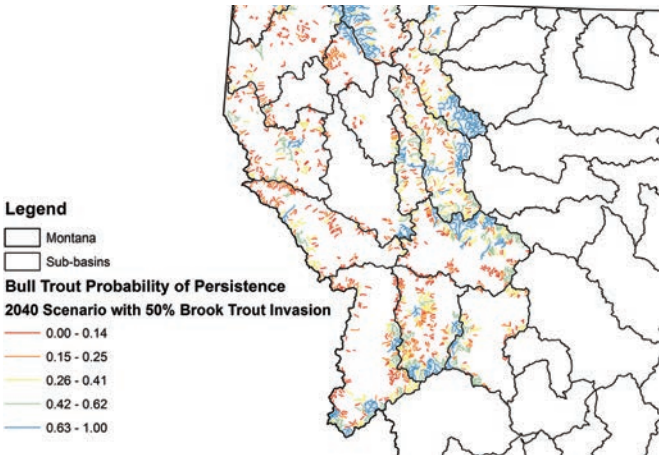


Figure 6. Climate Shields Model (Service 2014b).

Sprague's pipit 50% of the Montana population Core Areas (Fig. 2; Lipsey 2015).

The eighth step involved landscape scale assessments of grouping multiple species priority habitats. This assessment helped identify landscapes that benefit multiple species. During this process, we were careful not to put too much emphasis on overlapping regions where we were no longer focusing conservation efforts in the best places for individual species. Figure 3 displays the overlap of the four native fish species that are Tier 1 Focal Species. In many cases, we did not find direct overlap of priority habitat for those focal species (e.g., Yellowstone cutthroat trout). However, both bull trout and westslope cutthroat trout in the Blackfoot River watershed had direct overlap of high priority habitats. Figure 4 displays the 50% Core Areas for the four grassland birds that are Tier I Focal species. As with native fish, several areas were important to a single bird species. However, the area north of the Missouri River extending to the Canada border highlights a large area where high priority habitats occur for all four species.

Assessing priority habitat for individual Tier I Focal species (step 7) as well as suites of Tier I Focal species (step 8) was the basis to populate our draft focus areas as shown in Figure 5. The draft map highlights 25 potential focus areas covering 28.3 million acres or approximately 30% of the land ownership in Montana. In this final step we also evaluated what percentage of each species population occurs within each of the individual Draft Focus Areas. For example, the Northern Grassland Focus Area covers 44% of the Montana population of Sprague's pipit habitat.

The ninth step involved evaluating potential threats and assessing landscape intactness for Tier I Focal Species and the draft priority Focus Areas. Threats to individual species were evaluated with available scientific data. Examples include climate change models for bull trout (Fig. 6) and cropland suitability for grassland birds (Fig. 7). Overlaying priority habitats with potential threats allowed us to assess the potential for long-term persistence of the individual or suites of species but it also helps prioritize focus areas that are still functional but the threat is imminent.

The ninth step also involved assessing landscape intactness from the perspective of ecological sustainability. One of the tools we used was the Human Footprint model (Fig. 8) developed by Leu et al. (2008). This data set looked at a variety of human activities on the landscape and ranked them from

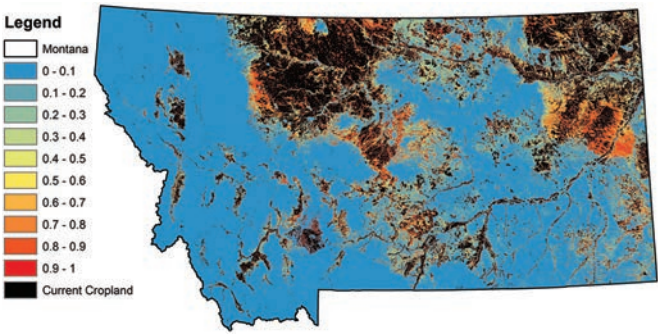


Figure 7. Cropland suitability (Smith et al. 2016).

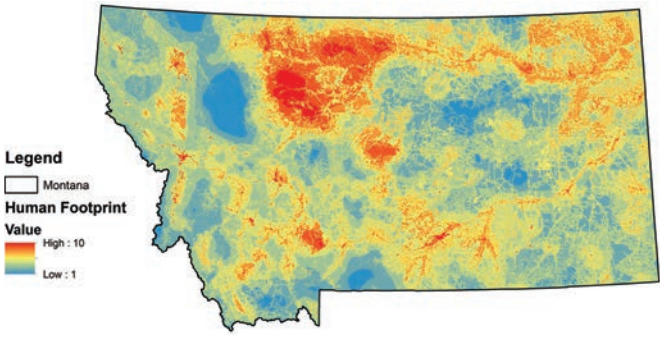


Figure 8. Human Footprint (Leu et al. 2008).

1-10 with 10 having the greatest footprint or impact. Priority habitats that ranked higher then 5.0 were consider highly fragmented and no longer functioning in an ecological sustainable way.

The tenth and final step was selecting the final set of Focus Areas based on the nine steps outlined above. Considerations were also given to present and projected budget and realistic staff levels expected during this planning timeline. Figure 9 shows our final Focus Areas for 2017– 2021. The nine Focus Areas highlighted on the map include 17.9 million acres or 19% of the total land area in Montana. The private lands component within the final Focus Areas is 9.1 million acres or 15% of the private land in Montana.

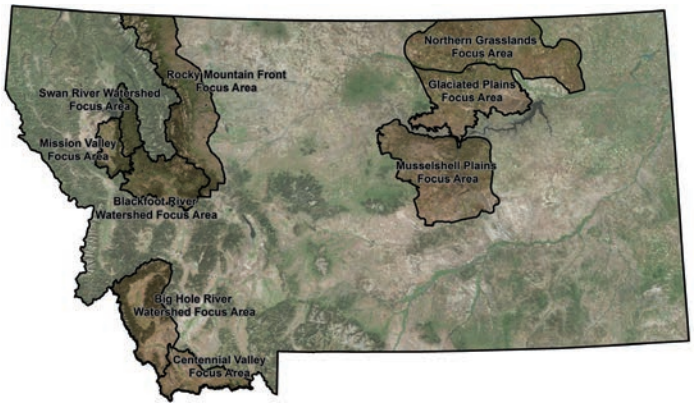


Figure 9. Montana PFW program Focus Areas for 2017–2021.

Monitoring

In 2014, the MT PFW program brought together over 50 conservation professionals from numerous agencies and conservation groups to discuss monitoring and evaluation of focal species based on habitat implementation. Included in the group of conservation professionals were key science leaders that assisted with selection of MT PFW Focal species. The conservation professionals identified the highest priority for biological monitoring as species response at the landscape scale to habitat implementation at the site scale. The conservation professionals had lengthy discussions about the scale of conservation and temporal responses from different species to habitat implementation.

Understanding the difference between site scale and landscape scale is a key process in evaluation of on-the-ground conservation efforts (Poiani et al.1998). Site scale is described as an individual on-the-ground restoration and management activities for a specific focal species (Lindenmayer et al. 2002). In the simplest term it is where our boots hit the ground on individual projects such as wetland, instream, riparian or grassland restoration. Site scale also covers individual enhancement activities such as grazing management, riparian and wetland enhancements. Site scale monitoring is further described under Level II Monitoring.

Effective conservation planning must clearly define biologically relevant landscape elements

Order	Definition	Site Scale	Landscape Scale
First	Geographic Range of Species		X
Second	Population or Sub-Pop. within the Range of the Species (Distinct Population Segment [DPS])		X
Third	Home Range of Species	X	X
Fourth	Nesting, Spawning, Rearing, Feeding or Roosting	X	

Table 1. A unifying framework for determining the appropriate scale at which to be monitoring on-the-ground implementation projects.

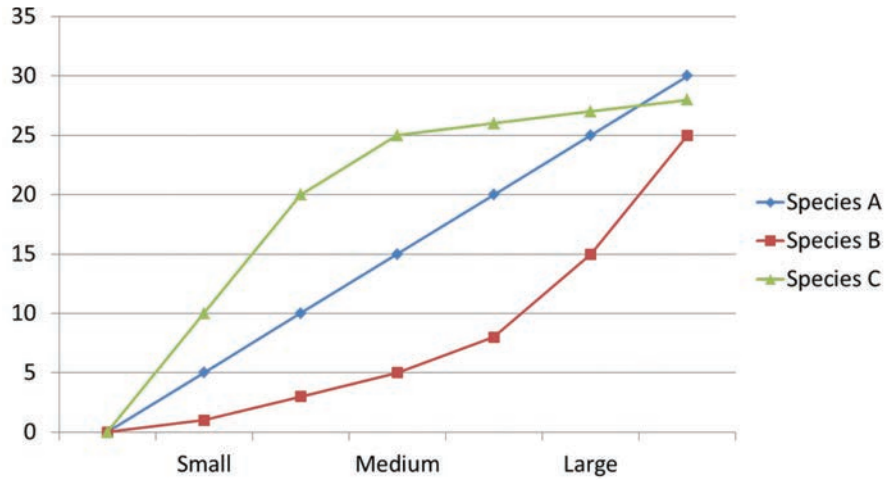


Figure 10. Graph depicting a conceptual temporal response (lag effect) to three hypothetical species based on the amount of habitat that needs to be implemented within a landscape.

for planning at the appropriate scales (Sanderson et al. 2002). Recent developments in landscape conservation are beginning to link spatial patterns and ecological processes at broad spatial and temporal scales (Turner 2001). Breaking down the size of spatial patterns and temporal scale is key to answering the question of size and time for evaluation of conservation efforts on a landscape scale. Hierarchical ordering of selection processes by individual species begins to resolve the question of spatial scale for individual species (Johnson, 1980; Table 1).

Use of this hierarchical ordering process for individual species will help determine at what order monitoring should be done based on projected habitat accomplishments over a period of time (Table 1). This process will be species specific and will be in each appendix for the individual species. In most cases, landscape scale monitoring will be completed at the population or sub-population for the species (Second Order) or at the home range of the species (Third Order).

Assessing the temporal response of individual species from on-the-ground habitat implementation projects is highly variable. Generally, wildlife processes operating at relatively small spatial scales (site scale) occur over short periods of time, whereas processes at large spatial scales (landscape scale) take place over long periods of time (George 2001). Unlike site scale, biological monitoring where five years may be long enough to identify trend information on a specific species, landscape scale monitoring has more variables and will likely require monitoring over a longer time frame. The MT PFW program will begin to develop power analyses for certain species to assess timelines needed to detect changes resulting from implementation. The two key variables are the amount of habitat within the landscape that needs to be restored or managed and the individual species biological response time to the habitat work.

Landscape Scale Impact

The rate of a species or population response to habitat implementation projects will vary with its patterns of distribution, reproductive rates and life history strategies (Flather 2002). The ability of a monitoring program to detect responses also depends strongly on the program's sampling design. To determine time horizons necessary to detect changes at the site and landscape scales, the MT PFW program will use the best available knowledge for each focal species to estimate rates of biological response and combine these with a power analysis for monitoring design. When possible, power analysis will be used to optimize the sampling strategy to balance maximum detectability of changes against the cost of data collection. In the absence of data to inform more detailed analysis, the MT PFW program suggests that biological monitoring should continue for a minimum of 5 years at the site scale and 20 years at the landscape scale.

The above background information combined with the following literature reviews were the foundation used to develop the monitoring goal and monitoring framework: Big Hole Arctic Grayling Strategic Habitat Conservation Plan (Service 2014), Revised Draft Recovery Plan for the Coterminous United States Population of Bull Trout (Service 2014), Northern Continental Divide Ecosystem Grizzly Bear Conservation Strategy (NCDE 2013), North American Waterfowl Management Plan (Service 2012), Northern Great Plains Piping Plover Recovery Plan (Service 1988), Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool (Stiver et. al. 2014), Rocky Mountain Population of Trumpeter Swans Pacific Flyway Implementation Plan (Service 2002), and Fisheries Investigations in the Big Blackfoot River Basin, 2011-2012 (MTFWP 2013) were the foundations.

Monitoring Goal: Link Habitat/ Biological Outcomes at the Site Scale to Biological Outcomes at the Appropriate Landscape Scale Over-time.

From this goal, the MT PFW program has developed three levels of project monitoring that will be completed for each Focal Species in each of the Conservation Focus Areas. Monitoring will be completed by either existing MT PFW staff or with reliance on our internal and external partners.

Level I Status Review

Level I Status Review monitoring will be a site-specific monitoring effort to inspect every project upon completion to ensure that the structure and function of the project is sound and built to the specifications laid out in the Private Landowner Agreement (PLA).

Big Hole River, Montana. Photo by Greg Neudecker, USFWS.

Beginning in FY2017, MT PFW staff will complete a standardized Region 6 PFW Status Review (SR) form for each newly finished PFW project. The SR form will be completed before the payment process is initiated and the SR form will be submitted to the state MT PFW Office as part of the payment initiation request. Completed SR forms will be incorporated into the official landowner file at the field level and also attached to the landowner agreement copies retained at the state MT PFW office.

Level II Site Specific Monitoring

Level II is monitoring of individual on-the-ground restoration and management activities that assesses the effectiveness of that site scale project. Level II monitoring is further broken out into two separate categories.

IIA. Biological monitoring for the Focal Species at the site scale. The type of biological monitoring at the site scale will be species specific and dependent on data availability, with consideration of time and resources.

IIB. Habitat monitoring for the Focal Species at the site scale. If habitat is used as the preferred monitoring tool at the site scale, habitat monitoring will be linked to the identified limiting factors (threats) of the Focal Species.

For each site scale (Level II) project monitored, we will address threats to the species, goals to address threats, conservation practices implemented, habitat outcomes and biological outcomes. This information is in the attachments and is broken out by species.

If appropriate for the Focal Species and when time and resources are available, biological monitoring will be the priority over habitat monitoring. Monitoring will occur on a minimum of one new project each year for each of our Focal Species in each of our Conservation Focus Areas. Biological monitoring at the site scale will occur for a minimum of five years after completion of the on-the-ground project for the sites selected for monitoring. Monitoring for each Focal Species in each Conservation Focus Area may vary and will be addressed in length in the attachments of this plan.

Level III Landscape Scale Monitoring

Level III monitoring is described as monitoring an area larger than the site scale to obtain a biological objective for a species over a minimum of 20 years. Level III monitoring is further broken out into two separate categories.

IIIA. Biological monitoring for Focal Species at the appropriate landscape scale over-time. The type of biological monitoring at the

Northern Grasslands Focus Area, Montana. Photo by Marisa Sather, USFWS.

landscape scale will be species-specific and dependent on data availability, with consideration of time and resources.

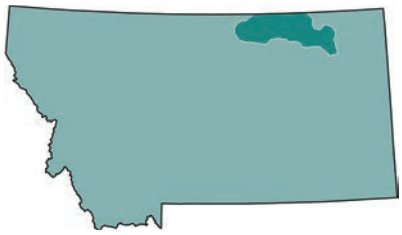
IIIB. Habitat monitoring for the Focal Species at the appropriate landscape scale over time. Habitat monitoring at the landscape scale will be linked to the identified limiting factors (threats and stresses) of the Focal Species.

Biological monitoring at the landscape scale will be required for all priority Focal Species in their identified Conservation Focus Areas. Biological monitoring will be done at the appropriate scale and will be repeatable and completed over a long period of time (minimum of 20 years) to assess the effectiveness of conservation implementation activities on the selected priority Focal Species. The MT PFW program acknowledges there are many other factors at play than just habitat restoration and management as it relates to a species response at the landscape scale to conservation. Long term data collection and basic understanding of the effect of other threats outside of the control of the MT PFW program will be critical in assessing biological outcomes associated with on-the-ground conservation.

Habitat monitoring at the landscape scale will not be completed for all Focal Species in all Conservation Focus Areas. When habitat monitoring is completed at the landscape scale it will be in addition to the biological monitoring being completed at the landscape scale.

For landscape scale (Level III) monitoring, we will address threats to the species, goals to address threat, conservation practices implemented, habitat outcomes and biological outcomes. This information is in the attachments and is broken out by species.

Northern Grasslands Focus Area



North of the Milk River in northeast Montana, rich glacial soils underlie a vast landscape of productive, rolling grasslands. Today, this region represents one of the best remaining examples of northern mixed-grass prairie in the world. Bordered by intact Canadian prairies to the north and intact shrub-steppe to the south (see section on Montana's Glaciated Plains), the Northern Grasslands focus area contains nationally significant populations of target waterfowl species and boasts the highest densities of priority grassland songbird species in the U.S. Strong ranching traditions in the local community built on a base of publicly-owned lands have

Sprague's pipit (left) and McCown's longspur. Photos by John Carlson.

allowed this grassland landscape to persist in spite of pressures from rapidly encroaching land-use change.

The Northern Grasslands Focus Area today remains a critically important landscape for numerous Federal Trust Species of high conservation concern including greater sage-grouse, Sprague's pipit, Baird's sparrow, McCown's longspur, chestnut-collared longspur, long-billed curlew, and numerous waterfowl species. The Northern Grasslands also provide a key linkage corridor for greater sage-grouse and pronghorn antelope populations that migrate from Canada to winter farther south. The Northern Grasslands Focus Area encompasses about 3.5 million acres. Land ownership is a mixture of private land, Bureau of Land Management (BLM), tribal land (Fort Peck Assiniboine and Sioux Tribes), State school section lands, National Wildlife Refuge lands (Bowdoin NWR) and Waterfowl Production Areas, and private non-profit conservation lands. Ownership is comprised of 67% private land and 33% public land.

Key partners in the Northern Grasslands include; MFWP, BLM, TNC, NRCS, DU, Tribes and private landowners. North American Wetland Conservation Act (NAWCA) funding has been an important conservation delivery funding source for habitat projects in the Northern Grasslands.

PFW activities will concentrate on restoring and enhancing native prairie habitat and wetlands for Tier 1 Focal Species. Under the MT PFW Focal Species criteria; eight Tier 1 species have been selected for the Northern Grasslands. The site specific plan developed for the Northern Grasslands will link habitat projects to explicit population objectives for these eight species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Northern Grasslands Focus Area Tier 1 Focal Species

- Sprague's pipit
- Baird's sparrow
- McCown's longspur
- Chestnut-collard longspur
- Greater sage-grouse
- Northern pintail
- Mallard
- Northern shoveler

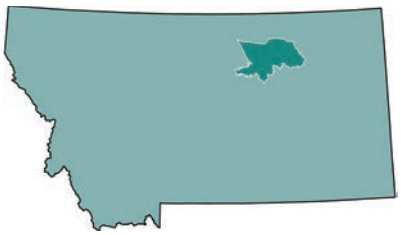
Northern Grasslands Focus Area Habitat Targets

- Wetland Acres Restored/Enhanced: 1,000 acres
- Upland Acres Restored/Enhanced: 10,000 acres
- Riparian Restored/Enhanced: 3 miles
- Fish Passage: 0

Northern Grasslands Focus Area Partnership Targets

- Private Landowner Agreements: 30
- Partnerships: 180
- Cost-share: 2:1
- Technical Assistance: 125 total staff days

Glaciated Plains Focus Area



The Glaciated Plains Focus Area, an extensive region in north central Montana, is characterized by undulating plains dominated by sagebrush and mixed-grass native prairie. Large river systems include the Milk and Missouri Rivers with smaller prairie streams and accompanying riparian habitat are scattered through drier uplands. Moderate to high densities of pothole-type wetlands are scattered across the focus area. Important migratory bird species found in the Focus Area include; mountain plover, burrowing owl, greater sage-grouse, ferruginous hawk, chestnut-collared longspur, McCown's longspur, Sprague's pipit, Baird's sparrow, and long-billed curlew. Livestock production and some limited farming are the primary land-uses.

The Glaciated Focus Area encompasses about 2.4 million acres. Land ownership is a checkerboard of public and private lands. Charles M. Russell National Wildlife Refuge lies at the southern boundary of the Focus Area and BLM manages numerous large allotments. The Matador Ranch, a 60,000 acre preserve owned by TNC, lies in the heart of the focus area. Private ownership is dominated by large working ranches. Ownership is 47% private and 53% public lands.

Glaciated Plains Focus Area, Montana. Photo by Ken Plourde.

Members of the Rancher's Stewardship Alliance. Photo by Brian Martin.

Key partners in the Glaciated Shale Plains Focus Area include; The Rancher Stewardship Alliance, MFWP, NRCS, BLM, TNC, DU, and private landowners.

PFW activities will concentrate on restoring and enhancing native prairie habitat and wetlands for Tier 1 – Focal Species. Under the MT PFW Focal Species criteria; eight Tier 1 species have been selected for the Glaciated Plains. The site specific plan developed for the Glaciated Plains will link habitat projects to explicit population objectives for these eight species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Glaciated Plains Focus Area Tier 1 Focal Species

- Sprague's pipit
- Baird's sparrow
- McCown's longspur
- Chestnut-collard longspur
- Greater sage-grouse
- Northern pintail
- Mallard
- Northern shoveler

Glaciated Plains Focus Area Habitat Targets

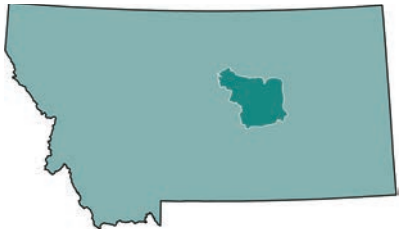
- Wetland Acres Restored/Enhanced: 250 acres
- Upland Acres Restored/Enhanced : 15,000 acres
- Riparian Restored/Enhanced: 3 miles
- Fish Passage: 0

Glaciated Plains Focus Area Partnership Targets

- Private Landowner Agreements: 25
- Partnerships: 150
- Cost-share: 2:1
- Technical Assistance: 145 total staff days

Greater sage-grouse. Photo by John Carlson.

Musselshell Plains Focus Area



The Musselshell Plains Focus Area is located south of the Missouri River in central Montana at the mouth of the Musselshell River. The name Musselshell comes from the mussel shells found in the river of which Lewis and Clark are credited with naming. The Musselshell Plains Focus Area lies south of Charles M. Russell National Wildlife Refuge and contains important habitat for greater sage-grouse, baird's sparrow and chestnut collared longspur.

Strong ranching traditions in the local community built on a base of publicly-owned lands have allowed this sagebrush/grassland landscape to persist in spite of pressures from rapidly encroaching land-use change.

The Mussel Plains Focus Area is located within three separate greater sage-grouse Priority Areas for Conservation (PACs) and have significant core habitat for both Baird's sparrow and chestnut collared longspur. The landscape also lies at the southern edge of a key linkage corridor for greater sage-grouse and pronghorn antelope populations that migrate from Canada to winter. The Musselshell Plains Focus Area encompasses about 3.4 million acres. Land ownership is a mixture of private land, BLM, State school section lands, and National Wildlife Refuge lands (CMR NWR and Satelite Refuges). Ownership is comprised of 67% private land and 33% public land.

Key partners in the Musselshell Plains include; MFWP, BLM, TNC, NRCS, Montana Association of Conservation Districts and private landowners. This is a new focus area for the MT PFW program so we anticipate numerous other partners both technically and financially in the coming years.

PFW activities will concentrate on restoring and enhancing native prairie habitat for Tier 1 Focal Species. Under the MT PFW Focal Species criteria; three Tier 1 species have been selected for the Musselshell Plains. A site specific plan will be developed for

Sagebrush landscape of central Montana. Photo by Joe Smith.

the Musselshell Plains that will link habitat projects to explicit population objectives for these three species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Baird's sparrow. Photo by John Carlson.

Musselshell Plains Focus Area Tier 1 Focal Species

- Baird's sparrow
- Chestnut-collared longspur
- Greater sage-grouse

Musselshell Plains Focus Area Habitat Targets

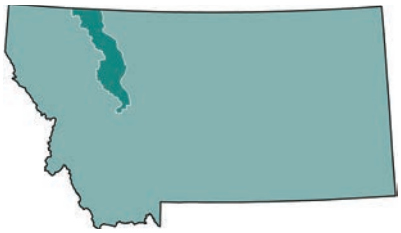
- Wetland Acres Restored/Enhanced: 100 acres
- Upland Acres Restored/Enhanced: 6,000 acres
- Riparian Restored/Enhanced: 2 miles
- Fish Passage: 0

Musselshell Plains Focus Area Partnership Targets

- Private Landowner Agreements: 15
- Partnerships: 60
- Cost-share: 2:1
- Technical Assistance: 125 total staff days

Crawford Ranch within the Rocky Mountain Front Focus Area. USFWS photo.

Rocky Mountain Front Focus Area



The Rocky Mountain Front Focus Area is a spectacular and expansive landscape at the juncture of the Rocky Mountains and the western margin of the Northern Great Plains. The abrupt change from rolling native grasslands to rugged mountain topography produces significant elevation and climatic gradients, creating amazing species and habitat diversity. The transition from alpine tundra and montane forest to foothills and mid-grass prairie includes incredible stream and riparian habitat. Glaciated wetlands are scattered throughout the Rocky Mountain Front. The species diversity is remarkable. This Focus Area includes some of the best remaining grizzly bear habitat in the lower-48 states. Livestock ranching has been the primary land-use since settlement.

The Rocky Mountain Front Focus Area encompasses about 2.9 million acres. This focus area is a mixture of public and private land, including Service Waterfowl Production Areas; MFWP Wildlife Management Areas and Department of Natural Resources and Conservation lands; Blackfeet tribal lands; TNC and Boone and Crockett Club's private preserves; and privately owned ranch and farm land. Ownership is 55% private and 45% public.

Key partners in the Rocky Mountain Front Focus Area include the USDA - Forest Service, USDA - NRCS, Blackfeet Nation, MFWP, MT Department of Natural Resources and Conservation, TNC, county conservation districts, four county weed control districts, the Sun and Teton Watershed groups, the Rocky Mountain Front Weed Roundtable, the Boone and Crockett Club, and the North American Wetlands Conservation Act program.

PFW activities will concentrate on restoring and enhancing riparian, wetland and upland habitat as well as conflict abatement projects for Tier 1 – Focal Species. Under the MT PFW Focal Species criteria; two Tier 1 species have been selected for the Rocky Mountain Front. A site specific plan for the Rocky Mountain Front will link habitat projects to explicit population objectives for these eight species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Landowners Lisa and Mike Bay overlooking a Montana PFW program riparian enhancement project. USFWS photo.

Rocky Mountain Front Focus Area Tier 1 Focal Species

- Grizzly bear
- Mallard

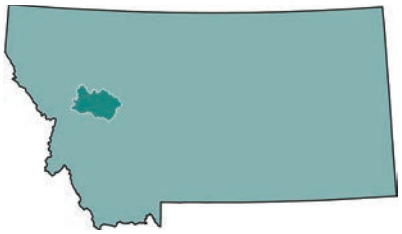
Rocky Mountain Front Focus Area Habitat Targets

- Wetland Acres Restored/Enhanced: 20 acres
- Upland Acres Restored/Enhanced: 0 acres
- Riparian Restored/Enhanced: 0 miles
- Fish Passage: 0
- Grizzly Bear Fences: 3

Rocky Mountain Front Focus Area Partnership Targets

- Private Landowner Agreements: 3
- Partnerships: 18
- Cost-share: 2:1
- Technical Assistance: 20 total staff days

Blackfoot River Watershed Focus Area



From the Continental Divide, the Blackfoot River flows 132 miles westerly to its confluence with the Clark Fork River near Missoula, Montana. The Watershed totals 1.5 million acres and is nestled between the Continental Divide, Bob Marshall/Scapegoat Wilderness and Garnet Mountain Range. Land ownership is extremely diverse with public lands covering much of the higher mountainous elevations, while highly productive private lands are located in the foothills and valley floor. The Blackfoot Valley was shaped by glacial ice and a large glacial lake. Geologic, hydrologic, and topographic features combine to produce a wide array of plant and animal communities. Wetland features include; glacial lakes, ponds, bogs, fens, basin-fed creeks, spring creeks, large rivers, scrub/shrub riparian areas and cottonwood forests. The uplands are dominated by native grasslands, sagebrush, aspen groves and conifers. Fish and wildlife assemblages are highly diverse. The Watershed is home to grizzly bears, gray wolves, wolverines, Canada lynx, elk, deer and moose. Breeding migratory birds include such species as, trumpeter swans, sandhill cranes, long-billed curlews, red-necked grebes, common loons, great gray owls, and Brewer's sparrow. The Blackfoot has maintained its rural lifestyle with livestock ranching and timber production being the predominant land-use.

The Blackfoot River Watershed Focus Area encompasses about 1.5 million acres. Land ownership patterns in this focus area are a mixture of private, U.S. Forest Service, BLM, Waterfowl Production Areas, MFWP Management Units, TNC and state school lands. Ownership is comprised of 45% private land and 55% public land.

2013 Trumpeter Swan Release on the Rolling Stone Ranch in the Blackfoot Valley. Swan releasers from left to right are Jeff Hagener, Director MT Fish, Wildlife & Parks; Traci Stone Manning, Director MT Department of Environment Quality; Richard Joe, Director The Nature Conservancy of Montana; Noreen Walsh, Service Regional Director; Steve Bullock, Governor of Montana. USFWS photo.

Key partners in the Blackfoot River Valley Watershed are members of The Blackfoot Challenge and the Big Blackfoot Chapter of Trout Unlimited which includes over 500 landowners and 160 partner organizations that support the overall conservation work in the Blackfoot Valley.

PFW activities will concentrate on restoring and enhancing instream, riparian and wetland habitats as well as conflict abatement projects for Tier 1 Focal Species. Under the MT PFW Focal Species criteria; four Tier 1 species have been selected for the Blackfoot River Watershed. The site specific plan developed for the Blackfoot River Watershed will link habitat projects to explicit population objectives for these four species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Blackfoot River Watershed Focus Area Tier 1 Focal Species

- Grizzly bear
- Bull trout (Threatened)
- Westslope cutthroat trout
- Trumpeter swan

Blackfoot River Watershed Focus Area Five Year Targets

- Wetland Acres Restored/Enhanced: 155 acres
- Upland Acres Restored/Enhanced: 4,000 acres
- Riparian Restored/Enhanced: 20 miles
- Fish Passage: 10
- Grizzly Bear Fences: 5

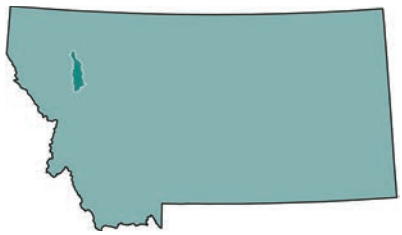
Blackfoot River Watershed Focus Area Partnership Targets

- Private Landowner Agreements: 25
- Partnerships: 120
- Cost-share: 2:1
- Technical Assistance: 150 total staff days

Westslope cutthroat trout in the Blackfoot River. Photo by Pat Clayton.

Swan River Watershed, Montana. Photo by Luke Lamar.

Swan River Watershed Focus Area



The abundance of wetlands in the Swan River watershed makes this valley unique among all watersheds in western Montana. The valley floor holds more surface water than any other Montana watershed; 16% of the land base is comprised of wetlands. Water collects in over 4,000 potholes, ponds, lakes, marshes, and peatlands, and a 1,300 mile network of streams transports water throughout the valley. These wetlands, and all of the connected riparian linkages that run between them, function as high quality habitat for many of our most sensitive species, both plant and animal. The Swan River originates at Gray Wolf Lake in the Mission Mountains and flows through Swan Lake at the northern end of the valley, before entering the Flathead Lake watershed, ultimately flowing into the Columbia River System.

Swan River Watershed lies at the western edge of the Crown of the Continent ecosystem (CoCE) which still supports the full assemblage of large mammalian predators including grizzly bears, gray wolves, wolverine, and Canada lynx. The Swan Valley provides important habitat and connectivity for wildlife travelling east-west between the Bob Marshall and Mission Mountains Wilderness areas, as well north and south along the chain of Rocky Mountains. The lowlands support over 170 different species of wetland plants, including the water howellia (federally threatened). The Swan Watershed contains the only known occurrences of water howellia in Montana and 72% of the global occurrences. The ecosystems that exist between the valley bottom and mountain summits provide a wide diversity of habitat for fish and wildlife.

The Swan Valley's large expanses of public land, relatively intact habitat and historic wildlife corridors combined with restoration/enhancement activities on private lands would benefit Federal Trust Species such as the grizzly bear, gray wolf, wolverine, pine marten and Canada lynx; migratory birds such as harlequin ducks, common loons, red-necked grebes, black tern, olive-sided flycatcher, peregrine falcons, greater sandhill cranes and trumpeter swans; westslope cutthroat trout and bull trout.

The Swan River Watershed Focus Area encompasses approximately 470,000 acres. Until recently the valley bottom had a large checkerboard ownership between the U.S. Forest Service and Plum Creek Timber Company (PCTC). TNC and Trust for Public Lands purchased the remaining PCTC lands as part of the Montana Legacy Project and transferred the bulk of the ownership to state and federal partners. Today ownership is comprised of 10% private lands and 90% public lands with the U.S. Forest Service, Montana State Forest and the Service Swan River National Wildlife Refuge as the largest public land managers.

Key partners in the Swan River Valley Focus Area include; Private landowners, MFWP, MT Department of Natural Resources and Conservation, U.S. Forest Service, Swan Valley Connections, Swan Valley Community Council, Missoula County, TNC, Trust for Public Lands, Vital Ground, Swan Lakers, and the Montana Land Reliance.

PFW activities will concentrate on restoring and enhancing instream, riparian and wetland habitats as well as conflict abatement projects for Tier 1 Focal Species. Under the MT PFW Prioritiy Species criteria; three Tier 1 species have been selected for the Swan River Watershed. A site specific plan will be developed for the Swan River Watershed that will link habitat projects to explicit population objectives for these three species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Swan River Watershed Focus Area Tier 1 Focal Species

- Bull trout (Threatened)
- Trumpeter swan
- Grizzly bear

Swan River Watershed Focus Area Habitat Targets

- Wetland Acres Restored/Enhanced: 100 acres
- Upland Acres Restored/Enhanced: 320 acres
- Riparian Restored/Enhanced: 5 miles
- Fish Passage: 2
- Grizzly Bear Fences: 3

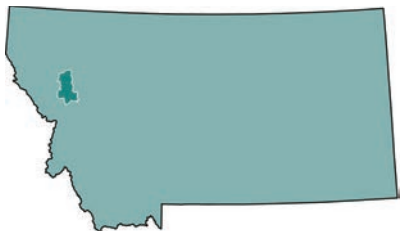
Swam River Watershed Focus Area Partnership Targets

- Private Landowner Agreements: 10
- Partnerships: 60
- Cost-share: 2:1
- Technical Assistance: 65 total staff days

Grizzly bear. Photo by Randy Smith.

One of many glaciated wetlands in the Mission Valley. USFWS photo.

Mission Valley Focus Area



The Mission Valley Focus Area is a glacially gouged remnant of 12,000 years past. It is located in Lake County of western Montana and is within the exterior boundaries of the Flathead Indian Reservation of the Confederated Salish and Kootenai Tribes. The southern shore of Flathead Lake defines the northern boundary with the main stem of the Flathead River to the west. The Jocko River watershed forms the southern boundary and the magnificent Mission Mountains tower above the eastern valley edge. The Valley floor is covered with glaciated wetlands. Wildlife and fish species inhabiting the Mission landscape are diverse and abundant. The wetlands and grasslands attract breeding and migrating waterfowl, shorebirds, raptors, and passerine birds. The streams and spring creeks are home to native west-slope cutthroat trout and bull trout. Grizzly bears are regularly observed in the Valley.

The Mission Valley Focus Area encompasses about 600,000 acres. Land ownership patterns in this area are a mixture of private, tribal, Service refuges and waterfowl production areas and state wildlife management areas. Ownership is comprised of 92% private land and 8% public land, with farming and livestock ranching being the predominant land use of the private lands.

Key partners in the Mission Valley include; Confederated Salish and Kootenai Tribes, MFWP, NRCS, DU, Pheasants Forever, TU, Lake County Conservation District, Flathead Land Trust, Five Valleys Land Trust and private landowners.

PFW activities will concentrate on restoring and enhancing wetland, stream and riparian habitat as well as conflict abatement projects for Tier 1 Focal Species. Under the MT PFW Focal Species criteria; Three Tier 1 species have been selected for the Mission Valley. A site specific plan will be developed for the Mission Valley that will link habitat projects to explicit population objectives for these three species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Pair of trumpeter swans with cygnets in the Mission Valley, Montana. USFWS photo.

Mission Valley Focus Area Tier 1 Focal Species

- Grizzly bear
- Bull trout (Threatened)
- Trumpeter swan

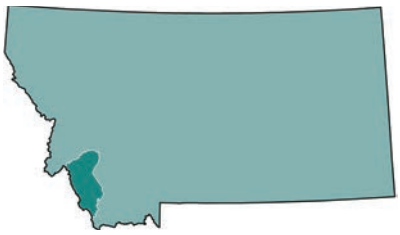
Mission Valley Focus Area Habitat Targets

- Wetland Acres Restored/Enhanced: 125 acres
- Upland Acres Restored/Enhanced: 750 acres
- Riparian Restored/Enhanced: 5 miles
- Fish Passage: 3
- Grizzly Bear Fences: 2

Mission Valley Focus Area Partnership Targets

- Private Landowner Agreements: 20
- Partnerships: 120
- Cost-share: 2:1
- Technical Assistance: 150 total staff days

Big Hole River Watershed Focus Area



The Big Hole River Watershed Focus Area includes 1.97 million acres of the Big Hole, Grasshopper, Horse Prairie and Medicine Lodge watersheds that straddle the Beaverhead Mountains and the Continental Divide along the Idaho-Montana border in southwest Montana. The area is characterized by numerous high elevation mountains ranges, expansive sage steppe and large productive valleys that provide a diversity of habitat for many species. The valleys are largely privately-owned with livestock and hay production being the primary land-use. At northern end of the Focus Area the Big Hole River emanates from the Beaverhead Mountains and winds for nearly 156 miles to its confluence with the Beaverhead River to create the Jefferson. The Big Hole River is a considered a "blue-ribbon" wild trout fishery and is one of the last free-flowing rivers in the West. The Big Hole River is also home to one of the only populations of fluvial Arctic grayling in the contiguous states.

To the south the Grasshopper, Medicine Lodge and Horse Prairie watersheds are headwaters of the Beaverhead River. These watersheds are largely undeveloped and are key wildlife connectivity corridors between the Greater Yellowstone Ecosystem and the Salmon\Selway Wilderness to the west and the Crown of the Continent to the north. Land ownership is a mixture of private (28%) and public (72%) lands that include U.S. Forest Service, BLM and state lands.

The Big Hole Focus Area is home to a myriad of native species. Tier I focal species include Arctic grayling and greater sage-grouse. Enhancing habitat at a landscape scale for these species will benefit habitat and connectivity for many aquatic, avian and terrestrial

North Fork of the Big Hole River. USFWS photo.

species. Additional species include westslope cutthroat trout, trumpeter swans, pygmy rabbits, pronghorn, sandhill cranes, Canada lynx, wolverines, wolves, elk, mule deer, Shiras moose and numerous migratory birds.

Key partners in the Big Hole Focus Area include; private landowners, Arctic Grayling Recovery Program, Big Hole Watershed Committee, Big Hole River Foundation, MFWP, NRCS, MT Department of Natural Resources and Conservation, TNC, The Wildlife Conservation Society, U.S. Forest Service, BLM, TU, the High Divide Collaborative, Beaverhead Watershed Committee.

PFW activities will concentrate on restoring and enhancing instream, riparian, wetland and upland habitats for Tier 1 Focal Species. Under the MT PFW Focal Species criteria; two Tier 1 species have been selected for the Big Hole River Watershed. The site specific plan developed for the Big Hole Watershed will link habitat projects to explicit population objectives for these two species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Big Hole River Focus Area Tier 1 Focal Species

- Arctic grayling
- Greater sage-grouse

Big Hole River Watershed Focus Area Habitat Targets

- Wetland Acres Restored/Enhanced: 200 acres
- Upland Acres Restored/Enhanced: 10,000 acres
- Riparian Restored/Enhanced: 30 miles
- Fish Passage: 10

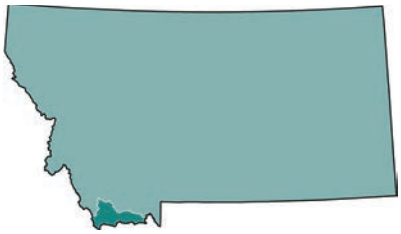
Big Hole River Partnership Targets

- Private Landowner Agreements: 30
- Partnerships: 180
- Cost-share: 3:1
- Technical Assistance: 225 total staff days

Director Ashe at the Arctic Grayling celebration in the Big Hole River Watershed, 2014. USFWS photo.

Alaska Basin in the Centennial Valley. Photo by James (Newt) Perdue, USFWS.

Centennial Valley Focus Area



The Centennial Valley Focus Area encompasses 1.0 million acres of private and public lands. The area is characterized by numerous high elevation mountains ranges, expansive sage steppe and large productive valleys that provide a diversity of habitat for many species. The valleys are largely privately-owned with livestock and hay production being the primary land-use. The Centennial Valley is one of wildest and most intact landscapes in the contiguous U.S. The Centennial Valley lies on the northwest border of the Greater Yellowstone Ecosystem (GYE) and serves as a corridor between the GYE and the High Divide to the west. In the center of Centennial Valley is the Red Rock Lakes National Wildlife Refuge (Refuge) which includes 51,386 acres and encompasses the largest wetland complex in the Greater Yellowstone Ecosystem. The Refuge also manages 23,806 acres of conservation easements on private lands.

The Red Rock River meanders through Centennial valley floor and lies north and east of the Continental Divide along the Montana-Idaho border. To the west, Big Sheep, Muddy and Sage Creek watersheds are largely undeveloped with diverse habitat and serve as connectivity corridors to the Salmon\Selway wilderness. Land ownership is a mixture of private (31%) and public (69%) lands that include the U.S. Forest Service, BLM and state lands.

Centennial Valley Focus Area is home to a myriad of native species. Tier I Focal species include grizzly bears, trumpeter swans, Arctic grayling and greater sage-grouse. Enhancing habitat at a landscape scale for these species will benefit habitat and connectivity for many aquatic, avian and terrestrial species. Additional species include westslope cutthroat trout, trumpeter swans, pygmy rabbits, pronghorn, sandhill cranes, Canada lynx, wolverines, wolves, elk, mule deer, Shiras moose and numerous migratory birds.

Key partners in the Centennial Valley Focus Area include; private landowners, Red Rock National Wildlife Refuge, Arctic Grayling Recovery Program, Centennial Valley Landowners Association, MFWP, NRCS, MT Department of Natural Resources and Conservation, U.S. Forest Service, BLM, TNC, and the Wildlife Conservation Society.

Arctic grayling. Photo by Mark Conlin.

PFW activities will concentrate on restoring and enhancing instream, riparian, wetland and upland habitats as well as conflict abatement projects for Tier 1 Focal Species. Under the MT PFW Prioritiy Species criteria; four Tier 1 species have been selected for the Centennial Valley Watershed. The site specific plan developed for the Centennial Valley will link habitat projects to explicit population objectives for these four species as described in the monitoring section. Refer to the MT PFW Strategic Plan Introduction for a detailed explanation on the process used to select and prioritize focal species.

Centennial Valley Focus Area Tier 1 Focal Species

- Arctic grayling
- Greater sage-grouse
- Trumpeter swan
- Grizzly bear

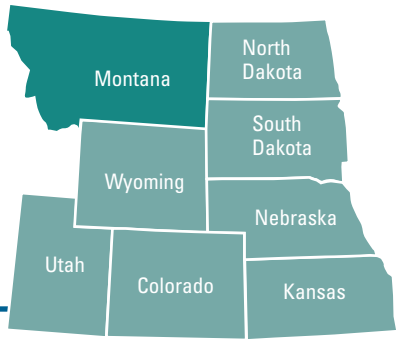
Centennial Valley Focus Area Habitat Targets

- Wetland Acres Restored/Enhanced: 200 acres
- Upland Acres Restored/Enhanced: 10,000 acres
- Riparian Restored/Enhanced: 10 miles
- Fish Passage: 10
- Grizzly Bear Fences: 2

Centennial Valley Focus Area Partnership Targets

- Private Landowner Agreements: 30
- Partnerships: 180
- Cost-share: 2:1
- Technical Assistance: 165 total staff days

Montana Statewide Goals



Improve Information Sharing and Communication

The MT PFW program operates under the principle that successful community-based, landscape conservation is multi-dimensional, working across spatial, temporal, ecological, and social scales. Communication, collaboration and outreach with conservation partners are an integral part of a successful conservation delivery program. To be successful, the MT PFW program will strive to maintain, build and strengthen relationships with internal and external partners.

Five-year Targets

- Participate in 10 congressional staff meetings regarding the MT PFW program.
- Initiate/participate in 10 activities that connect youth to nature, trumpeter swan releases, classroom visits, restoration site visits, etc.
- Organize and participate in 100 (20/yr.) landowner/watershed meetings, conferences or workshops throughout Montana.
- Enter into 12 Cooperative Agreements, Contribution Agreements or Memorandums of Understanding with partners or landowner based groups in MT.
- Sponsor or directly assist in 10 field tours that promote the MT PFW program.
- Assist in five National Conservation Training Center courses as instructors or guest speakers.
- Host five coordination meetings with MFWP to assure program consistencies.
- Attend 5 NRCS State Technical Committee meetings.
- Provide 15 MT PFW updates to Regional and Washington Service offices.
- Hold 10 MT PFW staff meetings to improve internal communication.

Enhancing Our Workforce

All MT PFW staff will be provided an opportunity to acquire at least 40 hours of training each year. This training may include the following categories:

- Technical Proficiency: restoration techniques (i.e. Rosgen), GIS, Candidate Conservation Agreements/ Safe Harbor/ESA Recovery
- Enhancing Cooperative Community Conservation
- Leadership
- Communication
- Congressional Operations
- Administrative Procedures

Training needs will be met through internal and external training facilities. MT PFW staff will be encouraged to take advantage of the Service's National Conservation Training Center, workshops, seminars, and other continuing education opportunities.

Currently, the Swan River Watershed and the Rocky Mountain Front Focus Areas are unstaffed. When and if new field biologists are needed to staff these focus areas, they will be trained and mentored by senior MT PFW staff.

In accordance with the Service Employee Performance Appraisal Plan (EPAP) system, performance and special achievement awards will be used to recognize exceptional projects and employees.

Increasing Accountability

Objectives

- Produce an annual accomplishment report
- 100% of projects will have completed implementation & compliance monitoring
- By 2021 develop site specific plans for each MT PFW conservation focus area. These plans will be developed in consultation with the MT HAPET Office and will include GIS layers, data sets, and habitat assessments. Key partners will also be engaged in this process
- Field biologists will GPS all new habitat projects
- Create GIS layer of all MT PFW habitat projects.
- By 2021, each MT PFW Conservation Focus Area will have at least one peer reviewed biological assessment. These assessments may be conducted by; Universities, U.S. Geological Survey, The MT Natural Heritage Program, MT Fish, Wildlife & Parks, Service Research Centers or conservation organizations.
- The MT PFW State Coordinator and HabITS Coordinator will ensure that HabITS data entries are timely and accurate.

External Factors

Generally, the nine MT PFW Conservation Focus Areas identify intact landscapes with a livestock ranching based-economy. The economic and social pressures to develop or fragment these areas could have a significant impact on our ability to deliver an effective PFW program.

Global climate change accompanied by persistent droughts and rapid snowmelt could affect project availability and the response of Federal Trust Species to PFW restoration projects.

Other external factors that could have adverse effects on the MT PFW program include; budget shortfalls, personnel turnover, apathy by Service leadership, and restrictive policies.

Table 1A: Arctic Grayling

Landscape: Big Hole River Watershed

Level II and Level III Monitoring

Threat	Goal	Conservation Practices	Habitat Outcome*	Level Measured
De-watering	Improve Connectivity and Instream Flows	Irrigation improvement	Measured instream flows returned to stream	II &/or III
		Installed measuring devices	Site visit assessment	II
		Instream Flow Conservation Plans	Measured instream flows returned to stream	II & III
		Water Rights Compliance	Measured instream flows returned to stream	II & III
		Alternative Stock water	Measured instream flows returned to stream	II &/or III
Migration Barriers	Improve Connectivity and Remove Barriers	Installed Fish Ladders	Site visit assessment	II
		Remove/ replace non-functioning crossings	Site visit assessment	II
		Installing Fish Friendly Diversions	Site visit assessment	II
Fish Entrainment	Improve Connectivity and Reduce Entrainment	Installed Fish Screens	Site visit assessment	II
		Irrigation Improvement	Site visit assessment	II
Riparian De-gradation	Improve Riparian Conditions	Plant shrubs & trees	Survival rate	II &/or III
			Riparian condition score	II &/or III
		Riparian Fences	Riparian condition score	II &/or III
		Grazing systems	Riparian condition score	II &/or III
		Alternative Stock Water	Riparian condition score	II &/or III

Biological Outcomes **	**Level Measured**
Increased Distribution	III
Increased Abundance	III
Stable Age Structure	III
Genetic Diversity	III

**Biological Outcomes for Level III (landscape scale) and in some cases Level II (site scale) are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented based on the threats and goals established.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. Examples: Increased instream flows after conservation practice implemented, or riparian score pre- and post-conservation practice implemented. At a landscape scale (Level III), habitat monitoring will roll up individual Level II monitoring to evaluate if overall conservation practices address threats at the landscape level. Example: Instream flows increased in landscape; average riparian score pre- and post-restoration in the landscape.

**Biological monitoring covers four categories for Arctic Grayling in the Big Hole River Watershed. All four categories are monitored annually by MT FWP, Service, DNRC and NRCS. Biological monitoring of these four categories at the Landscape Scale (Level III) assess the threats identified and implemented as conservation measures at the site and landscape scale. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

All habitat and biological monitoring for the Arctic grayling in the Big Hole River Watershed is housed with MT FWP in Dillon, MT.

Table 1B: Arctic Grayling

Landscape: Centennial Valley

Level II and Level III Monitoring

Threat	Goal	Conservation Practices	Habitat Outcome*	Level Measured
De-watering	Improve Connectivity and Instream Flows	Irrigation Improvement	Measured instream flows returned to stream	II &/or III
		Installed Measuring Devices	Site visit assessment	II &/or III
		Instream Flow Conservation Plans	Measured instream flows returned to stream	II &/or III
		Water Rights Compliance	Measured instream flows returned to stream	II &/or III
		Alternative Stock water	Measured instream flows returned to stream	II &/or III
Migration Barriers	Improve Connectivity and Remove Barriers	Installed Fish Ladders	Site visit assessment	II &/or III
		Remove/ replace non-functioning crossings	Site visit assessment	II &/or III
		Installing Fish Friendly Diversions	Site visit assessment	II &/or III
Fish Entrainment	Improve Connectivity and Reduce Entrainment	Installed Fish Screens	Site visit assessment	II &/or III
		Irrigation Improvement	Site visit assessment	II &/or III
Riparian Degradation	Improve Riparian Conditions	Installed shrubs & trees	Survival rate	II &/or III
			Riparian condition score	II &/or III
		Riparian Fences	Riparian condition score	II &/or III
		Grazing systems	Riparian condition score	II &/or III
		Alternative Stock Water	Riparian condition score	II &/or III

Biological Outcomes **	**Level Measured**
Increased Distribution	III
Increased Abundance	III
Stable Age Structure	III
Genetic Diversity	III

**Biological Outcomes for Level III (landscape scale) and in some cases Level II (site scale) are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented based on the Threats and Goals established.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. Examples: Increased instream flows after conservation practice implemented or riparian score pre- and post-conservation practice implemented. At a landscape scale (Level III), habitat monitoring will roll up individual Level II monitoring to evaluate if overall conservation practices address threats at the landscape level. Example: Instream flows increased in landscape; Average riparian score pre- and post-restoration in the landscape.

**Biological monitoring covers four categories for Arctic Grayling in the Centennial Valley. All four categories are monitored annually by MT FWP, Service, and NRCS. Biological monitoring of these four categories at the landscape scale (Level III) assess the threats identified and implemented as conservation measures at the site and landscape scale. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

All habitat and biological monitoring for the Arctic grayling in the Centennial Valley is housed with MT FWP in Dillon, MT.

Table 2: Bull Trout

Landscape: Blackfoot River Watershed, Mission Valley & Swan River Watershed

Level II and Level III Monitoring

Threat	Goal	Conservation Practices	Habitat Outcome*	Level Measured
Elevated Water Tempera-tures	Cold Water	Irrigation Improvement	Water temperature	II &/or III
			Measured instream flows returned to stream	II &/or III
		Instream Flow Conservation	Water temperature	II
			Measured instream flows returned to stream	II &/or III
		Alternative Stock water	Water temperature	II
			Measured instream flows returned to stream	II &/or III
		Installed shrubs & trees	Water temperature	II
			Survival rate	II
			Riparian condition score	II &/or III
		Riparian Fences	Water temperature	II
			Riparian condition score	II &/or III
		Grazing systems	Water temperature	II
			Riparian condition score	II &/or III
		Instream Restoration	Water temperature	II
			Width to depth measurements	II

Water Quality Impairment	Clean Water	Instream restoration	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
		Alternative Stock water	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
			Measured instream flows returned to stream	II &/or III
		Riparian Fences	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
			Riparian condition score	II &/or III
		Grazing systems	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
			Riparian condition score	II &/or III
Migration Barriers	Connectiv-ity	Removing barriers	Site visit assessment	II
		Install fish ladders	Site visit assessment	II
		Install fish screens	Site visit assessment	II
		Instream restoration	Pattern, Profile and Dimensions before, as built and after	II
		Instream Flow Conservation	Measured instream flows returned to stream	II &/or III
Lacks complexity	Improve instream complexity	Instream restoration	Pattern, Profile and Dimensions before, as built and after	II
			Large Woody Debris Assessment (> 4” DBH & > 6’)	II
		Instream Flow Conservation	Measured instream flows returned to stream	II &/or III

Biological Outcomes **	**Level Measured**
Redd surveyed	III
CPUE before and after	II
Juvenile surveys	II &/or III
Abundance in River	III
Fish screen effectiveness (CPUE)	II
Fish friendly barrier assessments	II
Other telemetry or genetic assessments	II &/or III

**Biological Outcomes for Level III (landscape scale) and in some cases Level II (site scale) are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented based on the Threats and Goals established.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually on selected sites to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. Examples: Increased instream flows after conservation practice implemented or riparian score pre- and post-conservation practice implemented. At a landscape scale (Level III), habitat monitoring will roll up individual Level II monitoring to evaluate if overall conservation practices address threats at the landscape level. Example: Instream flows increased in landscape; Average riparian score pre- and post-restoration in the landscape.

**Biological monitoring covers numerous categories for bull trout in the selected Conservation Focus Areas. Most categories are monitored by the same standards across the different landscapes. Redd surveys are completed each year in each Conservation Focus Area. Catch per unit effort is site specific and is completed on most bull trout instream projects pre- and post-restoration. Long term juvenile bull trout counts are completed by MT FWP in most Bull Trout Core Areas. Abundance in the larger rivers is completed by MT FWP bi-annually. Biological monitoring of these categories at the landscape scale (Level III) assess the threats identified and implemented as conservation measures at the site and landscape scale. Other biological monitoring may occur on connectivity projects that relate to removing barriers, assessing fish screens and larger scale telemetry to genetic assessments. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

All habitat monitoring for bull trout will be housed with the MT PFW program. Biological monitoring for bull trout will mostly be housed with MT FWP and occasionally with the Service or the U.S. Forest Service.

Table 3: Grizzly Bear

Landscape: Blackfoot River Watershed, Mission Valley, Rocky Mountain Front & Swan River Watershed

Level II and Level III Monitoring

Threat	Goal	Conservation Practices	Habitat Outcome*	Level Measured
Human caused mortalities	Minimize human caused mortalities by reducing conflicts	Livestock carcass pickup	Carcasses picked up (composted, rendered, landfill or dispersed)	II & III
		Bone yards removed	Site visit assessment	II
		Bone yards fenced	Site visit assessment (electric fence assessment)	II
		Calving yards fenced	Site visit assessment (electric fence assessment)	II
		Bee yards fenced	Site visit assessment (electric fence assessment)	II
		Secure attractants	Site visit assessment	II
		Conservation Easement	Site visit assessment	II
Habitat Fragmentation	Connectivity	Riparian Restoration	Survival rate	II
			Riparian condition score	II
		Riparian Enhancement	Riparian condition score	II
			Intact habitat	
		Conservation Easement		II

Biological Outcomes **	**Level Measured**
Population trend	III
Mortalities	II &/or III
Conflicts	II &/or III
Presence/absence	II

**Biological Outcomes for Level III and in some cases Level II are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually on selected sites to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. Examples: Site visit to ensure electric fences are working properly or riparian condition score pre- and post-conservation practice implemented. At a landscape scale (Level III), habitat monitoring will roll up individual Level II monitoring to evaluate if overall conservation practices address threats at the landscape level. Example: Number of livestock carcasses removed or average riparian condition score pre and post restoration in the landscape.

**Biological monitoring covers four categories for grizzly bears in the selected Conservation Focus Areas. The first three categories are measured and monitored the same way across the different Conservation Focus Areas. Population trends are monitoring at the Northern Continental Divide Ecosystem (landscape scale) by MT FWP and other agencies. The population has been growing at 3.06% each year with an estimated 942 bears in 2011. Mortalities and conflicts are monitored annual by MT FWP at both the 2nd & 3rd Order landscape scale. Presence and absence will be very site specific and will rely on MT FWP collaboration and data sharing. Biological monitoring of these four categories at the landscape scale (Level III) assess the threats identified and implemented as conservation measures at the site and landscape scale. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

Most habitat monitoring for grizzly bears will be housed with the MT PFW program. Biological monitoring for grizzly bears will mostly be housed with MT FWP and occasionally with the Service or the U.S. Geological Survey.

Table 4: Dabbling Ducks – Northern Pintail, Mallard & Northern Shoveler

Landscape: Glaciated Plains, Northern Grasslands, & Rocky Mountain Front (Mallards)

Level II and Level III Monitoring

Threat	Goal	Conservation Practices	Habitat Outcome*	Level Measured
Wetland Loss	Wetland Restoration	Restore wetland hydrology	HAPET 4-square mile card	II
	Perpetual Protection	Conservation Easement	Intact habitat	II
Wetland Degradation	Wetland Enhancement	Grazing system	HAPET 4-square mile card	II
		Water development	HAPET 4-square mile card	II
Grassland Loss	Grassland Restoration	Grassland reseeding	Perennial cover (Y/N)	II
			Native Grass Species (Y/N)	II
			Native Forbs (Y/N)	II
			Invasive Species (Y/N)	II
			Intact habitat	II
	Perpetual Protection	Conservation Easement		
	Grassland maintained	Grazing system	Rotational system followed (Y/N)	II
			Site visit assessment	II
		Water development		

Grassland Degradation	Grassland Enhancement	Grazing system	Rotational system followed (Y/N)	II
			Robel Pole Readings	II
			Herbaceous biomass	II
			Utilization measurements	II
		Water development	Robel Pole Readings	II
			Herbaceous biomass	II
			Utilization measurements	II
		Invasive species management	Invasive Species (Y/N) map –before and after	II

Biological Outcomes **	**Level Measured**
4 square mile pair counts	II
Breeding pair trend data	III
Brood counts	II

**Biological Outcomes for Level III and in some cases Level II are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually on selected sites to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. Examples: Site visit using a HAPET four square mile card to assess wetland condition, or Robel Pole readings in selected pastures associated with a grazing system. At a landscape scale (Level III), habitat monitoring will roll up individual Level II monitoring to evaluate if overall conservation practices address threats at the landscape level. Example: Four square mile cards for wetland restoration conditions across landscape.

**Biological monitoring covers three categories for mallards in the selected Conservation Focus Areas. All three categories are measured and monitored the same way across the different Conservation Focus Areas. For wetland restoration or enhancement projects at the site scale, monitored wetlands will follow the HAPET four square mile pair survey procedures. HAPET will use these numbers to compare to other existing wetlands being surveyed. Breeding pair trend data will also come from HAPET four square mile monitoring and will be rolled up at the appropriate landscape scale within the different Conservation Focus Areas to track the long term trend of pairs within our Conservation Focus Area. Brood surveys will be used to do biological monitoring on those grassland areas that have been restored or enhanced by the MT PFW program. Biological monitoring of these three categories assess the threats identified and implemented as conservation measures at the site and landscape scale. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

All habitat monitoring for mallards will be housed with the MT PFW program. Biological monitoring for mallards will mostly be housed with HAPET and occasionally with the MT PFW program on brood surveys.

Table 5: Priority Grassland Songbirds – Sprague's Pipit, Baird's Sparrow, McCown's Longspur and Chestnut Collared Longspur

Landscape: Northern Grasslands, Glaciated Plains, Musselshell Plains (Baird's Sparrow and Chestnut Collared Longspurs)

Level II and Level III Monitoring

Threat	Goal	Conservation Practices	Habitat Outcome*	Level Measured
Grassland Loss	Grassland Restoration	Grassland reseeding	Perennial cover (Y/N)	II & III
			Native Grass Species (Y/N)	II
			Native Forbs (Y/N)	II
			Invasive Species (Y/N)	II
			Intact habitat	II & III
	Perpetual Protection	Conservation Easement		
	Grassland maintained	Grazing system	Rotational system followed (Y/N)	II
		Water development	Site visit assessment	II
Grassland Degradation	Grassland Enhancement	Grazing system	Rotational system followed (Y/N)	II
			Vegetation density/biomass	II & III
			Range condition	II
			Utilization measurements	II
		Water development	Vegetation density/biomass	II & III
			Range condition	II
			Utilization measurements	II
			Invasive Species (Y/N) map –before and after	II
		Invasive species management		II

Biological Outcomes **	**Level Measured**
Point counts	II &/or III
Trends in point counts	II &/or III

**Biological Outcomes for Level III and in some cases Level II are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually on selected sites to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. The extent of perennial grassland cover will be monitored at the landscape scale (Level III) with geospatial land use data (e.g. USDA's National Agricultural Statistics Service maps). MT PFW program is currently working to help develop a method of remote sensing for herbaceous biomass. If successful, this will allow us to monitor the annual distribution of biomass at the landscape scale (Level III) using satellite imagery.

**Biological monitoring for priority grassland songbirds will be achieved using repeated point count surveys, both on project sites (Level II) and in the broader landscape (Level III). Data will be collected collaboratively by Service, MT FWP, BLM and other conservation partners in the focal landscapes. Preliminary power analysis indicates 47-99% power to detect a 5% change in abundance of species of concern using a set of 40, 10-point transects repeated annually over a five year period. These data will be used at both the site scale and landscape scale to assess productivity of our conservation work. Biological monitoring of these three categories assesses the threats identified and implemented as conservation measures at the site and landscape scale. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

All habitat monitoring for priority grassland songbirds will be housed with the MT PFW program. Biological monitoring for priority grassland songbirds will housed with the Service.

Table 6: Greater Sage Grouse

Landscape: Big Hole River Watershed, Centennial Valley, Glaciated Plains, Musselshell Plains and Northern Grasslands

Level II and Level III Monitoring

Threats	Goal	Conservation Practices	Habitat Outcome*	Level Measured
Sage Steppe Loss	Sage steppe restoration	Sage steppe reseeding	Perennial cover (Y/N)	II
			Native grass Species (Y/N)	II
			Native forbs (Y/N)	II
			Native sage brush (Y/N)	II
			Non-native invasive species (Y/N)	II
			Intact habitat	II
	Sage steppe maintained	Conservation easement		
		Water development	Site visit assessment	II
		Grazing system developed	Rotational system followed (Y/N)	II
Sage Steppe Degradation	Sage steppe enhancement	Rotational grazing systems	Rotational system followed (Y/N)	II
		Water development	Site visit assessment	II
Fence Collisions	Reduce mortalities from collisions	Remove/change fences	Site visit assessment	II
		Mark fences	Site visit assessment (marker assessment)	II
Conifer Encroach-ment	Restore historic open sage steppe habitat	Conifer Removal	Re-growth assessment	II
Wetland Degradation	Restore wetland hydrology	Wetland restoration	Cowardin assessment	II
Invasive exotic species	Remove invasive exotic species	Invasive species management	Invasive Species (Y/N) map –before and after	II

Biological Outcomes **	**Level Measured**
Male lek count trends	II & III
Fence collision assessment	II

**Biological Outcomes for Level III and in some cases Level II are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually on selected sites to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring.

**Biological monitoring covers two categories for greater sage-grouse in the selected Conservation Focus Areas. The two categories are measured and monitored the same way across the different Conservation Focus Areas. Lek surveys at the site scale and rolled up into the appropriate landscape scale will require our PFW biologists to work closely with MT Fish, Wildlife & Parks and partners on surveys and data sharing. Examples: Annual lek surveys at both the site scale and landscape scale (will rely closely on partners for inventory and data sharing), fence collision assessments will, on sites selected, be done by walking the marked fence lines immediately after the lek season, looking for dead birds and feathers. Biological monitoring of these two categories assess the threats identified and implemented as conservation measures at the site and landscape scale over time. Biological monitoring at the landscape scale will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

There are many factors at play that will affect lek numbers, some of which are within the control of the PFW program and some that are not. The MT PFW program understands we need long term data and a very good understanding of other threats to effectively evaluate biological outcomes based on our conservation practices.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

All habitat monitoring for greater sage-grouse will be housed with the MT PFW program. Biological monitoring for greater sage-grouse will mostly be housed with MT FWP and occasionally with the MT PFW program on fence collisions.

Table 7: Trumpeter Swans

Landscape: Blackfoot River, Centennial Valley, Mission Valley and Swan River Watershed

Level II and Level III Monitoring

Threats	Goal	Conservation Practices	Habitat Outcome*	Level Measured
Wetland Drainage	Restore Territorial and foraging wetlands	Wetland Restoration	Cowardin classification	II
Altered Wetland Hydrology	Minimize negative effects of altered hydrology to nesting swans	Wetland Restoration Water management agreements Install floating islands	Cowardin classification Site visit assessment (water level evaluation) Site visit assessment Site visit assessment	II II II II
Power line/Fence Collisions	Reduce mortalities from collisions	Remove/change power lines/fences Mark Power Line/Fences	Site visit assessment Site visit assessment (marker assessment)	II II
Predation	Increase nest success	Construct nesting islands Install floating islands	Site visit assessment Site visit assessment	II II
Human caused disturbance	Decrease human caused disturbance	Conservation Easement	Site visit assessment	II &/or III

Biological Outcomes **	**Level Measured**
Presence/Absence	II
# of Territorial Wetlands	II & III
# of Nesting Pairs	II & III
Hatched cygnets	II & III
Fledged cygnets	II & III
Total white/gray bird surveys	III

**Biological Outcomes for Level III and in some cases Level II are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually on selected sites to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. Examples: Assessing altered hydrology by doing a (or multiple if needed) site visit during the nesting season to assess wetland level fluctuations or assessing power line markers to make sure they are still up and functioning. At a landscape scale (Level III), habitat monitoring will roll up individual Level II monitoring to evaluate if overall conservation practices address threats at the landscape level.

**Biological monitoring covers six categories for trumpeter swans in the selected Conservation Focus Areas. All six categories are measured and monitored the same way across the different Conservation Focus Areas. For selected site scale sites the first five categories data will be collected annually for at least five years on each category. At a landscape scale items 2-5 will be collected and tallied yearly and compared to long term trend data for a minimum of 20 years. Category six will be completed at a minimum of every five years and correspond to the Pacific Flyway trumpeter swan surveys. Biological monitoring of these six categories assess the threats identified and implemented as conservation measures at the site and landscape scale. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

All habitat monitoring for trumpeter swans will be housed with the MT PFW program. Biological monitoring for trumpeter swans will also be housed with the MT PFW program and shared annually with the Tri-State Trumpeter Swan Working Group.

Table 8: Westslope Cutthroat Trout

Landscape: Blackfoot River Watershed

Level II and Level III Monitoring

Threat	Goal	Conservation Practices	Habitat Outcome*	Level Measured
Elevated Water Tempera-tures	Cold Water	Irrigation Improvement	Water temperature	II &/or III
			Measured instream flows returned to stream	II &/or III
		Instream Flow Conservation	Water temperatures	II
			Measured instream flows returned to stream	II &/or III
		Alternative Stock water	Water temperature	II
			Measured instream flows returned to stream	II &/or III
		Installed shrubs & trees	Water temperature	II
			Survival rate	II
			Riparian condition score	II &/or III
		Riparian Fences	Water temperature	II
			Riparian condition score	II &/or III
		Grazing systems	Water temperature	II
			Riparian condition score	II &/or III
		Instream Restoration	Water temperature	II
			Width to depth measurements	II

Water Quality Impairment	Clean Water	Instream restoration	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
		Alternative Stock water	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
			Measured instream flows returned to stream	II &/or III
		Riparian Fences	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
			Riparian condition score	II &/or III
		Grazing systems	McNeal core sample	II
			Bank Erosion Hazard Index (BEHI)	II
			Riparian condition score	II &/or III
Migration Barriers	Connectiv-ity	Removing barriers	Site visit assessment	II
		Install fish ladders	Site visit assessment	II
		Install fish screens	Site visit assessment	II
		Instream restoration	Pattern, Profile and Dimensions before, as built and after	II
		Instream Flow Conservation	Measured instream flows returned to stream	II &/or III
Lacks complexity	Improve instream complexity	Instream restoration	Pattern, Profile and Dimensions before, as built and after	II
			Large Woody Debris Assessment (> 4” DBH & > 6’)	II
		Instream Flow Conservation	Measured instream flows returned to stream	II &/or III

Biological Outcomes **	**Level Measured**
CPUE before and after	II
CPUE compared to reference reach	II &/or III
Abundance in River	III
Fish screen effectiveness (CPUE)	II
Fish friendly barrier assessments	II
Other telemetry or genetic assessments	II and/or III

**Biological Outcomes for Level III (landscape scale) and in some cases Level II (site scale) are not tied to specific conservation practices, rather they will show outcomes based on the suite of conservation practices implemented based on the Threats and Goals established.

Level II is measured at the site scale and Level III is measured at the landscape scale. Level II or III habitat outcome indicates whether that activity is monitored for that specific conservation practice that was implemented based on the threat for that species.

*Habitat Monitoring will be done annually on selected sites to evaluate if the conservation practices implemented are successful at addressing the threats at the site scale (Level II) for those projects selected for monitoring. Examples: Increased instream flows after conservation practice implemented or riparian score pre and post conservation practice implemented. At a landscape scale (Level III), habitat monitoring will roll up individual Level II monitoring to evaluate if overall conservation practices address threats at the landscape level. Example: Instream flows increased in landscape; Average riparian score pre- and post-restoration in the landscape.

**Biological monitoring covers up to seven categories for westslope cutthroat trout in the Blackfoot River Conservation Focus Area. Catch per unit effort is site specific and is completed on most westslope cutthroat trout instream projects pre- and post-restoration by MT FWP. In many cases those CPUE measurements are then compared to reference reach data to gauge restoration success and the temporal response to WSCT from the restoration activities. Abundance in the Blackfoot River is completed by MT FWP bi-annually. Biological monitoring of these categories at the landscape scale (Level III) assess the threats identified and implemented as conservation measures at the site and landscape scale. Other biological monitoring may occur on connectivity projects that relate to removing barriers, assessing fish screens and larger scale telemetry to genetic assessments. Biological monitoring will be completed over the long term (greater than 20 years) as there could be some lag time between Habitat Outcomes and Biological Outcomes.

The appropriate scale (Order 1-4) at which biological monitoring will take place is species and landscape specific. That information will be included in the specific monitoring reports and not in this over-arching monitoring plan.

Most habitat monitoring for WSCT will be housed with MT FWP Region 2 Office and occasionally with the MT PFW program. All biological monitoring for bull trout will mostly be housed with MT FWP and occasionally with the Service or the U.S. Forest Service.

Attachment 1

MT PFW Level I Monitoring Form

SITE VISIT REPORT

Landowner Agreement #_____

Prism FA Award # _____

Final or Interim
Select One

Scope of Work
(Describe the restoration activities ex. fence and/or livestock watering facilities were installed to facilitate proper grazing management, grassland enhancement and migratory bird conservation).

Project Status
(To be used for an interim report ie…what's been done up to the 1 year mark)
(Example Language)-About 2 paragraphs

Species Benefited
_____. (You can reference conservation plans as/if you deem necessary)

Optional/ Literature Cited: (Example)

U.S. Fish and Wildlife Service [USFWS]. 2012. Partners for Fish and Wildlife Program Mountain-Prairie Strategic Plan, 2012–2016. U.S. Fish and Wildlife Service, Lakewood, Colorado.

Payment Method
Describe selection of the payment method (Ex. SF-270, this is a private landowner who chose to be waived from the ASAP system)

As the PFW biologist managing this project I certify that Landowner Agreement # ____(project type ex. Wetland enhancement) has been completed (or for interim…is in the process of being completed) in accordance with all provisions of the agreement.

_____ _____
PFW Biologist Date

_____ _____
Landowner / Cooperator Date

Attachment 2

MT PFW Level II/III

Monitoring Form

PLA Name: _____ Focus Area: _____

PLA Number: _____

Agreement Date: _____ Date Work Completed: _____

Priority Species: _____

Level II or III Monitoring: _____

Date of Monitoring: _____

Threat to Species	Goal to address threat	Conservation Practice Implemented	Habitat Outcome	Biological Outcome

Description of Monitoring Attachments:

_____

_____

_____

_____

Specific Location of Monitoring: (UTMs or Lat/Long and description with aerial map)

_____

_____

_____

_____

Level III Monitoring: (Description and justification of landscape scale selection including order 1st, 2nd, or 3rd)

Monitoring Database: (Entity in charge of monitoring and location of permanent database)

Summary of Findings:

Other Comments:

Attachment 3

Montana Ongoing Monitoring Efforts Listed by Focus Area

Big Hole River Watershed Focus Area

A. Arctic Grayling Surveys
   i. Annual river population surveys conducted by MTFWP
   ii. Annual watershed genetic surveys conducted by MTFWP

B. Greater Sage Grouse Lek Surveys
   i. Annual lek surveys completed on all known leks
   ii. Conducted by MTFWP, BLM, FS & FWS

Blackfoot River Watershed Focus Area

A. Bull Trout Surveys
   i. Annual redd surveys on all bull trout spawning streams conducted by MTFWP
   ii. Blackfoot River population surveys conducted every two years by MTFWP
   iii. Abundance surveys pre and post habitat restoration projects. Completed one year prior to restoration and for five years after restoration

B. Westslope Cutthroat Trout Surveys
   i. Blackfoot River population surveys conducted every two years by MTFWP
   ii. Abundance surveys pre and post habitat restoration projects. Completed one year prior to restoration and for five years after restoration

C. Trumpeter Swan Surveys
   i. Annual population surveys conducted by the Service
   ii. Surveys are completed on the ground and include territorial, nesting, hatching, fledging and overall population

D. Grizzly Bear Surveys
   i. Annual conflict monitoring conducted by MTFWP
   ii. Annual mortality monitoring conducted by MTFWP

Centennial Valley Focus Area

A. Arctic Grayling Surveys
   i. Annual Red Rock Creek population surveys
   ii. Conducted by the FWS each spring

B. Greater Sage Grouse Lek Surveys
   i. Annual lek surveys completed on all known leks
   ii. Conducted by MTFWP, BLM, FS and Service

C. Trumpeter Swan Surveys
   i. Annual population surveys conducted by the Service
   ii. Surveys completed by ground and air include territorial, nesting and fledging data. Surveys conducted since the 1930s

D. Grizzly Bear Surveys
   i. Annual conflict monitoring conducted by MTFWP
   ii. Annual mortality monitoring conducted by MTFWP

Glaciated Plains Focus Area

A. Four Square Mile Breeding Waterfowl Surveys
   i. Annual surveys of the five most common breeding waterfowl species in MT
   ii. Surveys are conducted on randomly selected wetlands within four square mile blocks of habitat and have been conducted for 8 years

iii. Survey coordinated by the FWS Habitat and Population Evaluation Team (HAPET) and conducted by the Service

B. Greater Sage Grouse Lek Surveys
   i. Annual lek surveys completed on all known leks
   ii. Conducted by MTFWP, BLM, FS and Service

Mission Valley Focus Area

A. Grizzly Bear Surveys
   i. Annual conflict monitoring conducted by the Confederated Salish and Kootenai Tribes (CSKT)
   ii. Annual mortality monitoring conducted by CSKT

B. Trumpeter Swan Surveys
   i. Annual population surveys conducted by CSKT
   ii. Surveys are completed on the ground and include, territorial, nesting, hatching, fledging and overall population

C. Bull Trout Surveys
   i. Annual population surveys conducted by CSKT
   ii. Surveys are conducted each year on the Jock River system assessing population structure

Musselshell Plains Focus Area

A. Greater Sage Grouse Lek Surveys
   i. Annual lek surveys completed on all known leks
   ii. Conducted by MTFWP, BLM, FS and Service

Northern Grasslands Focus Area

A. Four Square Mile Breeding Waterfowl Surveys
   i. Annual surveys of the five most common breeding waterfowl species in MT
   ii. Surveys are conducted on randomly selected wetlands within four square mile blocks of habitat and have been conducted for 8 years
   iii. Survey coordinated by the Service Habitat and Population Evaluation Team (HAPET) and conducted by the Service

B. Greater Sage Grouse Lek Surveys
   i. Annual lek surveys completed on all known leks
   ii. Conducted by MTFWP, BLM, FS and Service

Rocky Mountain Front Focus Area

A. Four Square Mile Breeding Waterfowl Surveys
   i. Annual surveys of the five most common breeding waterfowl species in MT.
   ii. Surveys are conducted on randomly selected wetlands within four square mile blocks of habitat and have been conducted for 8 years
   iii. Survey coordinated by the Service Habitat and Population Evaluation Team (HAPET) and conducted by the Service

B. Grizzly Bear Surveys
   i. Annual conflict monitoring conducted by MTFWP
   ii. Annual mortality monitoring conducted by MTFWP

Swan Valley Focus Area

A. Bull Trout Surveys
   i. Annual redd surveys on all bull trout spawning streams conducted by MTFWP

B. Grizzly Bear Surveys
   i. Annual conflict monitoring conducted by MTFWP
   ii. Annual mortality monitoring conducted by MTFWP