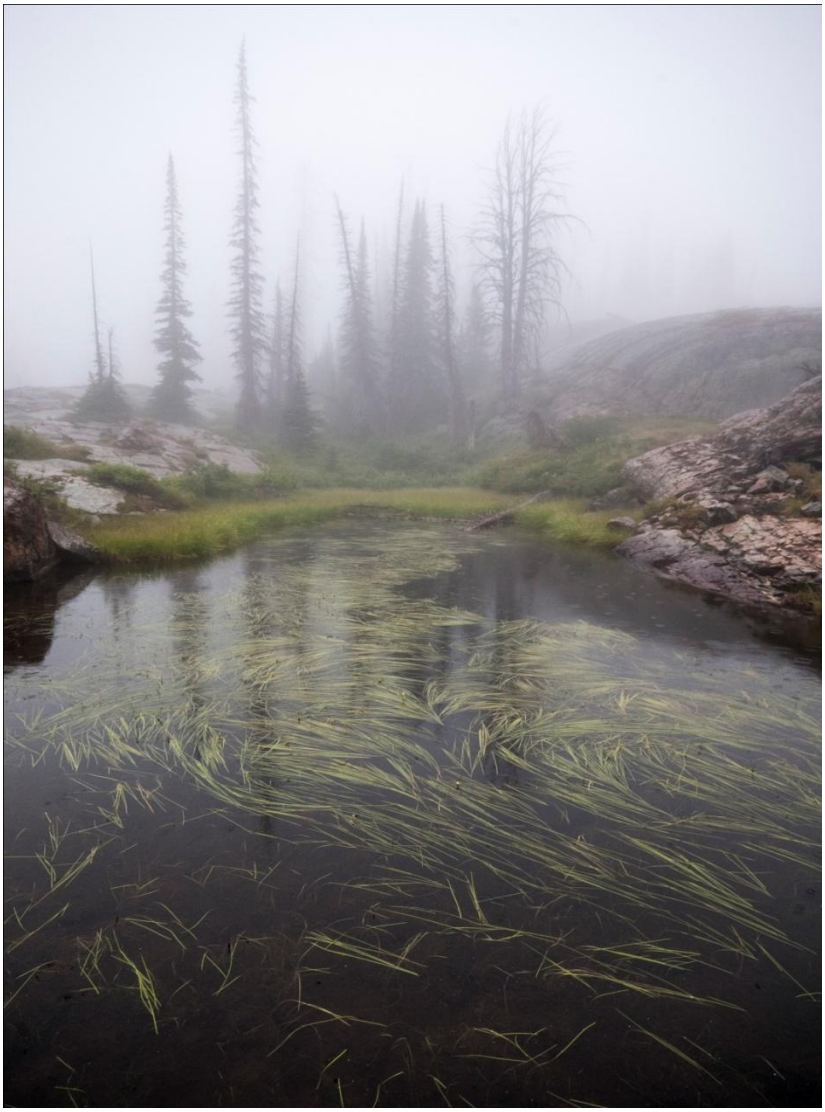
# SWAN VALLEY – MONTANA LEGACY PROJECT
# RESTORATION PLAN



**Prepared for The Trust for Public Land**
**By Lisa Bay Consulting**
**July 2012**

THE TRUST for PUBLIC LAND

CONSERVING LAND FOR PEOPLE

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# RESTORATION PLAN

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# 1. INTRODUCTION

The Trust for Public Land (TPL) has worked since the early 2000s to conserve the magnificent Swan Valley, in the heart of the Crown of the Continent, a 10-million-acre international region still supporting all the native species encountered by Lewis & Clark over 200 years ago. Because of the documented biological richness of the valley and the region, and the wildlife connections the Swan Valley provides between iconic public lands — such as Glacier-Waterton International Peace Park and the Bob Marshall and Mission Mountains Wilderness Areas— TPL and The Nature Conservancy (TNC) acquired nearly 66,000 acres of Plum Creek Timber Company lands in the Swan in 2009-2010 (see **Figure 1** at the end of this section). These acquisitions were part of the 310,000-acre Montana Legacy Project (MLP), and in turn addressed a problematic and century-old checkerboard pattern of land ownership in the Swan.

As of February 2012, 44,820 acres of the 66,000-acre Swan purchases was donated to the Flathead National Forest, about 1,920 acres have been acquired by Department of Natural Resources and Conservation (DNRC), and 620 acres was conveyed to Montana Department of Fish, Wildlife & Parks (MFWP). About 16,500 acres have been placed under conservation easement with MFWP, including lands yet to be conveyed into public ownership.

It is the 14,600 acres of checkerboard MLP tracts remaining to be acquired by DNRC and potentially added to the Swan River State Forest (SRSF) that are the subject of this restoration plan. Ultimately, this acquisition would consolidate checkerboard sections under a single, larger DNRC-SRSF ownership and management unit (see **Figure 2** at the end of this section).

With the acquisition anticipated by year-end 2012, TPL sees the opportunity to be nimble in achieving swift and collaborative restoration while the lands remain under private ownership and while several partners with the same conservation/restoration interests can be marshaled around common goals. To that end, this plan identifies several restoration projects over a three-year timeframe aimed at ameliorating sediment delivery into key bull trout habitat, improving public access management, providing for

noxious weed control, advancing invasive lake trout eradication, and providing for wetlands assessment and restoration (see section **3. Restoration Project Development**).

According to the Swan Ecosystem Center's (SEC's) website, the Swan Valley lies in both Missoula and Lake Counties. Population in local communities totals about 1,000 people largely supported by the timber industry and the lumber mill at Seeley Lake. Employment also includes education, outfitting, building, and services. Seasonal residency is not uncommon, including many retirees who bring skills and boost volunteerism in the valley. The website states that, *"Most residents enjoy the rural way of life and seem satisfied to be in a community with minimal services and commercial development."*

During the preparation and implementation of this Plan, TPL remains steadfast in its commitment to involve the community and aid in the local desire of ensuring both a healthy economy and a healthy forest.

## Partners

As the subject lands' current owner, TNC is providing scientific veracity, technical support for project development, and fundraising assistance in preparing and implementing this plan. DNRC is providing biological, land management, and forestry expertise; logistical support in restoration planning; and a funding partnership. MFWP is providing biological and technical expertise, as well as enforcement of the conservation easements protecting the land. U.S. Fish and Wildlife Service (USFWS) is conducting wetlands assessments, potential wetlands restoration project design, and potential project cost-share. Northwest Connections and the Swan Ecosystem Center (SEC) are the local community organizations acting as hubs to connect all partners with the appropriate local interests, technical expertise, funding sources, and relevant community-driven activities and commitments. Partnering with local organizations will ensure that this work employs local contractors skilled in forest restoration work.

Project work will be coordinated with current restoration efforts on public lands being conducted by the USFWS, USFS, DNRC, SEC, Northwest Connections, and the Southwestern Crown Collaborative. Numerous other organizations and agencies have an interest in or authority over projects proposed under this plan (see section **2. Collaboration and Coordination**).

## Vision for the Project

TPL's long-term vision for the Swan was written with the community years ago, and is just as relevant today. It is with the following in mind that this restoration plan for the MLP-Swan tracts has been written:

> "Our vision is to conserve, maintain, and enhance the incredible conservation values of this valley to provide a comprehensive and connected tapestry of forests and streams stretching from the Mission Mountains to the Bob Marshall Wilderness. . . Our forests will be restored until they are capable of sustaining the Swan's critical habitats, clean water, wildlife and fisheries, and forest-based economies. The Valley will continue to be a destination for hunting, wildlife viewing, and fishing. We also envision a day where people in the Valley and beyond will take pride in and help steward these extraordinary natural resources, and where the Swan will serve as a model nationally and internationally for conservation of critical landscapes adjacent, but integral, to our national parks and preserves."

**Objective 1:** With strategic restoration projects and planning aimed at eliminating stressors to key species, especially in the face of climate change, it is an objective of this plan to help maintain a fully functioning natural system in the Swan, to sustain the full complement of species and habitat here, and to enhance connectivity within the watershed and beyond.

*Performance measures include:*

- Number of eliminated sediment delivery sources to streams
- Reductions in the number of predatory lake trout in Swan Lake
- Acres and miles of roadsides of invasive species mapped and treated
- Number of projects in strategic locations to help advance grizzly bear recovery goals
- Acreage of wetlands inventoried for potential restoration

**Objective 2:** Enhance the economic stability of the Swan Valley by working with local self-determination groups and by bringing resources into the valley that enhance local knowledge and provide employment associated with restoration.

*Performance measures include:*

- Documented interactions with SEC, Northwest Connections, local contractors, technical experts, and agency personnel
- Total dollar amount of restoration projects performed
- Jobs provided

Once completed, TPL's Northern Rockies office plans to showcase this landscape-scale, community-driven restoration plan as a model for similar endeavors across TPL's project portfolio.

## Ecological Setting

The nearly half-million-acre Swan River watershed is directly connected to, and serves as a crucial connecting valley within, a vast wild area that still hosts all native flora and fauna present at the time of European settlement of North America. From its headwaters, the Swan flows north 60 miles where it ultimately empties into Flathead Lake. The Swan Mountain Range borders the watershed to the east while the Mission Mountains border to the west. Coniferous forests and wetlands dominate at the lower and mid-elevations, while open subalpine forests, meadows, and alpine areas are predominate above. A signature complex of lakes includes the larger Swan, Holland and Lindbergh lakes, as well as many smaller lakes and water bodies.

The Swan Valley is unique in comparison to other mountain valleys of Montana because of its abundance and diversity of low-elevation wetlands. According to TNC's *Swan Watershed Conservation Action Plan,* "… over 15 percent of the valley floor is covered with aquatic and wetland features. In general, riparian, wetland, and aquatic communities are disproportionately high in biodiversity as compared with surrounding upland natural communities (Greenlee 1999)." The Swan River Basin Restoration plan (Swan Ecosystem Center updated 2012) states that this basin holds more surface water than any other watershed in Montana.

Just under 7 percent of land in the Swan watershed is in private ownership; the remainder is largely held by the USFS, with a smaller portion (43,031 acres) currently held by DNRC. Land use practices by the USFS and corporate timber companies over the last century greatly altered historic vegetation patterns across the watershed. Yet with strategic restoration projects and planning aimed at eliminating stressors to key species, it is an objective of this plan to help maintain a fully functioning natural system in the Swan, to sustain the full complement of species here, and to enhance connectivity within the watershed and beyond.

According to the *Multi-Resource Management Plan for the Swan Valley Project,* prepared by MFWP and addressing the subject lands, the montane forests covering the 14,500± acres range in elevation between 3,150 and 7,000 feet. The dominant species are Douglas-fir, western larch, lodgepole pine, subalpine fir, grand fir, and Engleman spruce, and paper birch, while ponderosa pine, western white pine, western hemlock and western red-

cedar are present to lesser extent. Riparian and mesic areas support black cottonwood and quaking aspen. Stands vary in age from young regeneration to mature, and have been managed for commercial timber production for the past 100 years.

Extensive riparian and wetland habitats occupy the land. Goat, Squeezer, Woodward and South Woodward Creeks all contain important or major spawning areas for bull trout. The Swan River provides staging and migratory habitat as well, and provides the connection from upper tributaries to Swan Lake. These streams exhibit excellent water quality, offering "cold, clear, and connected" habitat requisite for bull trout. The Swan River is one of only two rivers in the state that supports stable bull trout populations. Other tributary streams provide excellent water quality that supports bull trout and other populations.

Several terrestrial wildlife species of concern inhabit this land. Canada lynx, and grizzly bear are listed as Threatened under the Endangered Species Act (ESA). A candidate for federal listing is the wolverine, and several plant species are locally rare. Approximately 70 percent of the global population of water howellia, a rare plant of vernal ponds, occurs within the Swan Watershed.

**Threats**

TNC, along with several partners including Northwest Connections, MFWP, and USFS, identified the following threats to natural systems in the Swan during TNC's 2005 Conservation Action Planning process: inappropriate forest management practices, exotic plant and animal species, residential development, fire suppression, increased human-caused mortality of carnivores, filling and excavating of wetlands, road construction and use, and water diversions. Because the MLP-Swan parcels are subject to only some of these threats, and restoration activities are limited in what they can address, we have confined the discussion to relevant topics.

- ***Forest Management Practices***

Timber harvesting has been practiced in the Swan and on the MLP tracts for most of the 20th century. Poor management practices, in some cases, have led to increased erosion and stream sedimentation, mechanical ground disturbance, change in flow regimes and channel stability, and decreased woody debris recruitment in streams. Stand size and

the species composition of forest stands have been significantly altered. This has been exacerbated by fire suppression; fire was a natural agent in determining the size, distribution, and type of forest cover prior to aggressive timber management.

- ***Exotic Species***

Of particular concern in the watershed and specifically on the subject parcels and connected habitat in the watershed are introduced trout species – rainbow, brook, and lake trout. Hybridization of genetically pure native cutthroat trout by rainbow trout, competition for habitat by brook trout, and predation on bull trout by lake trout in Swan Lake have resulted in the reduction in populations of bull and westslope cutthroat trout (WCT). Relatively few genetically pure populations of WCT remain in the watershed (20 percent of tributaries still contain genetically pure WCT).

According to MFWP's fisheries biologist Leo Rosenthal, the Swan Valley has historically been home to a stable, healthy bull trout population. However, in 1998 anglers began to occasionally catch adult sized (20-30 inch) lake trout from Swan Lake and the Swan River (into which the project parcels' tributaries drain). This caused alarm because lake trout are not native and are notorious for rapidly expanding and dominating fish communities in lakes with *Mysis* shrimp, at the expense of bull trout. In 2003, the level of concern was compounded when biologists gillnetted juvenile lake trout from Swan Lake during standard low-intensity sampling efforts, indicating that wild reproduction was occurring. Since 2003, lake trout catch by anglers as well as during MFWP biological sampling has continued to increase, indicating that the population is likely expanding. Research efforts since 2006 have focused on lake trout population demographics, and exploring potential techniques to reduce lake trout numbers while minimizing bull trout bycatch. Based on case histories from nearby waters, long-term management alternatives for this increasing lake trout population are necessary in order to maintain the popular bull trout populations.

From a terrestrial perspective, exotic plants are found along most of the roadways within the project tracts. Spotted knapweed is less of a threat within the forest environs because the dense shading by mature forests is inhospitable to knapweed. However, orange and meadow hawkweeds are rapidly spreading invasive species to forest lands

and occur on project tracts in scattered infestations. The extent and location of these infestations is currently being inventoried.

Exotic plants in vernal wetland systems are a serious threat. Reed canary grass has significantly increased in some wetlands within the Swan and can form a dense monoculture excluding the distribution and cover of native species, but infestations on the project parcels are unknown.

- ***Fire Suppression***

Public agencies have been very successful at suppressing wildfires over the last 70 years in the watershed. Fire history studies (Barrett 1998; Quigley 1997) reveal that low intensity and moderate intensity fires burned at a much higher frequency historically in the lower-elevation coniferous forests. The few low-elevation coniferous forests dominated by large-diameter early-seral species (ponderosa pine, larch, Douglas-fir and western white pine) that remain are being severely encroached on by seedling, sapling, and pole-sized trees, which causes stress to older trees, as well as makes them vulnerable to stand-replacing fires.

- ***Roads***

Project lands are heavily roaded from former industrial timber production. An extensive network of poorly maintained roads can alter surface and immediate subsurface hydrologic flow, which in turn can generate increased sediment into nearby streams and wetlands. Problem areas for known or potential sediment delivery into native trout streams have been identified via a road inventory by MFWP in fall 2011. Road systems have also created a vector for exotic species, such as spotted knapweed, orange and meadow hawkweeds, and reed canary grass into wetlands. Road use can contribute road dust (air pollution) and sediment runoff to streams.

- ***Climate Change***

The *Crown of the Continent Initiative Conservation Plan (External Version)* June 2010, contains the most extensive compendium of climate-related research to date relevant to this region. Although the document recognizes notable differences between subregions of the Crown, for instance between the east and west sides of the Continental Divide, it offers general trends and predictions applicable over the region's broadest reach. As in

most of the West, the Crown is becoming warmer and drier, and is predicted to remain on a similar trend into the next century. At a finer-scale level, output from TNC's Climate Wizard model also indicates a warming and drying trend for the Swan (pers. comm. Maria Mantas, Western Montana Science and Stewardship Director, The Nature Conservancy, 4/26/12). Increased wildfire frequency and intensity is expected to be a consequence of this climate scenario, as is a continued increase in invasive species. The following discussion relies largely on information, provided by Jim Bower, Fisheries Program Specialist for DNRC's Forest Management Bureau; and Leo Rosenthal, MFWP fisheries biologist; and focuses on habitat considerations and trends specific to the subject parcels, and management response apropos of climate change.

**Aquatic and Fisheries Resources**

When thinking about climate change effects on aquatic resources on the subject parcels and how to enhance climate resilience via restoration projects, temperature, hydrology, sediment transport and deposition, habitat connectivity and aquatic invasives all merit consideration.

Temperature data from streams flowing through the MLP-Swan parcels reveal that despite rising air temperatures across the region, stream temperatures over the last decade are staying well within thermal limits for both bull and westslope cutthroat trout. Sensor locations for Goat, Squeezer and Woodward, all important bull trout streams, are fairly far downstream in the watersheds, so they should generally be representative of the maximum temperatures found in the parcels' stream reaches. Below are the average values for Mean Weekly Maximum Temperature (MWMTs), considered to be a sensitive measure of chronic, peak seasonal thermal limits for fish. The generally accepted peak seasonal temperature for bull trout is 15° C. These three streams have average peak seasonal values at least 1° C below that thermal threshold, and the general trend during the monitoring period is a declining MWMT.

Goat, years 2001-2010 (n=8), average MWMT: 12.7 deg C (range: 10.9 – 14.4)
Squeezer, years 2001-2010 (n=8), average MWMT: 13.9 deg C (range: 12.5 – 14.7)
Woodward, years 2003-2010 (n=7), average MWMT: 13.8 deg C (range: 12.7 – 14.8)

One way to assess sediment conditions is through substrate scores, an assessment of streambed surface conditions. Particle size and the percentage of fine materials filling interstitial spaces (embeddedness) at the streambed surface are visually assessed. Low substrate scores occur with smaller streambed particles and greater embeddedness. Substrate scores are an indicator of general rearing habitat quality. Bull trout rearing habitat may be 'threatened` when substrate scores are below 10 and may be 'impaired` when substrate scores are below 9.

McNeil coring is a measurement of the proportion of various particle sizes within streambed gravels (McNeil and Ahnell 1964). McNeil core results are an indicator of risk of bull trout alevin entombment (fry unable to emerge from spawning gravels) and general bull trout and westslope cutthroat trout spawning habitat quality. Bull trout and westslope cutthroat trout spawning habitat may be 'threatened' or 'impaired' when McNeil core results (percentage of fine particles) are greater than 35 percent or 40 percent, respectively.

**Substrate Score**

Goat, years 1988-2009 (n=22), average: 11.0 (range: 9.5 – 11.7)
Squeezer, years 1988-2009 (n=22), average: 9.5 (range: 9.0 – 10.3)
Woodward, years 1996-2009 (n=14), average: 10.2 (range: 9.3 – 10.9)
South Woodward, years 1997-2009 (n=13), average: 9.8 (range: 9.0 – 11.2)

**McNeil Core**

Goat, years 1987-2009 (n=23), average: 29.6 (range: 26.2 – 37.3)
Squeezer, years 1994-2009 (n=16), average: 27.4 (range: 23.6 – 35.8)
Woodward, years 1996-2009 (n=13), average: 35.8 (range: 33.3 – 38.1)
South Woodward, years 1996-2009 (n=13), average: 29.2 (range: 24.9 – 34.1)

The average Substrate Scores for Goat and Woodward do not indicate an impaired condition; the average scores for Squeezer and South Woodward are considered 'threatened'. The average McNeil Core values for Goat, Squeezer and South Woodward do not indicate an impaired condition, and the average percent fines for Woodward are considered 'threatened'. Bower notes that although these measures are very useful monitoring tools, which are integral components of a broader monitoring program, they

are not necessarily sensitive to natural stream dynamics, such as sediment wave pulses. For instance, contrary to what these measures may indicate, Woodward and South Woodward are consistently some of the highest bull trout producing streams in the entire Swan Valley. Of other consideration, measured values from "reference" reaches in the region also tend to vary widely, and the measured sediment "effects" in Woodward and S Woodward may be offset [biologically] by the heavily spring-influenced, cold, and stable flow regimes.

As to the efforts to remove another stressor from the aquatic system, in June of 2009, MFWP initiated a three-year experimental removal of lake trout in Swan Lake. Measurable goals and specific success criteria outlined in the project EA are being used to evaluate the feasibility and effectiveness of alternatives to control expansion of the lake trout population. While data analysis is still underway, initial results are encouraging. Mortality rates of lake trout vulnerable to the size nets being used appear to be quite high, suggesting that this tool is effective in capturing numbers of lake trout necessary to reduce competition and predation on bull trout. Inadvertent bycatch of other fish species was relatively low throughout the three years of the project. Lake trout comprised approximately 90 percent of the total catch annually.

While several questions have been answered regarding the effectiveness of gillnetting as a tool to reduce lake trout in Swan Lake, some indices will likely require more time to be fully realized. These include seeing how the lake trout population responds to the high level of exploitation exerted from 2009-2011, and seeing how bull trout populations respond to the potential decrease in competition and predation. Therefore, a new EA was developed for a continuation of this project to learn more about the potential long term benefits of this experimental suppression. Funding opportunities are also currently being explored, as contract work associated with this project totals $90,000 annually. Based on the results of this assessment and other relevant considerations, MFWP, with recommendations from the Swan Valley Bull Trout Working Group, will consider how to conduct a continuation of this effort and if other changes are warranted in fisheries management of Swan Lake and the lake trout population.

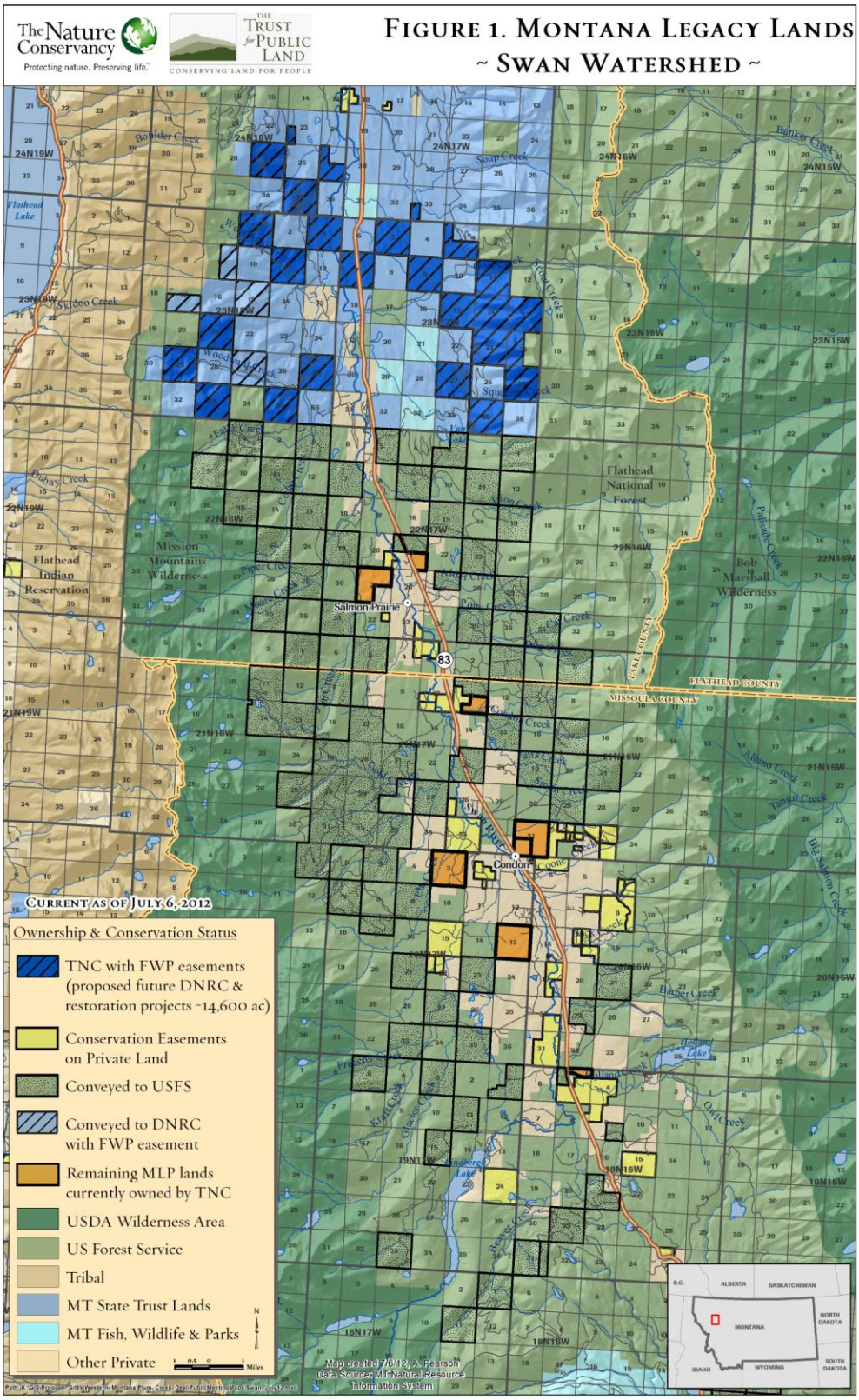
In terms of habitat connectivity considerations, streams on the subject parcels are relatively free of impoundments, diversions, and other impediments. The exceptions are noted under the proposed projects later in this document and involve bridges and culverts at road crossings of streams.

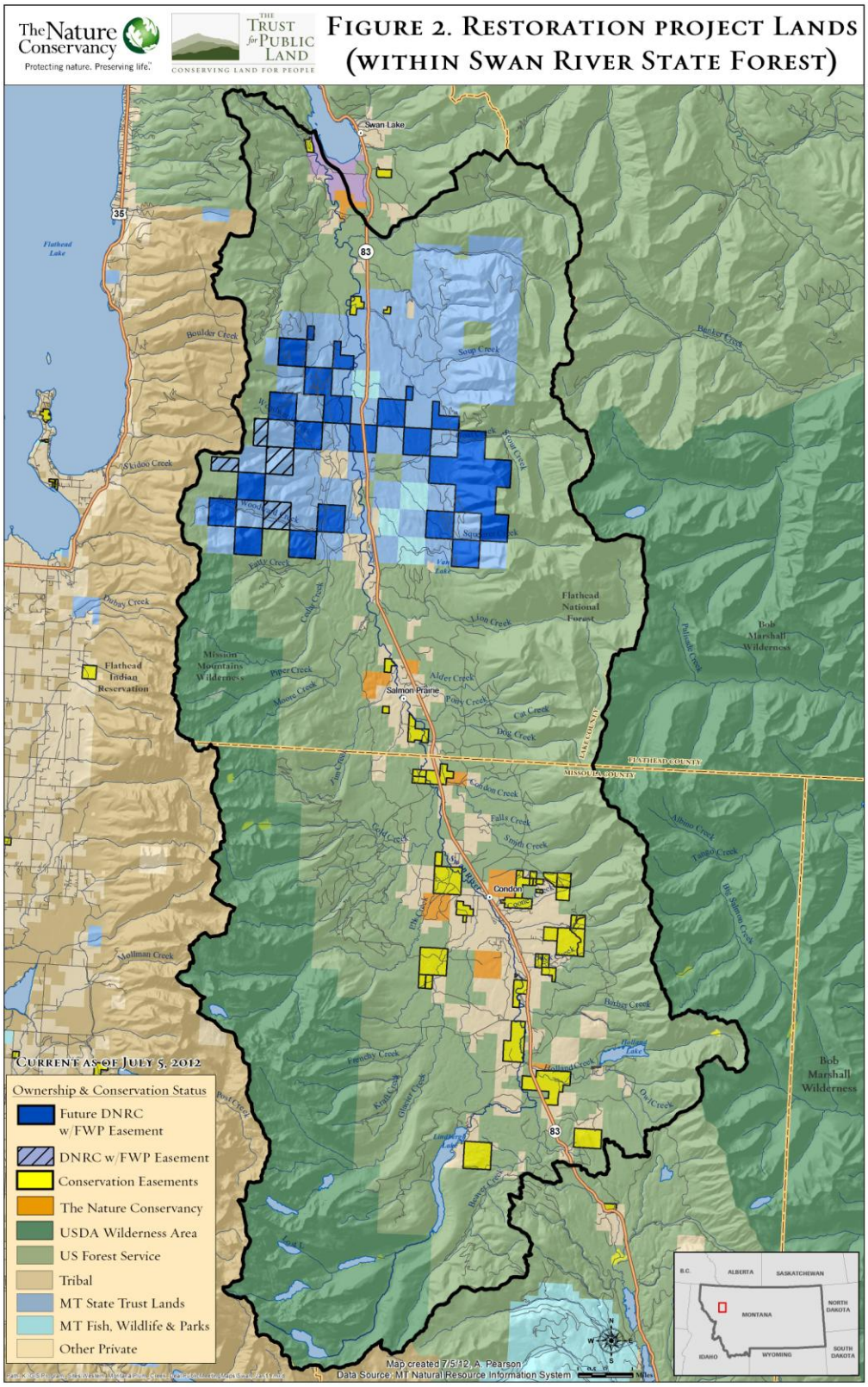
**Terrestrial Resources**

According to MFWP wildlife biologist John Vore, the entire undeveloped portion of the Swan Valley is core and connection habitat for wide-ranging species of species of special concern. These include grizzly bear, wolverine, Canada lynx, and fisher as well as their many prey species, snowshoe hare, red squirrels, and various rodent species. Carnivore movement in the watershed is both across the watershed takes place in all directions.

## Conclusion

In summary, the essential ingredients for a robust and fully functioning natural system are in place; the restoration proposed under this plan will help to remove or address stressors to that system, and enhance the chances for species survival across the iconic Swan Valley and beyond. Projects proposed later in this plan address the threats identified in this section.


The Nature Conservancy
Protecting nature. Preserving life.
The Trust for Public Land
Conserving land for people
Figure 1. Montana Legacy Lands
~ Swan Watershed ~
Current as of July 6, 2012
Ownership & Conservation Status
TNC with FWP easements (proposed future DNRC & restoration projects ~14,600 ac)
Conservation Easements on Private Land
Conveyed to USFS
Conveyed to DNRC with FWP easement
Remaining MLP lands currently owned by TNC
USDA Wilderness Area
US Forest Service
Tribal
MT State Trust Lands
MT Fish, Wildlife & Parks
Other Private
Flathead National Forest
Mission Mountains Wilderness
Flathead Indian Reservation
Bob Marshall Wilderness
Salmon Prairie
Condon
Flathead Lake
FLATHEAD COUNTY
MISSOULA COUNTY
LAKE COUNTY
Map created 7/6/12, A. Pearson
Data Source: MT Natural Resource Information System


The Nature Conservancy
Protecting nature. Preserving life.
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Conserving land for people
Figure 2. Restoration project Lands (within Swan River State Forest)
Swan Lake
Flathead Lake
Boulder Creek
Skidoo Creek
Dunay Creek
Flathead Indian Reservation
Mission Mountains Wilderness
Piper Creek
Monroe Creek
Salmon Prairie
Alder Creek
Poley Creek
Cat Creek
Dog Creek
Lion Creek
Flathead National Forest
Bob Marshall Wilderness
Condon
Falls Creek
Smith Creek
Elk Creek
Mollman Creek
Frenchy Creek
Krull Creek
Gibson Creek
Post Creek
Beaver Creek
Limberlost Lake
Bitter Creek
Oak Creek
Albino Creek
Tango Creek
Big Salmon Creek
Swan Creek
Squaw Creek
Wood Creek
Fish Lake
Holland Lake
Bunker Creek
Sugar Creek
Pablo Creek
Zero Creek
Cold Creek
Cedron Creek
FLATHEAD COUNTY
MISSOULA COUNTY
LAKE COUNTY
Current as of July 5, 2012
Ownership & Conservation Status
Future DNRC w/FWP Easement
DNRC w/FWP Easement
Conservation Easements
The Nature Conservancy
USDA Wilderness Area
US Forest Service
Tribal
MT State Trust Lands
MT Fish, Wildlife & Parks
Other Private
Map created 7/5/12, A. Pearson
Data Source: MT Natural Resource Information System
B.C.
ALBERTA
SASKATCHEWAN
MONTANA
NORTH DAKOTA
IDAHO
WYOMING
SOUTH DAKOTA

# 2. COLLABORATION AND COORDINATION

Current interest in, authorities over, and management of the MLP-Swan lands is complex. Numerous organizations of interest, agreements, and plans attest to the substantial attention these lands have attracted, and with good reason, given their biological importance. The following section discusses and displays these management authorities and relationships as they exist today. Please see **Table 2-1** at end of section.

During the course of plan preparation TPL pursued substantial contact with staff from the entities discussed below to seek opportunities for fulfilling shared goals, containing costs, and participating in cooperative conservation projects.

## Conservation Organizations

***The Nature Conservancy***

The MLP-Swan parcels are managed and stewarded under current ownership by TNC. Management guidance has been informed by TNC's Conservation Action Planning (CAP) process, the Native Fish Habitat Conservation Plan (HCP), and the Swan Valley Grizzly Bear Amended and Restated Conservation Agreement, June 1997.

Of particular interest to TNC are seven "conservation targets" identified in the CAP. Given the number of species endemic to the area and considered rare or imperiled, TNC chose seven biological attributes that it believes, if effectively conserved, can potentially assure the viability of 90 percent or more of the biodiversity represented in the Swan watershed.

**Conservation targets and associated nested targets within the Swan Watershed Conservation Area.**

| *Conservation Target* | *Nested Target* |
|---|---|
| Vernal Wetlands | Water howellia, amphibians |
| Other Wetlands | Fens, amphibians, numerous rare plants, riparian areas |
| Low Elevation Coniferous Forest | Soil, snags, large diameter early seral tree species, large diameter cedar, goshawk, flammulated owl |
| Common Loon | Lakes, bald eagles, amphibians |
| Forest Carnivores | Fisher, wolverine, Canada lynx |
| Grizzly Bear | |
| Native Trout | Bull trout, westslope cutthroat trout |

Source: *Swan Watershed Conservation Action Plan.* The Nature Conservancy. Update in progress as of summer 2012.

TNC's stewardship activities have been somewhat limited in anticipation of transferring the property into appropriate conservation ownership; however, it has approached as foremost the protection and enhancement of the above conservation targets. Current stewardship has been both passive (letting forests regenerate) and active (barricading roads and patrolling to prevent motorized access in grizzly bear habitat, reducing sources of sediment to streams, and controlling weed infestations).

It has also annually addressed its obligations under the Native Fish HCP. A Habitat Conservation Plan (HCP) is a long-term management plan authorized under the ESA to conserve threatened and endangered species. Section 10 of the ESA authorizes a landowner to develop a conservation plan to minimize and mitigate, to the maximum extent practicable, any impact to threatened and endangered species while conducting lawful activities such as harvesting timber. The NFHCP requires certain best management practices (BMPs) to address bull trout, westslope cutthroat trout, and mountain whitefish, and in particular, amelioration of hotspots of sediment delivery to streams on the property.

Finally, the Swan grizzly bear agreement has been vigorously followed to meet not just the letter but the intent of the agreement. Gate and barricade construction and repair, and public access patrol have been aimed at reducing human conflicts with carnivores as well as contributing to their habitat security. TNC has also provided biological/technical comments on wolf management by MFWP.

TNC helped provide biological credence to our restoration work and identified projects that furthered the objectives of this plan.

***Swan Ecosystem Center***

SEC organizes partnerships, volunteer activities, promotes private stewardship, and works collaboratively for the sustainable use and care of the Valley's public and private lands. It jointly manages the Swan Lands Coordinating Committee and its many subcommittees with Northwest Connections (see below).

SEC provided contacts with relevant organizations, helped with strategic funding decisions and documents relevant to this plan, and shared its list of local contractors so

that TPL can better fulfill its commitment to hire locally for restoration projects (ee **Appendix 1**).

***Northwest Connections***

Northwest Connections works in the Seeley, Swan and Blackfoot Valleys conducting ecological monitoring to: better inform management decisions; provide field-based education; build a repository of information on wildlife, habitat and linkages; and promote stewardship and conservation.

It jointly manages the Swan Lands Coordinating Committee and its many subcommittees with SEC and promotes economic opportunities and use of local contractors.

***The Wilderness Society***

TWS is dedicated to public land conservation in the Crown of the Continent and participates in both the Crown of the Continent Initiative and the Southwestern Crown Collaborative (see below). TWS contributed to current climate science and fundraising coordination for this project.

***Southwestern Crown Collaborative***

SWCC formed to develop and carry out a 10-year restoration and forestry-based economic plan for public lands in the southwest portion of the Crown of the Continent, known as the Collaborative Forest Landscape Restoration Program (CFLRP), and funded by the USDA. TPL coordinated with SWCC because CFLRP is intended to take an "all lands" approach; therefore, opportunities for data sharing, cooperation, cost-savings, and joint monitoring were possible.

## Agencies

***Department of Natural Resources and Conservation***

DNRC intends to acquire the MLP-Swan lands by year end 2012. The following management direction and authorities would apply to the subject parcels once ownership was achieved.

**Mission:** The Trust Land Management Division (TLMD) of DNRC manages state trust lands to produce revenue for the trust beneficiaries while considering environmental factors and protecting future income-generating capacity of the land. Under the Forest Management Program, the TLMD generates revenues for trust beneficiaries primarily through timber harvest on forested trust lands. DNRC manages it forested trust lands in accordance with the Administrative Rules of Montana (ARMs) for Forest Management, Title 36, Chapter 11, Subchapter 4 (ARMS 36.11.401 through 456) and the scientific principles articulated in the State Forest Land Management Plan.

**State Forest Land Management Plan (SFLMP)**

In 1996, DNRC adopted the SFLMP to provide field personnel with consistent policy, direction, and guidance of state forested lands. The premise of the plan is that the best way to produce long-term income for the trust is by managing intensively for healthy and biologically diverse forest. In the foreseeable future, timber management will continue to be DNRC's primary source of revenue and primary tool for achieving biodiversity objectives.

The SFLMP uses a coarse- filter approach to biodiversity by favoring an appropriate mix of stand structure and composition on state forest lands. A diversity of stand structures and composition provides a broad range of current and prospective trust revenues opportunities, including a sustained yield of timber, maintenance of forest health and biodiversity and other outputs, while reducing risks of catastrophic fires, and insect or disease. On lands of sufficient size and proximity, such as the Swan River State Forest, DNRC achieves its biodiversity objectives by managing for a desired future condition characterized by the proportion and distribution of forest cover types and structures (snags, coarse woody debris, large live trees) historically present on the landscape. When planning timber sales, DNRC assesses individual stand conditions including stand density, species composition, and insects and disease, before designing silvicultural prescriptions that would promote the development of desired future conditions.

Regarding climate resiliency in the face of fire, the major governing philosophy of forest management is to emulate landscape biodiversity dynamics using forest management techniques. Since the major natural disturbance on the landscape is fire, that is the

process DNRC tries to emulate, adapting management as better methodologies become available. Then, when fire does occur on state forest lands, it is intended to perform with more natural levels of variability and intensity.

The EIS analysis modeling of DNRC's HCP indicates that high levels of woody debris recruitment to streams (a major foundation for stream habitat complexity) are expected over the long-term compared to the "reference" condition. This should help address another stressor to fisheries during the era of climate change.

The SFLMP contains individual sets of Resource Management Standards for Biodiversity, Silviculture, Road Management, Watershed, Fisheries, T & E Species, Sensitive Species, Big Game, Grazing and Weed Management.

**Montana Environmental Policy Act (MEPA)**

Forest management activities conducted by DNRC on forested trust lands, including timber sales, are subject to the planning and environmental assessment requirements of MEPA. MEPA requires DNRC to prepare a written environmental review available to the public. This review may be a simple checklist, a more comprehensive environmental assessment (EA), or a more detailed Environmental Impact Statement (EIS). The EA checklist and EA are usually completed for smaller scale forest management activities and simple timber permits. An EIS is typically completed for larger complex timber sales. Some forest management activities that involve minor temporary uses of land with little or no disturbance may be classified as a categorical exclusion which requires the most limited analysis. The types of forest management activities that may qualify for a categorical exclusion include repair and maintenance of an existing road, reconstruction or modification of an existing bridge, replacement or removal of an existing culvert, issuing permits for use of temporary roads, and installing closure devices on existing roads.

**Administrative Rules for DNRC Forest Management**

In 2003, the Resource Management Standards adopted under the SFLMP and guidance developed under those standards were codified into Administrative Rules (ARMS). The Forest Management ARMS (ARM 36.11.401 through 36.11.456) provide the legal

mandate for DNRC to operate its forest management program and make project-level decisions.

**DNRC Forested State Trust Lands Habitat Conservation Plan**

DNRC recently completed an HCP and associated EIS covering forest management activities on lands that provide habitat for two terrestrial and three aquatic species. Three of these species are currently federally listed and two of the species have the potential to be listed under the ESA in the future. The three ESA listed species covered in the HCP are: 1) grizzly bear; 2) Canada lynx; and 3) bull trout. The two sensitive aquatic species that may be listed under ESA in the future are: 1) westslope cutthroat trout; and 2) interior redband trout (not on the subject lands).

The DNRC HCP is part of an application for obtaining an incidental take permit from the U.S. Fish and Wildlife Service (USFWS) in accordance with Section 10 (a) (1)(B) of the ESA. An incidental take permit would authorize DNRC to accommodate the loss ("take") of federally listed species under its routine activities covered under the HCP. DNRC completed the HCP/ EIS and received an incidental take permit in December of 2011.

The HCP consists of a series of commitments regulating DNRC forest management activities on the forested trust lands covered by the HCP. The conservation strategies were developed through the collaborative efforts of DNRC and the USFWS and were designed to provide conservation benefit for the HCP species, while ensuring DNRC timber harvests continue to offer a predictable and long-term flow of income to the trust beneficiaries.

Since MLP-Swan lands may be incorporated into the existing Swan River State Forest owned by DNRC, the following HCP commitments are relevant:

**Roads**

- Conduct transportation planning as part landscape level or timber sale project level planning.
- Roads deemed unnecessary for future use will be reclaimed and left in a stable condition not requiring maintenance.

- Comply with BMPs as necessary to avoid unacceptable adverse impacts.
- Use existing roads in streamside management zone (SMZ) only if potential water quality impacts can be adequately mitigated.
- Under the terms of the Swan Grizzly Bear Conservation Agreement and the HCP, DNRC inspects primary road closures annually to ensure effectiveness and identify potential maintenance needs.
- Under the HCP, DNRC committed to a comprehensive transportation plan for the existing Swan River SF (does not include acquisition lands). This plan specifically identifies:
  1) Existing road locations and miles by road class, activity category, and restriction type;
  2) Approximate location of 70.3 miles of new permanent road construction needed for future forest management;
  3) Allowance for a total of 5 miles of temporary road in any given year. These roads will be reclaimed following use.
- Inventory existing roads and stream crossing structures used for forest management activities and abandoned roads to identify existing and potential sources of sediment delivery to streams, lakes and other aquatic resources.
- Site-specific corrective actions will be developed and implemented on sites identified as having high or moderate risk of sediment delivery. Primary mechanisms to achieve these actions are development and implementation of site-specific road improvements, road upgrades, road reclamation, culvert replacement and/or removal, and other mitigations measures necessary to bring problem road segments up to minimum BMP standards.
- Specific timelines for completion of corrective actions are included in the HCP and the Multi-Resource Management Plan adopted under the Swan Valley Conservation Easement.
- DNRC water resource specialist reviews all road management activities associated with forest management projects located in watershed supporting HCP fish species. Water resource specialists make recommendations that are integrated into the development of standards, contract specifications, site-specific BMPs and other mitigation measures designed to reduce the risk of sediment delivery to streams.

- Incorporate goals, target and prescriptions contained within approved total maximum daily loads (TMDLS).

**Connectivity**

- Provide connectivity to adult and juvenile bull trout, westslope cutthroat and redband trout during low to bankfull flows by emulating streambed form and function at stream crossing sites.
- Inventory all existing road stream crossings and assess fish passage and connectivity.
- Design and implement corrective action on problems sites not providing the levels of connectivity described above.
- Timelines for implementing corrective actions on problem sites. Timelines vary between HCP and the conservation easement.
- Requirement to fully meet BMPs at each site with corrective actions being implemented.

During the preparation of this Plan, TPL coordinated closely with DNRC staff on project selection and design, a biologically informed road system plan, weed inventorying and budgeting, forestry considerations, and fundraising.

***Montana Department of Fish, Wildlife & Parks***

The subject lands have been permanently protected from development by three conservation easements held by MFWP; the first on 7,204 acres in the east portion of the tracts in September 2006, with former owner Plum Creek Timber Company (now owned by TNC). The second two easements protected 4,477 acres of the western parcels and 4,872 acres including Swan River parcels, respectively, in December 2010, and were signed with TNC. The responsibility to manage the lands per the conservation easement terms transfers with ownership.

The funding sources secured to pay for the easements in addition to MFWP included Bonneville Power Administration to partially mitigate the construction and inundation of Hungry Horse Dam. Mitigation funds help pay for permanent protection and mitigation of resident fish habitat. The federal Forest Legacy Program contributed funding to "protect environmentally important private forest lands threatened with

conversion to non-forest uses," and the federal HCP program invested to conserve habitat for listed and at-risk species. Numerous private contributions helped secure the match for these public grants as well, from philanthropic foundations and individuals who were convinced of the rich, diverse, and fast-disappearing habitat the lands represent. Implicit and explicit in the management plan attached to the three easements is the intent to perpetuate the land as a professionally managed forest resource, while providing for the conservation of habitat values, recreation, and other conservation values, such as viewshed and open space.

As part of the conservation easement baseline reports to establish current conditions and easement terms on the parcels, MFWP conducted forest and forest road inventories. Easement terms address primarily forest management standards; riparian zone management (including riparian exclusion areas along Goat, Squeezer, South Woodward and Woodward Creeks and the Swan River); and road management and density, particularly to protect grizzly bear habitat and reduce sediment delivery into streams.

The easement terms reside with the land, so the current owner of the land must inform MFWP of activities to be undertaken, including the proposed restoration projects and the transfer of land ownership. Initial coordination has taken place between TPL, TNC, and MFWP about these restoration projects.

TPL relied on property baseline reports and road inventories prepared by MFWP to inform this Plan, as well as on biological expertise for project design and implementation.

***Flathead National Forest, Swan Lake Ranger District***

Flathead National Forest lands, administered by the Swan Lake Ranger District, lie adjacent to some of the MLP-Swan parcels and/or share linear attributes, such as roads and water courses that suggested coordinated management or projects. As well, USFS staff provides management of fish and wildlife on Forest lands.

TPL worked with USFS aquatics staff on project design, and coordinated on funding opportunities, weed inventories, and road system design.

### *U.S. Fish and Wildlife Service*

U.S. Fish and Wildlife Service has jurisdiction over species listed under the ESA, including grizzly bear, bull trout, Canada lynx and water howllia. As well, the Service enforces the Swan Valley Grizzly Bear Conservation Agreement that stipulates certain management practices, open road densities, and other considerations that were agreed to by signatories for conservation of the grizzly bear. Service staff also participates in and plan recovery activities for other listed species.

To accommodate listed species considerations and habitat improvement, TPL coordinated with Service staff on potential wetlands restoration, coordinated on bull trout enhancement projects, and crafted public access management projects that would improve the on-the-ground efficacy of the Conservation Agreement.

### *Lake County Conservation District*

Lake County Conservation District is the coordinating agency for obtaining permits to work in riparian areas. The District will be contacted and any applicable permits sought before riparian projects are implemented.

### *Missoula and Lake County Weed Districts*

While the subject parcels are in Lake County, Missoula County Weed District is most active in weed inventories and projects for the Swan Valley. TPL contacted the Districts to determine if any collaborative weed projects were possible during the course of preparing this plan.

## Crown of the Continent Collaboratives

### *Crown Managers Partnership*

The Crown Managers Partnership is a consortium of Canadian and U.S. public agencies that shares information and expertise to protect the biological richness of the Crown of the Continent. TPL contacted the Partnership for data sources that would inform the restoration plan.

*Crown of the Continent Conservation Initiative*

CCCI was created to "articulate and advance a long-term conservation vision for the Crown," and as such is a collaboration of international conservation interests that formulated a Conservation Plan to protect and steward its full biological function. Actions proposed in this restoration plan follow the climate-focused guiding principles and help to implement some of the goals and objectives contained in the CCCI Conservation Plan.

## Conclusion

TPL will implement this Plan with this road map in mind -- of the many mutual interests, potential partnerships, and authorities that need to be considered moving forward.

**TABLE 2-1**

| MLP-SWAN PARCELS RESTORATION – COLLABORATION & COORDINATION | | | |
|---|---|---|---|
| **Entity** | **Authority/Relationship to Project** | **Interest Areas** | **Points of Contact** |
| **Conservation Organizations** | | | |
| The Nature Conservancy | Current owner of Project lands; obligation to carry out Native Fish Habitat Conservation Plan; land management activities in accordance with SVGBCA | • Forestry<br>• Aquatics<br>• Wildlife<br>• Climate and planning data<br>• Road systems<br>• Weed management<br>• Monitoring<br>• Measures | • Maria Mantas<br>• Maria Mantas<br>• Maria Mantas<br>• Maria Mantas<br>• Steve Kloetzel<br>• Steve Kloetzel<br>• Maria Mantas<br>• Maria Mantas |
| Swan Ecosystem Center | Local watershed organization coordinating and working toward a sustainable biological and economic future for the Swan. Manages Swan Valley Coordinating Committee with Northwest Connections (below), including several subcommittees listed at far right. | • Aquatics, water quality monitoring<br>• Wildlife<br>• Forestry<br>• Road systems<br>• Wetlands<br>• Local economic opportunity | • Anne Dahl, native fish, water quality committees<br>• Scott Eggeman, wildlife<br>• Roger Marshall, forestry<br>• Anne Dahl, water quality<br>• Scott Eggeman, wetlands<br>• Anne Dahl |

| | | | |
|---|---|---|---|
| Northwest Connections | Swan-based community organization focused on biological monitoring that informs better management, education and field studies | • Monitoring<br>• Swan Valley Coordinating Committee | • Melanie Parker<br>• Melanie Parker |
| The Wilderness Society | Conservation of public lands in the Crown of the Continent | • Opportunities for collaboration<br>• Climate data | • Anne Carlson<br>• Anne Carlson |
| Southwestern Crown Collaborative (under the USDA Collaborative Forest Landscape Restoration Program) | Carrying out a 10-year restoration and forestry-based economic plan for public lands in the SW Crown | • Opportunities for cooperative projects<br>• Opportunities for data sharing<br>• Monitoring protocols<br>• Measures | • Gary Burnett, Prioritization Committee<br>• Megan Birzell<br>• Cory Davis, Monitoring Committee |
| **Agencies** | | | |
| Department of Natural Resources and Conservation | Potential future owner of Project lands | • Forestry<br>• Road systems<br>• Aquatics<br>• Wildlife<br>• Weed management | • Dan Roberson<br>• Dan Roberson<br>• Jim Bower<br>• Ross Beaty<br>• Dan Roberson |
| Montana Fish, Wildlife & Parks | Hold and enforce terms of 3 conservation easements over the Project lands , and party to associated Management Plan; manage public aquatic and terrestrial species | • Conservation easement enforcement<br>• Aquatics<br>• Wildlife<br>• Road systems | • Hugh Zackheim, Alan Wood<br>• Leo Rosenthal<br>• John Vore<br>• Alan Wood |

| | | | |
|---|---|---|---|
| U. S. Forest Service, Flathead Nat'l Forest, Swan Lake Ranger District | Manage public lands nearby, share road system, share in management of aquatic and terrestrial species | • Aquatics<br>• Wildlife<br>• Road systems<br>• Weeds | • Beth Gardner<br>• Jane Ingebretsen<br>• Rich Kehr<br>• Tris Kassner |
| U.S. Fish and Wildlife Service | Responsible for endangered species management; primary enforcer of the Swan Valley Grizzly Bear Conservation Agreement | • Drained wetlands<br>• Grizzly bear management<br>• Bull trout | • Greg Neudecker<br>• Greg Neudecker<br>• Greg Neudecker |
| Lake County Conservation District | Permitting agency for riparian projects | • Riparian project permitting | • 406-676-2841 |
| Missoula and Lake County Weed Districts | Coordinate weed information and management at the county level, esp. along roadways | • Weed inventories | • Jed Little (Missoula) 406-258-4200<br>• Tom Benson<br>• 406-883-7330 Lake County |
| **Crown Collaboratives** | | | |
| Crown Managers Partnership | A consortium of public agencies working to improve the biological health of the Crown | • Opportunities for data sharing | • Erin Sexton |
| Crown of the Continent Conservation Initiative | A collaborative of Canadian and U.S. NGOs sustaining the culture/biology of the Crown | • Climate data<br>• Implementation of shared goals | • Stephen Legault<br>• Stephen Legault |

# 3. RESTORATION PROJECT DEVELOPMENT

## Development of the Restoration Projects List

When considering projects to be contained in this restoration document, TPL determined that any project considered should: 1) aid in habitat resiliency in an era of climate change, 2) address critical habitat /species needs within a 1-to- 3-year timeframe, 3) be within TPL's and its partners' ability to secure project funding, 4) add benefit to similar conservation work in the valley, 5) be allowable under the MFWP conservation easements covering the properties, and 6) fit with agency priorities.

TPL put each of the proposed projects to the litmus test of the Crown of the Continent Conservation Initiative's (CCCI's) climate principles to determine that it would:

- Reduce pressures on species and ecosystems from sources other than climate change.
- Increase the extent and effectiveness of protected areas.
- Enhance connectivity within and around the region.
- Manage/restore ecosystem functions.
- Consider needs of keystone, indicator, and charismatic species.
- Access and apply the best available science and support or create effective monitoring systems
- Engage communities to understand new challenges and create solutions.
- Collaborate at appropriate scales.

At the outset of this planning process TPL staff met with or contacted every entity listed in **Table 2-1** to formulate a project list. One of the first meetings was with the Southwestern Crown Collaborative to apprise that group of our intent to conduct private restoration in the Swan Valley, similar to what SWCC was successfully accomplishing on public lands. TPL expressed the desire to be collaborative in any way possible and sought avenues for collaborative use of technical expertise, restoration equipment, and potential monitoring. While TPL has remained actively engaged in SWCC meetings and progress, it has become apparent that the Swan Ecosystem Center/Northwest Connections are the best option for collaborative funding, local

engagement, and technical expertise. Having said that, the work that SWCC and TPL are respectively accomplishing on private and public lands in the Swan will have cumulative benefit to the entire Crown of the Continent ecosystem.

Subsequently, TPL contacted the Crown Managers Partnership to share our intent and to determine if the CMP had identified and mapped restoration needs in the Swan. At this time, such mapping is at its initial stages and therefore not at an adequately fine scale to be of use to this project. CCCI was also contacted to inform that collaborative of how this restoration could help meet the goals of that group and to determine if any funding or updates were available at this time appropriate to this project. We mutually agreed to remain in communication.

TPL staff then met with MFWP staff to understand the terms of the three conservation easements covering the subject lands and to determine what restoration needs the agency thought would be critical. Staff recommended that one area important to maintenance of a healthy aquatic system would be to address sources of sediment delivery from forest roads into bull trout or westslope cutthroat trout streams.

TPL staff then met with TNC as the landowner to determine the level of forest restoration inventory completed to date. TNC's position was that what the *forested areas* needed most was rest and recovery, not active "restoration." The exception was in treating for limited fuels reduction in the Wildland Urban Interface (WUI) where allowable, on lands slated for national forest ownership, just south of the project lands. Further, TNC staff concurred that aquatic projects should be paramount as several agency biologists had already drafted a list of water-quality improvement and fisheries projects to address imperiled bull and westslope cutthroat trout. When queried further, TNC suggested that: 1) public access management projects could strengthen the efficacy of the Swan grizzly bear agreement aimed at enhancing the bear's habitat security; 2) weed management would improve habitat for native plants and wildlife forage; and, 3) additional wetlands inventory, assessment, and restoration could all aid in habitat health and climate resiliency.

TPL and TNC also discussed the benefit of inventorying the entire Swan River State Forest road system in combination with roads on the subject lands, to determine which

roads could be removed and "stored" so as to eliminate redundant and/or superfluous roads that might inhibit habitat connectivity and effectiveness. While all agreed that a biologically informed road plan would be ideal, we also agreed that until final ownership of the lands is settled, ultimate landowners' objectives would influence the configuration of the road system. Therefore, we decided, with the exception of one road upgrade to remove a sedimentation threat, not to include road restoration in our suite of projects.

As DNRC was the most likely future owner of the subject lands TPL and TNC then met with staff from that agency to understand the opportunities and constraints each entity would face in working together toward restoration of these former industrial timberlands. Since that initial meeting, DNRC and TPL staffs have worked closely on restoration funding opportunities, site visits to determine project feasibility, project design and analysis, and communication on how projects would be implemented given the uncertainty of ownership and timing of land transfer(s).

## Proposed Restoration Projects

Projects resulting from these initial meetings and subsequent interagency and multi-group site visits are displayed below and on **Table 3-1** and **Figure 3** in addition to photos at the end of this section. Projects are listed in priority of importance to protect water quality and aquatic resources.

### *Aquatic and Water Quality Projects*

1. <u>Upper South Fork Woodward Creek Bridge Reconstruction</u>
   NESE, Section 29, T23N R18W. After a May 2012 site tour with DNRC, MFWP, TPL, TNC and SEC staffs, this remained the highest priority project. According to local fisheries biologists, South Woodward Creek is one of the top two bull trout strongholds in the Swan. On this relatively new yet unstable bridge, the deck is salvageable, but the concrete abutments are failing with the potential for mass wasting and direct delivery of fine sediments into the stream. This event would be expected to negatively affect downstream redds (bull trout spawning beds). Road approaches require best management practices (BMP) upgrades as well. At the May field assessment, all agreed that the risk of failure is fairly certain; it is only a matter of time when it will occur. DNRC engineers have

determined that to fix the bridge and stabilize the wing-walls along with administration would cost an estimated $60,000.

2. Section 35 Swan River Tributaries Culvert Upgrade
   NESE, Section 35, T24N R18W. This is primarily a water quality project, as this is a brook trout stream. However, it delivers water into the Swan River via Whitetail Creek, and thereby contributes to the greater aquatic system that supports bull trout. The project includes: one undersized 3′ culvert needing replacement with a 8.5′ culvert to overcome flow capacity and instream erosion issues, and associated road BMP upgrade work. The soft subsurface associated with this project site will require a substantial amount of road fabric and the importing of shale to ensure a stable foundation for the new culvert and roadbed. Estimated construction cost: $34,600

3. Section 1 Swan River Tributaries Culvert Upgrades
   W2, Section 1, T23N R18W. These projects represent primarily water quality work at present, as these are brook trout streams. However, these streams are part of the bigger aquatic system that supports bull trout, more so because they are direct tributaries to the Swan River and therefore can readily deliver sediment to Swan Lake (an impaired water body). This project includes: three undersized culverts needing replacement with larger culverts or bridges, and associated road BMP upgrade work. After a June engineering assessment by DNRC, it was determined that the middle culvert had a fairly low risk of sediment delivery and was still passing fish. Since the best solutions for its replacement would involve building a bridge with a price tag of around $71,400, DNRC suggests leaving that culvert in place for now. Of the remaining two culverts, one has ongoing flow capacity and road erosion risk issues and would require 3-to 5 days' work along with substantial fill excavation at an estimated cost of $58,400. The other exhibits long-term road and instream erosion risks and could be replaced with a 48″ round culvert for $8,400. Total estimated construction cost: $66,800

4. Lower South Fork Woodward Creek Culvert Removal/Upgrade
   NWNE and NENE, Section 35, T23N R18W. The upstream site is a slightly-undersized 6′ culvert that acts as a beneficial fish barrier, keeping brook trout from migrating upstream, and thereby displacing a pure westslope cutthroat trout population. After the May site visit and confirmation of upstream access for DNRC (DNRC can physically access W2W2 Sec 36 via an upper spur in NESE

Sec 35, but will need to acquire Sec 35 from TNC) it was determined that the downstream culvert could be removed and the adjacent stream banks and floodplain restored ($6,000). After a June engineering assessment, DNRC suggests also going to the upper culvert and improving drain dips to divert water away from that culvert crossing ($1,000). Estimated construction cost: $7,000

5. South Woodward Creek Road Upgrade, E2E2 Sec 29, T23N R18W
   This segment of road has had some recent upgrades during the White Cliff /Porcupine timber sale, but needs a gravel cap to further mitigate potential road erosion and sediment delivery into S. Woodward Creek. This project might offer a cost reduction if it was conducted at the same time as priority item #1 above (Upper South Fork Woodward Creek Bridge Reconstruction). Estimated construction cost: $6,000

6. Removal of Lake Trout from Swan Lake
   A lake trout removal project is being carried out through the Swan Valley Bull Trout Working Group. The group has finished with a 3- year suppression program that has shown promising results, so MFWP has issued an EA that proposes 5 more years of similar suppression. Bull trout in Woodward Creek rear in Swan Lake. Nonnative lake trout have hit bull trout hard, so lake trout suppression is critical. Failure to deal with lake trout could render habitat restoration in Woodward Creek ineffective. Estimated cost for three years of the five-year project: $270,000

7. Public Access Management
   This would entail replacing failing gates and barricades; these structures are needed to restrict public motorized use of forest roads and ensure habitat security for a range of wildlife, including grizzly bears. Keeping roads open only to public non-motorized use also greatly reduces weed management costs, the introduction of new invader weeds, and road BMP maintenance costs. At this time, it is proposed to replace two worn-out gates and 10 compromised barricades. Estimated Cost: $4000/large pipe gate, $500/barricade = $8,000 for gates and $5,000 for barricades. Estimated total construction cost $13,000

8. Weed Mapping and Management
   TPL has awarded a contract for weed mapping of the road network on the subject lands to facilitate strategic weed management. DNRC and USFS have conducted ongoing weed management on the many shared roads under the current checkerboard ownership. Non-native hawkweeds are an increasing new invader of concern. Weed mapping cost: $7000. Initial weed management (herbicide spraying, biocontrol releases, disturbance and roadside seeding). Estimated total cost $15,000/year 1.

9. Wetlands Assessment and Restoration
   In August, SEC staff in partnership with USFWS staff will use aerial photos to assess whether drained wetlands exist in the project lands or on nearby MLP lands slated for future U.S. Forest Service ownership. Previous experience has shown 10 to 20 percent of wetlands have been drained in the Swan. If drained wetlands are found USFWS would conduct a field survey to determine what was needed to restore the individual wetlands (often only a plug at the drain site). USFWS would then put together a design proposal and cost estimate for restoration under the Partners for Fish and Wildlife Program in September. This would be reviewed by MFWP to make sure it is compliant with its conservation easements and a landowner agreement signed by TNC to get the work done. A 50 percent cost share is offered under the program. Estimated cost: $50,000.

10. Wildfire Management
    Local community groups, DNRC, and TNC see the potential to prevent catastrophic wildfire while boosting the local economy by conducting fuels reduction projects within the WUI on MLP lands just south of the Project Lands. It is proposed to conduct these treatments on up to 188 acres. Estimated cost: $150,000 (These projects will be pursued only if funds currently being sought from the federal State and Private Forestry Program are forthcoming.)

***Projects were chosen for the following reasons:***

- Reduce stressors to native species by improving water quality, limiting human interactions, reducing predatory lake trout, potentially reducing the threat of catastrophic wildlife, and managing invasive weeds
- Increase the habitat effectiveness of the Montana Legacy Project lands by facilitating and/or implementing restoration
- Enhance connectivity by removing barriers (culverts and poorly designed bridges) and, in some cases, by limiting human presence

- Manage ecosystem function by promoting design of a biologically informed Swan River State Forest road system plan, improving riparian habitat and water quality, and installing barriers against inappropriate public access
- Implement needed infrastructure to reinforce the intent of the Swan Valley Grizzly Bear Conservation Agreement
- Help eradicate lake trout in Swan Lake that prey on bull trout
- Facilitate working collaboratively with TNC, SEC, USFS, USFWS, DNRC and MFWP to apply the best scientific underpinnings to our projects
- Allow TPL to work with Northwest Connections, SEC, TWS, and SWCC to engage local community members' actions, expertise and monitoring, and solutions

***CCCI goals partially implemented by this restoration plan include:***

- Goal 3. Shift land management practices on public lands and certain private lands outside designated wilderness and parks to promote conservation of native species, resources stewardship, and habitat restoration with climate adaptation principles and strategies.
- Goal 4. Conserve and protect ecologically significant private lands through fee acquisition, conservation easement (covenant), and other conservation tools to sustain and enhance crucial core and connectivity habitats (terrestrial and aquatic), to ensure long-term stewardship of protected lands, and encourage private lands stewardship activities generally.
- Goal 5. Maintain healthy flows of clean water and protect aquatic species, including top-level native piscivores, in the mountain headwaters and lower montane regions.
- Goal 8. Protect aquatic habitat and native species against new human stressors.
- Goal 10. Reduce existing stressors to native cold-water fish species that are especially vulnerable to climate warming scenarios.
- Goal 11. Ensure that wide-ranging wildlife have safe room to roam and are able to utilize a variety of habitats when stressed by climate-related conditions and disruptions.
- Goal 13. Maintain key wildlife linkage zones and movement corridors across vulnerable, mixed-ownership habitats.

## Costs

Maximum costs total $679,400, not including a road system plan. Of that, $169,000 has been secured to date and $510,400 is yet to be raised. However, the $150,000 for fuels reduction treatments will not be pursued if the State and Private Forestry Comp Grant

is not forthcoming, because no other source of funding has been identified and this project is not highest priority.

## Funding

Several promising funding sources have emerged to implement this plan. Those currently being pursued by TPL are briefly discussed below.

**State and Private Forestry - State Comprehensive Grants Program**

This program is federally competitive and administered through DNRC, aimed at restoring and enhancing forested lands and local forest economies. The state generally submits up to four grant applications to this program annually. TPL submitted a pre-proposal to this source and secured one of the four state slots for the 2013 funding cycle.

Up to $300,000 is available per application from this program and proposal submittal is due in September. Road improvement projects are not funded, but many of the remaining projects would be eligible, as well as forestry treatments.

**National Forest Foundation – Matching Awards Program**

The NFF awards money to restoration projects that can demonstrate direct benefit to National Forest lands. The S. Woodward bridge project has been targeted for this source as many of the other funding sources identified will not cover this project.

The NFF requires a 1:1 match, a letter from the Forest Supervisor, and local citizen involvement, in this case, in the pre-application stage. Applications are made in January and July and have a one-year timeframe. Up to $25,000 may be available from this source.

**Bonneville Power Administration**

Bonneville Power Administration administers a fund to partially mitigate the construction and inundation of Hungry Horse Dam. Mitigation funds help pay for permanent protection and mitigation of resident fish habitat.

This source has been sought for the Lake Trout eradication project and is a potential for the S. Woodward bridge project through its capital fund.

**Future Fisheries**

This is a competitive state-run program to restore and enhance fisheries resources in Montana. S. Woodward bridge and S. Woodward Road upgrades would be potential projects for this source. Funding amounts would probably not exceed $30,000.

**Private Fundraising**

TPL is committed to raise $100,000 toward these restoration projects from private individuals and foundations. This money would be spent with the purpose of fulfilling match requirements to leverage other sources, or to pay for projects for which other sources are not available.

**Collaborative Forest Landscape Restoration Program**

The Southern Crown Conservation Collaborative has applied for and secured several million dollars of funding from this 10-year forestry restoration and enhancement program for use on National Forest lands in the Swan. This funding and work is complimentary to project work proposed under this plan. A portion of the CFLRP funding will be applied to the lake trout eradication project in FY'13.

**U.S. Fish and Wildlife Service-Partners for Fish and Wildlife Program**

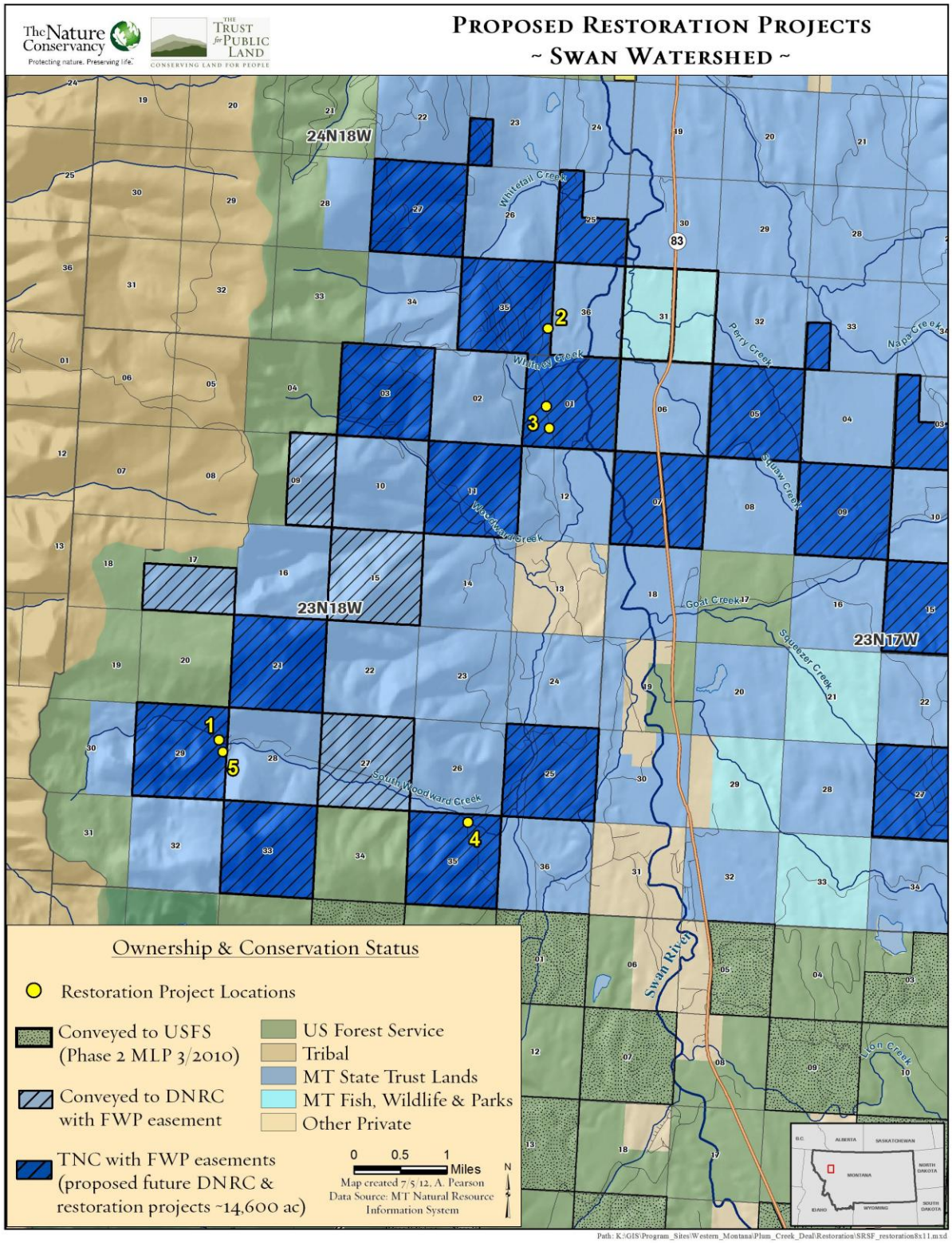
The Partners program funds stewardship and restoration on private lands. This source of funding would be applicable to wetlands restoration as long as TNC owns the land; it would not be available under public ownership.

**TABLE 3-1**

**Swan – MLP Potential Restoration Projects and Funding Sources**

| Project | Estimated Cost | Potential Funding Sources |
|---|---|---|
| 1. Upper South Fork Woodward Creek Bridge Reconstruction (Section 29) | $60,000<br>($10,000 secured) | • **$10,000 secured from DNRC**<br>• Future Fisheries<br>• National Forest Foundation<br>• BPA<br>• 223 Grant/Conservation District |
| 2. Section 35 Swan River Tributaries Culvert Upgrade (tribs via Whitetail Creek) | $34,600 | • Private fundraising |
| 3. Section 1 Swan River Tributaries Culvert Upgrades (direct tribs to Swan River) | $66,800 | • Private fundraising |
| 4. Lower South Fork Woodward Creek Culvert Removal and Bank Restoration (Section 35) | $7,000 | • Private fundraising |
| 5. South Woodward Creek Road Upgrade (Section 29) | $6,000 | • Future Fisheries<br>• Private fundraising |
| 6. Three Years' Removal of Lake Trout from Swan Lake | $270,000<br>($152,000 secured) | • **$72,000 secured for FY'13 from CFLRP**<br>• **$50,000 secured for 2012 from MFWP**<br>• **$30,000 secured for FY'14 via a MFWP request to BPA**<br>• $45,000/requested from NFWF Bring Back the Natives Program<br>• State and Private Forestry Comp Grant |
| 7. Public Access Management Improvements | $13,000 | • State and Private Forestry Comp grant |
| 8. Weed Mapping and Management | $52,000<br>($7,000 secured) | • Weed mapping – **$7,000 secured from TPL**<br>• Weed management – State and Private Forestry Comp Grant ($15,000 year/3years) |
| 9. Wetlands Assessment and Restoration | $20,000 | • State and Private Forestry Comp Grant<br>• USFWS Partners for Fish and Wildlife Program |
| 10. Fuels Reduction Projects | $150,000 | • State and Private Forestry Comp Grant |
| | **TOTAL $679,400**<br>($169,000 secured;<br>$510,400 needed) | |

## FIGURE 3


The Nature Conservancy
Protecting nature. Preserving life.
The Trust for Public Land
CONSERVING LAND FOR PEOPLE
PROPOSED RESTORATION PROJECTS
~ SWAN WATERSHED ~
24N18W
23N18W
23N17W
Whitetail Creek
Whitney Creek
Woodward Creek
South Woodward Creek
Perry Creek
Squaw Creek
Goat Creek
Squeezer Creek
Napa Creek
Lion Creek
Swan River
83
1
2
3
4
5
Ownership & Conservation Status
Restoration Project Locations
Conveyed to USFS (Phase 2 MLP 3/2010)
Conveyed to DNRC with FWP easement
TNC with FWP easements (proposed future DNRC & restoration projects ~14,600 ac)
US Forest Service
Tribal
MT State Trust Lands
MT Fish, Wildlife & Parks
Other Private
0 0.5 1 Miles
Map created 7/5/12, A. Pearson
Data Source: MT Natural Resource Information System
N
Path: K:\GIS\Program_Sites\Western_Montana\Plum_Creek_Deal\Restoration\SRSF_restoration8x11.mxd

**Stream Crossing Photos**

*All photos taken 01/05/12 by Steve Kloetzel, TNC*

South Woodward Bridge, looking south. Note movement of tall concrete on north abutment.

North abutment. Note cracking and lag-bolt pulled through concrete due to movement.

Looking towards south abutment

South Woodward Creek, upper 6' CMP, inlet.
Beneficial Fish Barrier.

Outlet of same
Note perching

Inlet of lower South Woodward pipe, to be removed if possible.
This is a 6' squash pipe.

Outlet of same

Section 1, southernmost 3’ pipe, inlet
4’ fill, 2.5’ bankfull stream, 6” perched on outlet

Outlet of same

Section 1, second 3' pipe
Note makeshift beaver/trash rack. 4' fill, 3.5' BF stream

Outlet of same

Inlet of northernmost Section 1 - 3’ pipe
10’ fill, 7-8’ BF stream

Outlet of same

Section 35 Swan Tributary 3' pipe, inlet
4-5' BF stream, 6' fill  Note makeshift trash/beaver rack.

Outlet of same

Sample of newer small bridge ("box culvert") built by DNRC.
Located in T24N R18W Section 35, SE, on Whitetail (Upper Porcupine) Road.

# 4. IMPLEMENTATION

Implementation of these projects is somewhat complicated by the uncertainty surrounding property ownership. As mentioned above, ownership of these lands could transfer to DNRC before the end of the year; that could affect permitting, environmental reviews, communications about easement compliance, and potentially funding sources, as reflected in **Tables 3-1** and **4-1.**

Implementation of this plan has already begun with TPL's funding of a weed inventory of the project lands in June 2012. Results of that inventory will be available by September 2012 to facilitate potential fall weed management, as well as strategic weed planning and monitoring over subsequent field seasons.

**Table 4-1** at the end of this section displays the implementation components, responsibility depending on ownership, timing of project work, and estimated cost of project.

## TABLE 4-1 PRELIMINARY PROJECTS IMPLEMENTATION

| Project Name | Eng. Assessment needed ($) | MEPA | Permitting needed? | RFP/Specs development – who/when | Bid letting Yes/no – who/when | Est. implement date | Cost estimate |
|---|---|---|---|---|---|---|---|
| 1) Upper S. Fork Woodward bridge reconstruction | DNRC to pursue engineering needs and costs of project by end of June. | DNRC EA Checklist or Categorical Exclusion –if DNRC owned; none if TNC owned | 124 from FWP to DNRC, or 310 permit from Cons. Dist. if TNC owned | DNRC engineering analysis and design by end of June | TPL /TNC –if TNC is the landowner. TPL, TNC, or DNRC if DNRC took ownership of land. | | $145,000 |
| 2) Section 35 Swan River tribs culvert upgrade | DNRC NWLO design complete. | Probably EA Checklist if DNRC owned; none if TNC owned. | 124 if DNRC has ownership; 310 if TNC has ownership. | Engineering by DNRC during June 2012 | TPL or TNC if TNC is the landowner. TPL, TNC or DNRC if DNRC took ownership of land. | Possibly fall of 2012 if funding is secured, or field season 2013 | $34,600 |
| 3) Section 1 Swan River tribs culvert upgrades | DNRC NWLO complete. | Probably EA Checklist if DNRC extent if DNRC owned; none if TNC owned. | 124 if DNRC has ownership; 310 if TNC has ownership. | Engineering by DNRC during June 2012 | TPL/TNC — if TNC is the landowner. TPL, TNC, or DNRC if DNRC took ownership of land. | Possibly fall of 2012 if funding is secured, or field season 2013 | $66,800k |
| 4) Lower South Fork Woodward Culvert removal and bank restoration | The culvert removal and bank restoration would be contingent on DNRC acquiring Sec. 35 for forest access above; DNRC NWLO design complete. | Probably EA Checklist if DNRC owned; none if TNC owned. | 124 if DNRC has ownership; 310 if TNC has ownership. | Engineering by DNRC during June 2012 | TPL/TNC — if TNC is the landowner. TPL, TNC, or DNRC if DNRC took ownership of land. | 2013 | $7,000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5) S. Woodward Creek Road Upgrade | Road segment needs a gravel cap to further mitigate potential road erosion and sediment delivery into S. Woodward Creek | DNRC EA Checklist or Cat. Ex. –if DNRC owned; none if TNC owned | Permits probably not needed | Engineering by DNRC during June 2012 | | | $6,000 |
| 6) Removal of lake trout from Swan Lake | Initiate 5 more years of lake trout gillnetting from Swan Lake to protect native bull trout. | FWP has issued EA that will be final by July 1. | FWP is responsible for any needed permits. | FWP responsibility. | FWP responsibility. | 2012 - 2014 | $460,000 ($80,000 secured) |
| 7) Public access management imps. | Replace two failing gates and 10 compromised barricades to ensure habitat security for a range of wildlife, including grizzly bears. | None ( | Permits not needed | TPL/TNC | TPL/TNC/DNRC depending on ownership. | 2012-2013 depending on securing funding | $13k |
| 8) Weed Mapping and Management | Weed mapping for strategic treatments would be followed by integrated weed management. Treatment would be complimented by treatments on DNRC lands and shared roads. | Probably Categorical Exclusion if DNRC owned; none if TNC owned. | Permits probably not needed; certified applicator licenses required | DNRC could probably help TNC or TPL with the spec development. | TPL or TNC if TNC is the landowner. TPL, TNC or DNRC if DNRC took ownership. | 2012 | $23k ($7,000 secured for mapping) |
| 9) Wetlands Assessment and Restoration | Wetlands assessment to determine restoration opportunities and restoration work | None for assessment. Possible for future projects. Archeological reconnaissance by USFWS. | None for inventory. Possible for future projects. | SEC and USFWS | TPL in cooperation with USFWS and TNC | 2012 | $50,000 |
| 10) Fuels Reduction projects | Fuels reduction to prevent catastrophic fire and encourage multi-species forest conversion. | None if TNC owned; EA if DNRC owned. | Would need to comply with MFWP CE if under easement. | TNC and/or DNRC would develop specs | TNC or DNRC | 2012-2014 | $150,000 |

# 5. MONITORING

As TPL gained more knowledge of the projects it would propose and of the partners with which it would work most closely, a different monitoring picture emerged than we had anticipated. In short, our partners have established monitoring for many of these project types and we will be the beneficiaries of joining those monitoring programs. If any methods/projects need improvement, TPL feels confident that the monitoring and oversight in place will be sufficient to guard the investment in these projects and/or provide enough information for adaptive strategies to be deployed.

***Sediment Remediation***

The Water Quality Committee of the Swan Lands Coordinating Committee, staffed by both the Swan Ecosystem Center and Northwest Connections, is fulfilling a grant agreement with the state that requires monitoring of sediment loads within the watershed, methods to reduce sediment delivery into impaired water bodies, and evaluation of the effectiveness of implementation measures. DNRC conducts monitoring of both Woodward and S. Woodward Creeks as well to measure the effectiveness of its sediment remediation work. Projects 1 – 5 are aimed at reducing sediment delivery to the aquatic system in Woodward and S. Woodward Creeks (and eventually into Swan Lake) that support imperiled bull trout and westslope cutthroat trout. Although the *specific locational* beneficial effects of these projects will be difficult to determine, they will be cumulatively measured and monitored with both the SLCC and DNRC due diligence efforts. In any case, we expect to see a reduction in the amount of sediment loading after these projects, and in the case of the S. Woodward bridge, will know that a major sediment threat has been ameliorated. This work is critical because these streams also feed into Swan Lake that has been listed as impaired for sediment.

***Lake Trout Eradication***

Monitoring the effects of lake trout eradication will be pursued by MFWP. Current data collected by the agency during three years of eradication effort has shown substantial diminishment of year classes of lake trout with only moderate effects on bull trout (from bycatch during gillnetting). As MFWP continues this project over the next 5 years, a close eye will be kept, both on the effect on lake trout and on keeping any deleterious effects on bull trout at a minimum.

### *Public Access Management Improvements*

Monitoring of these projects will be generally confined to effectiveness: in other words, do they appear to be preventing vehicular access into areas closed to such use? If not, additional access prevention measures may be taken to prevent trespass. Effectiveness monitoring will be conducted by either DNRC or TNC staff, depending on ownership.

### *Weed Mapping and Management*

The weed mapping currently being conducted by TPL on the subject lands will offer a baseline from which either TNC or DNRC could strategically plan its management efforts and subsequently monitor progress against the baseline.

### *Wetlands Mapping and Management*

At this time, it is proposed to conduct a wetlands assessment, design of wetland restoration needs, and restoration work in calendar year 2012. Monitoring needs and protocols would be developed once eventual restoration projects were determined and implemented. Semi-annual monitoring of improved habitat condition would be conducted by USFWS under landowner agreement that would run with the land for a prescribed period.

### *Fuels Reduction Treatments*

As owner of the land, TNC or DNRC would write the prescriptions for fuels reduction and it would be responsible for monitoring for desire conditions.

## APPENDIX 1

| Contractor Name | Owner | Phone/Email | Mailing Address | Specialty | Credentials | Equipment |
|---|---|---|---|---|---|---|
| 25-06 Construction | Dennis Jette | 406-754-2506 | 534 White Swan Drive **Condon**, MT 59826 | Custom grading and snowplowing | 40 years experience | John Deere grader 770 Rock rake 9.5 ft., Dodge Cummin pickup 9.5 ft Boss plow |
| A & S Logging | Fred Styler & Bill Anderson | 406-754-2890 jackson@blackfoot.net | P.O. Box 1093 **Condon**, MT 59826 | Skidding, telescopic boom processing, loading and hauling, mechanical falling, road construction & reconstruction, brush piling | ALP Certified | Two Timco 445 feller bunchers, two telescoping delimbers (Daewoo and Kamatsu), 3 John Deer skidders. |
| Brushbull Forestry, Inc. | Joe Heffner | 406-239-6793 jheffner@live.com | PO Box 1345 **Florence**, MT 59833 | Specializing in fire hazard reduction, professional thinning, pruning, slashsing, hand piling slash, burning, hand fireline construction, hazard tree removal. We do hand work projects, dealing with smaller diameter trees. | | |
| Bull Creek Forestry | Leelyn A.Cahoon | 406-677-4112 leelyn.cahoon@yahoo.net | PO Box 192 **Seeley Lake**, MT 59868 | In-woods processing, landing-based logging | ALP Certified | Forwarders, skidders, in woods processors |
| CLB Custom Landworks, LLC | Chris Barnes | 406-754-2671 CLBLAND@blackfoot.net | 5980 Highway 83 **Condon**, MT 59826 | Fuels reduction, landscaping, fencing, tree service, bark-mulch-topsoil-gravel, stump pulling, hazard tree removal | Forestry Degree (Associates) | 2 skid steers with brush grapples, brush hog, excavator, 12" chipper |
| Coyote Forest Management | Bill Moore | 406-754-2473 (o) 406-754-2787 (h) coyoteforestbill@blackfoot.net | PO Box 1070 **Condon,** MT 59826 | Rough sawn lumber, custom milling, thinning | | N/A |
| CRC Land Improvement | Bo Holst | 406-261-0859 or 406-756-5853 crcland@hotmail.com | 1405 Riverside Road **Bigfork**, MT 59911 | Tree removal, brush mastication, fuels reduction, pasture mowing, wildlife plantings | | John Deere CT332 track machine with grapple and masticating head, tractors and other equipment |
| Double Ott Trucking | Kvande Anderson | 406-754-3063 (h) 406-239-3671 (m) kji@blackfoot.net | P.O. Box 1335 **Condon**, MT 59826 | Log hauling, tree thinning, fuels reduction, logging, water service, mulching, brushing | ALP Certified | Timberjack forwarder, Caterpillar skidder, Ecolog harvester with a Logmax 6000 head, Ecolog forwarder, Caterpillar track mounted miniloader/mulcher, two Kenworth log trucks (one self loader), Peterbuilt water tender (with lowboy). |
| Euchre Mountain Logging | Nathan Richardson & Alan Richardson | 677-4326 or 754-0050 or 677-0060 eml@blackfoot.net | 6100 Hwy 83 **Condon**, MT 59826 | Thinning, commercial logging, road construction & reconstruction | ALP Certified | 911 Valmet rubber tired harvester w/fecon mulcher |

| Contractor Name | Owner | Phone/Email | Mailing Address | Specialty | Credentials | Equipment |
|---|---|---|---|---|---|---|
| Greenwing Restoration, LLC | Andrea Morgan | 406-793-0028<br>amorgan@blackfoot.net | PO Box 107<br>**Ovando**, MT 59854 | Comprehensive restoration services specializing in native revegetation. Services include design, project management, implementation, monitoring and maintenance. Projects range from streambank stabilization, wetland revegetation, tree-planting, custom native seed collection to native landscaping and seeding. | 20+years experience, U of M Forestry Degree | |
| Half of Horse Logging | Clay Bohlman | 406-928-2146 | PO Box 1279<br>Seeley Lake, MT 59868 | Horse logging | | skidsteer, horses and their equipment |
| Hamilton Enterprises | Dan Hamilton | 406-754-2445<br>dphamilton@blackfoot.net | 42180 Salmon Prairie Rd<br>**Swan Lake**, MT 59911 | Road building, heavy equipment hauling, logging | ALP Certified | lowboy truck, D6 Cat, skidsteer, grader |
| J & E Contracting, LLP | Eddy Jungers | 406-677-2339, 406-677-3217<br>jungersfamily@blackfoot.net | PO Box 284<br>**Seeley Lake**, MT 59868 | | ALP Certified | |
| JRD Enterprises | James Daenzer | 406-754-2717<br>cell 677-4007<br>cnd2717@blackfoot.net | 585 White Swan Dr.<br>**Condon**, MT 59826 | Land clearing, ponds, logging, road construction/reconstruction, gravel and black dirt hauling | ALP Certified | 650H John Deer dozer with 6-way blade and winch, 312 excavator (with 3 quick detach buckets, 570 John Deer Road grader, 548E John Deer grappel skidder, D4E Cat Dozer with pyramid pads (low ground pressure), 493D feller buncher with Timco barsaw, 644E John Deer loader with 3 yard bucket, 1975 International 10 yard dump truck, 25 ton hoister tilt bed trailer, 416C Cat backhoe. |
| Lad Inc. Property Services | Les & Dar Kearney | 406-754-2729<br>cnd2729@blackfoot.net | 884 Old Barn Road, **Seeley Lake**, MT 59868 | Tree and brush removal, custom logging and thinning, fuels reduction, stump grinding, custom milling | | John Deer skidder/cable machine, 4x4 compact utility tractor |
| Luckow Logging | Randy Gordon & Kyle Luckow | 406-886-2272<br>victory_ranch@hotmail.com | P.O. Box 5200<br>71232 MT Hwy 83<br>**Swan Lake**, MT 59911 | Lot preparation, road building, selective logging and thinning, masticating, fence building, fuels reduction. | ALP Certified | John Deer 120C excavator with masticating head, 548G grapple skidder, 650G John Deere crawler, brush rake, Cerco 200 log loader, Dansco pull through delimber, dump trucks, back ho grader, fence post pounder head for excavator |
| Montana Forest Restoration, LLC | Jon Haufler | 406-677-0024<br>Jon_Haufler@emri.org | PO Box 851<br>**Seeley Lake**, MT 59868 | Fuels reduction, chipping, selective tree harvest, brushing, slash clean-up, light on the land forest management | Forester, Wildlife Biologist, Wetlands Ecologist | Kubota 57hp winch skidder, grapple brush rake, inwoods chipper, slash shredder, snowplow, mobile trailer |

| Contractor Name | Owner | Phone/Email | Mailing Address | Specialty | Credentials | Equipment |
|---|---|---|---|---|---|---|
| Monture Creek Land Management, Inc | Dylan Brown | 406-531-6805<br>fax 406-677-6805<br>monture.creek@gmail.com | PO Box 1516<br>**Seeley Lake**, MT 59868 | GPS mapping, weed management, MPB spraying, thinning, wildlife consulting, light logging | M.S. Wildlife Biology, Society of American Foresters, MT Weed Control Assoc | Tree sprayer, Toyota pickup sprayer, ATV sprayer, backpack sprayer, GPS |
| Mountain River Hydrology | Todd Butts | 406-882-4752 or<br>212-6675<br>unclebuds@interbel.net | P.O. Box 84<br>**Trego**, MT 59934 | Trimble GPS Mapping, hydrologic evaluations, watershed assessments, forest road inventories | 18 years experience | GPS, Smith Root Electrofisher |
| Mountain View Log Homes | Joe Anderson | 406-754-2749<br>mtnview@blackfoot.net | PO Box 1250<br>**Condon**, MT 59826 | | | |
| Native Yards | Giles Thelen | 406-543-2532<br>giles@nativeyards.com | 1023 Elm<br>**Missoula**, MT 59802 | GIS mapping, weed management, trails | M.S. Ecology | |
| Quiram Logging | Floyd & Sandra Quiram | sixques1@centurytel.net | 320 Stillwater River Trail<br>**Whitefish**, MT 59937 | Fuels reduction, mastication, commercial logging | ALP Certified | whole time skidding and processing, also cut-to-length |
| Restoring the Rockies LLC | Tyler Huggins & Matthew Schmidt | 970-445-0757 or<br>970-445-0066 | PO Box 764<br>**Seeley Lake**, MT 59868 | Low impact fuels reduction and forest restoration work | | |
| Richard George Logging Inc. | Richard George | 406-253-6343<br>junegeorge40@yahoo.com | 10194 Boy Scout Rd. PO Box 334<br>**Seeley Lake**, MT 59868 | All harvesting needs | ALP Certified | |
| Salmon Logging, Inc. | Tim Nesmith | 406-677-5940 (o)<br>406-240-6743 (c) | PO Box 823<br>**Seeley Lake**, MT 59868 | | | |
| Seeley Lake Trucking | Bill Bartlett | Shop 677-0088<br>Cell 210-2438<br>slk2119@blackfoot.net | PO Box 513<br>**Seeley Lake**, MT 59868 | Reclamation of roads, replacement of culverts, installation of irrigation head gates, fish return lines & barriers, dozer operator for fire fighting and road building | 31 years in timber industry, 27 years truck driver, mechanic & dispatcher | 135C Excavator with blade & thumb, 650G JD Dozer w/6 way blade & winch, 1996 T800KW Dump Truck |
| Streamside Services, LLC. | David Pontrelli | (406) 531-8865<br>streamsideservicesllc@gmail.com | 2623 S Higgins Ave<br>**Missoula**, MT 59801 | Fisheries, terrestrial wildlife, timber management consulting, hydrology | N/A | NFHCP-Plum Creek, private consultant |
| Summit Brushworks | Boomer Alexander | 754-0114,<br>ridge.runner79@hotmail.com | 227 Old Barn Rd<br>**Seeley Lake**, MT 59868 | Fuels reduction, chipping, selective harvest, brushing, clean-up | | Skid steer, treeshear, brush grapple, hand feed chipper (5"), dirt bucket |
| Summitt Forests | Scott Nelson | 541-535-8920<br>summitt25@aol.com | 1257 Siskiyou Blvd<br>PO Box 218 Ashland, OR 97520 | Hazardous fuel reduction, herbicide & pesticide application, precommercial thinning, brush release, slash piling, prescribed fire buring, fireline construction, wilddland fire suppression, tree planting & protection, mulching, gopher control along with chipping and mastication | | 15 vans, 25 4/4 pickups, 12 insulated tree trailers, 1 water tender 2500 gal., fire engines 300 and 750 gal., 2 wood chippers, skidsteer asv rt100, atvs and utvs, 500-1400 gal. water trailers, 300-500 gal batch trucks |

| Contractor Name | Owner | Phone/Email | Mailing Address | Specialty | Credentials | Equipment |
|---|---|---|---|---|---|---|
| T & N Enterprises | Tony Hulett | 406-754-2959<br>whulett@mt.gov | PO Box 965<br>**Condon**, MT 59826 | Chipping, excavating, brush piling, selective logging, road building, fuels reduction | ALP Certified | LC200 John Deere excavator with thumb, mulching head, two Caterpillar D6 bulldozers, two skidders, two portable sawmills, skid steer with multiple attachments, Cat 299C masticator |
| Tamarack Forestry Services, Inc. | Dan Schurg | 406-239-6795 cell<br>406-273-3817 office | 5640 Bison Lane<br>**Lolo**, MT 59847 | Fuels reduction, thinning, firewiseing property, tree & brush removal, fence building | 14th year in this field with 20 years experience, S-Corp, General logger broad form 3/2011 | |
| The Walrus and the Carpenter | Charles Grant | 406-754-2761<br>grant@blackfoot.net | 40402 Salmon Prairie Rd<br>**Swan Lake,** MT 59911 | Hand thinning, fuels reduction | N/A | Subcontracts for heavy equipment. |
| Timber Trail and Spur Contractors, LLC | Jeff Holliday | 406-544-2192<br>jeffdholliday@gmail.com | PO Box 7171<br>**Missoula**, MT 59807 | Commercial logging, fuel reduction, homesite prep, excavator slashing and piling | ALP Certified, BS Wildlife Biology UM 1997 | John Deere 650 logging dozer, Hitachi 135 excavator, John Deere 648 Swing Grapple Skidder |
| TNT Land Management | Tiger & Debbie Hulett | 406 754-2721 cell<br>406-214-1729<br>tntwoodproducts@yahoo.com | 49857 Highway 83<br>**Swan Lake,** MT 59911 | | N/A | 450 John Deere crawler, 640 John Deere skidder, dump truck, skidsteer |
| Triple B Logging | Justin Haveman | 406-270-8007, 406-837-5554<br>tripleb@montanasky.net | 225 Fern View Lane<br>**Bigfork**, MT 59911 | | | |
| Triple J Logging | James Webb | hm 406-754-0051<br>cell 406-210-0965<br>triplejwebb@blackfoot.net | P.O Box 1172<br>**Condon**, MT 59826 | Commercial logging, fuel reduction, snow removal, light excavation, road construction/reconstuction | | John Deere 648 G3 skidder, Timco 425 Logmax processing head, Timco 435 with hotsaw |
| Watershed Consulting | Mark Vander Meer | 406-541-2565<br>mark@watershedconsulting .com | 902 Stoddard St.<br>**Missoula**, MT 59802 | Forest assessments, sustainable land use planning, fire hazard reduction, wildlife habitat improvements, tree thinning and pruning, reforestation, light-on-the-land logging, forest products marketing, custom lumber milling, prescribed burning, weed control | MS, Ecological Restoration | John Deere 50 horse farm tractor with Farmi winch with 165ft of cable, log loader trailer, saw mill |
| Western Land Management | Paula Walsh | 754-5330<br>westernlandmanagementsv@gmail.com | P.O. Box 1237<br>**Condon**, MT 59826 | Low impact thinning, fuels reduction, hand thinning, chipping, tree planting, root bald stock planting | Completed MSU Forest Stewardship Workshop | BC-1000 chipper, 5640 and 5635 Gehl skid steers (stump grinding attachment) |
| WildWest Weed Control, LLC | Owen Conley | 406-754-3036<br>cnd3036@blackfoot.net | PO Box 1316<br>**Condon**, MT 59826 | Noxious weed management | Certified | UTV, ATV, backpack |
| Yates | Ray Yates | 406-754-4456<br>truepooh_27@yahoo.com | PO Box 1305<br>**Swan Lake**, MT 59911 | | | |

| Contractor Name | Owner | Phone/Email | Mailing Address | Specialty | Credentials | Equipment |
|---|---|---|---|---|---|---|

**Information provided by contractors.** This list includes all known contractors "local" to the Swan Valley. Swan Ecosystem Center (SEC) does not certify or endorse any one contractor over another on this list. It is the landowner's responsibility to choose a contractor. SEC recommends that landowners evaluate a contractor's past work. This can be done by asking for references and calling other landowners who have had work done by the contractor. In order to receive financial assistance from SEC, the landowner must provide--for all employees, contractors and subcontractors involved in the project--a copy of a certificate of commercial general liability coverage of $1,000,000 per occurrence and $2,000,000 annual aggregate, and a copy from the State of Montana of Workers' Compensation Insurance or Independent Contractor Exemption Certificates. The landowner is responsible for deciding whether the contractor(s) should have "loggers broadform" liability, or another type of liability insurance that covers the project activities and related risks. If SEC has received proof of insurance, the date received is indicated in the columns to the right. This does not guarantee that the insurance is current.