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 Rick Bass, local citizen
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American Wildlands Priority Linkage Assessment



Executive Summary of the Cabinet-Purcells, Crown of the Continent and High Divide Conservation Project Areas - March 2008

Executive Summary

Introduction

Maintaining the ecological connections, or wildlife movement corridors, between major wildland habitats is one of the most pressing challenges for habitat and wildlife conservation in the Northern Rockies today. American Wildlands' *Corridors of Life* program works to conserve the habitat links between the "string of pearls" represented by our national parks, wilderness and roadless areas, wildlife refuges, and other protected habitats. To focus and prioritize our *Corridors of Life* program work, and provide much needed information to other NGOs and agencies, in 2007 AWL conducted a Priority Linkage Assessment (PLA) to determine the most important habitat connections, or "linkages," in the U.S. Northern Rockies. This assessment focused on the movement needs of eight species (bighorn sheep, elk, grizzly bear, lynx, moose, pronghorn, wolf and wolverine), although additional information regarding other locally-significant species was also collected. We conducted our PLA in three of our four conservation areas – the Cabinet-Purcells, Crown of the Continent, and High Divide. We will conduct a PLA for the remaining conservation area, The Hub, by the end of 2008.

Methods

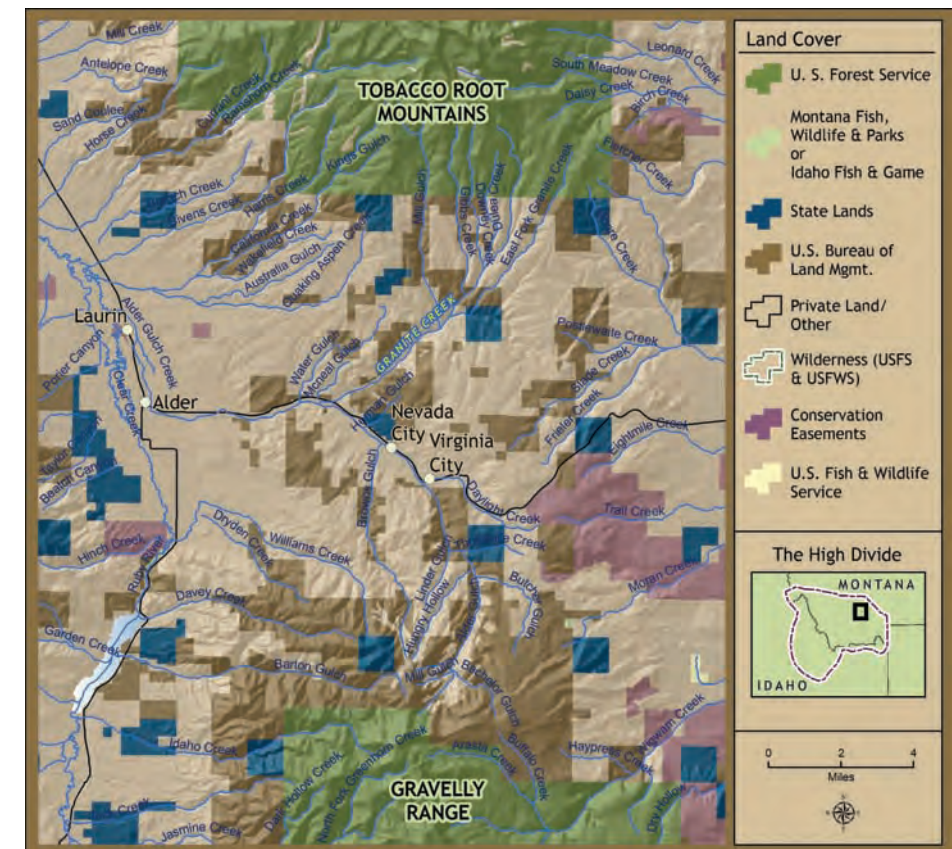
American Wildlands used an expert-opinion based model for our Priority Linkage Assessment. The five dozen state, tribal, independent and federal biologists we interviewed provided their expert opinion and rankings of critical habitat linkages. The biologists we interviewed provided numerical scores for each linkage in three categories: ecological quality (which considers the importance of the linkage to local or regional wildlife connectivity and the current condition of the linkage), threats and opportunities. Using a Bayesian averaging algorithm and Jenks Natural Breaks, American Wildlands prioritized each linkage into one of five hierarchical groups: very high, high, intermediate, low, or very low. To supplement our expert-opinion based data, we incorporated information from our review of peer-reviewed habitat connectivity models and research papers addressing wildlife linkage in the U.S. Northern Rockies. The linkage maps and prioritizations are provided in the following pages.

Threats and Opportunities

The Priority Linkage Assessment identified fragmentation or conversion of private lands as the greatest threat to wildlife habitat connectivity. These lands currently comprise vast amounts of open space permeable to wildlife. The cumulative loss of open spaces can inhibit wildlife attempting to disperse or migrate. Private land development increases other related threats: more roads, traffic, fences, and a significantly higher risk of wildlife-human conflicts.

Conservation Threats: The area is slowly losing its permeability to wildlife through private land subdivision. Currently, there are several large parcels of land in this corridor that are owned by the Bureau of Land Management; however, these holdings are somewhat scattered and interspersed with private land that is subject to future development. There is a planned subdivision near Norris Hill which will cause the preservation of this corridor to become even more crucial for animals moving north and west out of the Madison Range. There are also issues concerning loss of conifer forest due to disease. Although active oil and gas exploration is at a minimum, there are several 43 CFR 3809 notices on file for potential exploration.

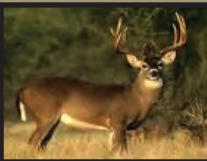
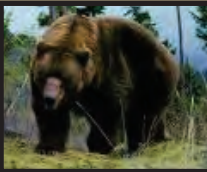
Conservation Opportunities: This area may have potential for conservation easements. Lands that are adjacent to existing Bureau of Land Management lands would be key parcels to conserve to facilitate conservation of contiguous open space permeable to wildlife moving through the area. Currently, there are no conservation groups working specifically in this area, although the Madison Valley Ranchland Group is working just to the east of this area.



This map depicts the wildlife corridor between the Tobacco Root and Gravelly Mountains in southwestern Montana. Although general predicted wildlife movement is north-south between the two ranges, there are several areas of importance to more localized species. More detailed wildlife information can be found in the Wildlife Section of the accompanying text.

Tobacco Roots to Gravellys

SPECIES



Geographic boundary: The north boundary is the Tobacco Root Mountains, the south boundary is the Gravellys Range; the central area is a high elevation mountain pass; the east and west sides are characterized by decreasing elevation rather than a physical boundary.

Importance of Linkage Area: The experts ranked this linkage area as the most likely northern route for dispersing Greater Yellowstone grizzly bears. The Tobacco Root Mountains are a “stepping stone” to many other mountain ranges on the northern end of the High Divide and the south-western ranges in The Hub Regional Conservation Area (e.g. the Highlands, the Elkhorns, and the Boulder Mountains). Given the anecdotal reports of Crown of the Continent grizzly bears in the northern ends of the aforementioned mountain ranges, a viable linkage area between the Gravelly and Tobacco Root mountains may provide a likely path for the eventual genetic interchange between the Greater Yellowstone and Crown of the Continent grizzly bear populations.

Ecological setting: The Tobacco Roots and Gravellys are dominated by conifer forest, including whitebark pine (*Pinus albicaulus*), limber pine (*Pinus flexilis*) and Douglas fir (*Pseudotsuga menziesii*). The conifer forest is interspersed with alpine meadows and rocky outcrops. Between the two mountain ranges, the vegetation is dominated by sagebrush shrub complex (*Artemesia spp.*), alpine meadows and grasslands, and converted dry agricultural lands. Elevation ranges within this linkage area range between 6000’ to 7000’. Conifer forest extends in the middle of the corridor near Virginia City, MT.

Economic Context: Originally an 1860’s mining boomtown in Madison County, MT, Virginia City is now a renovated historical landmark in the center of the linkage area. At its peak, it had 10,000 residents, but the 2000 census indicated only 130 residents. It is one of the busiest summer tourist destinations in the state. Currently, ranching and farming are the area’s main economic drivers, although home construction associated with extensive subdivision is one of the fastest growing industries, especially in nearby Ennis, MT. Schools, medical services, county government, the Forest Service, several resorts, and construction firms are the main employers. Tourism and service industries related to fishing and skiing may eventually replace ranching and agriculture as the dominant economic force; declining school enrollment, increased closure of “year-around main street businesses”, increased non-traditional ranch ownership, increased retirement age population, high land values and low agricultural economics all point that the communities near this linkage area are moving toward retirement-amenity based structure. (Source: <http://www.madison.mt.gov/aboutus/>)

Wildlife: This area is important for dispersal and range expansion of forest carnivores, and ungulate seasonal range. The Gravelly Range has a breeding female wolverine territory and is occupied grizzly bear habitat. Persistence of the linkage between the Tobacco Roots and the Gravellys is vital to future wolverine and grizzly bear expansion into the Tobacco Roots. Montana Department of Fish, Wildlife, and Parks is conducting mule deer surveys on the southwest side of the Tobacco Roots; most of the southern end of the Tobacco Roots is important wintering and calving/fawning area for elk and mule deer. The Granite Creek drainage is especially important for animal movement. Although there were historic sage grouse leks in the area and the habitat is suitable, currently there are no known active leks in this linkage area.



Other threats identified include:

- Wildlife mortality on highway/railroad corridors
- Wildlife-human conflict due to increased attractants (e.g. garbage, agriculture, livestock)
- Social intolerance
- Incompatible ranchland management (e.g. loss of cover, wildlife-unfriendly fencing)
- Forest/forest roads management and energy development on public lands
- Plant and insect diseases
- Motorized recreational access on public lands
- Forest highways

Conservation opportunities include:

- Conservation easements or land acquisition
- Transportation mitigation, such as wildlife crossing structures
- Community groups/conservation partnerships
- Private land stewardship
- Education and outreach to communities co-existing with wildlife
- Public land planning processes

Next Steps

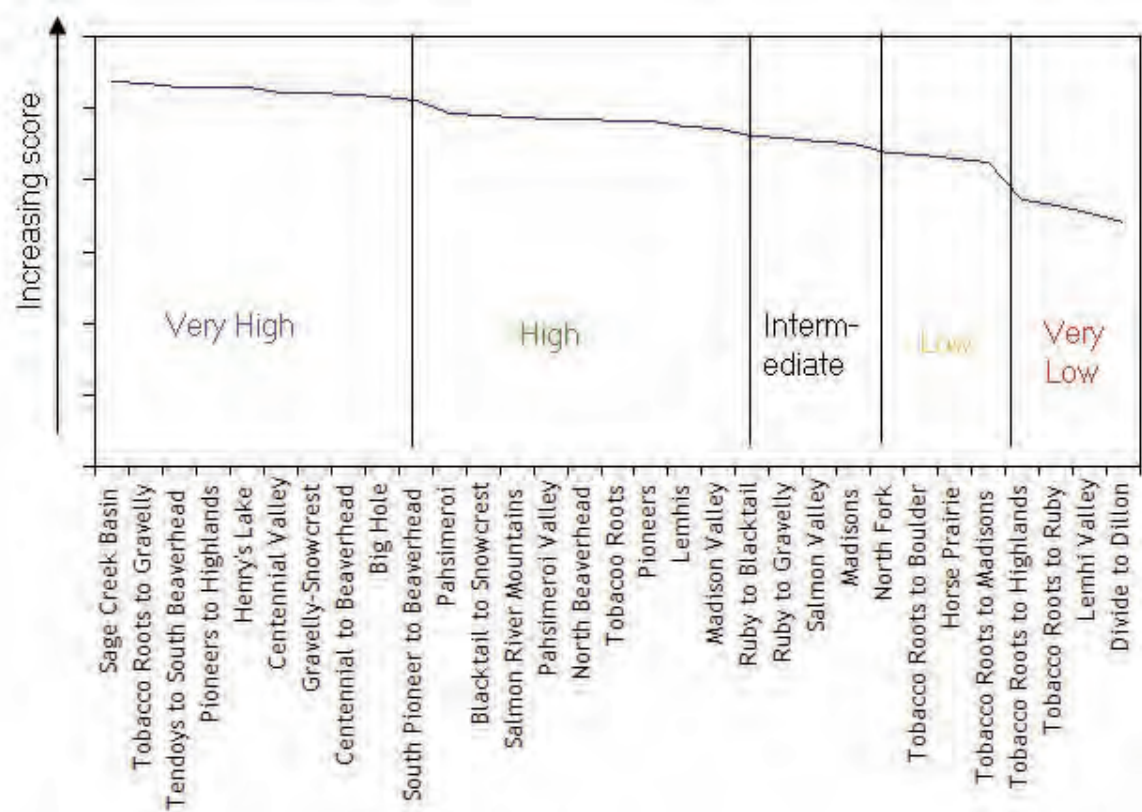
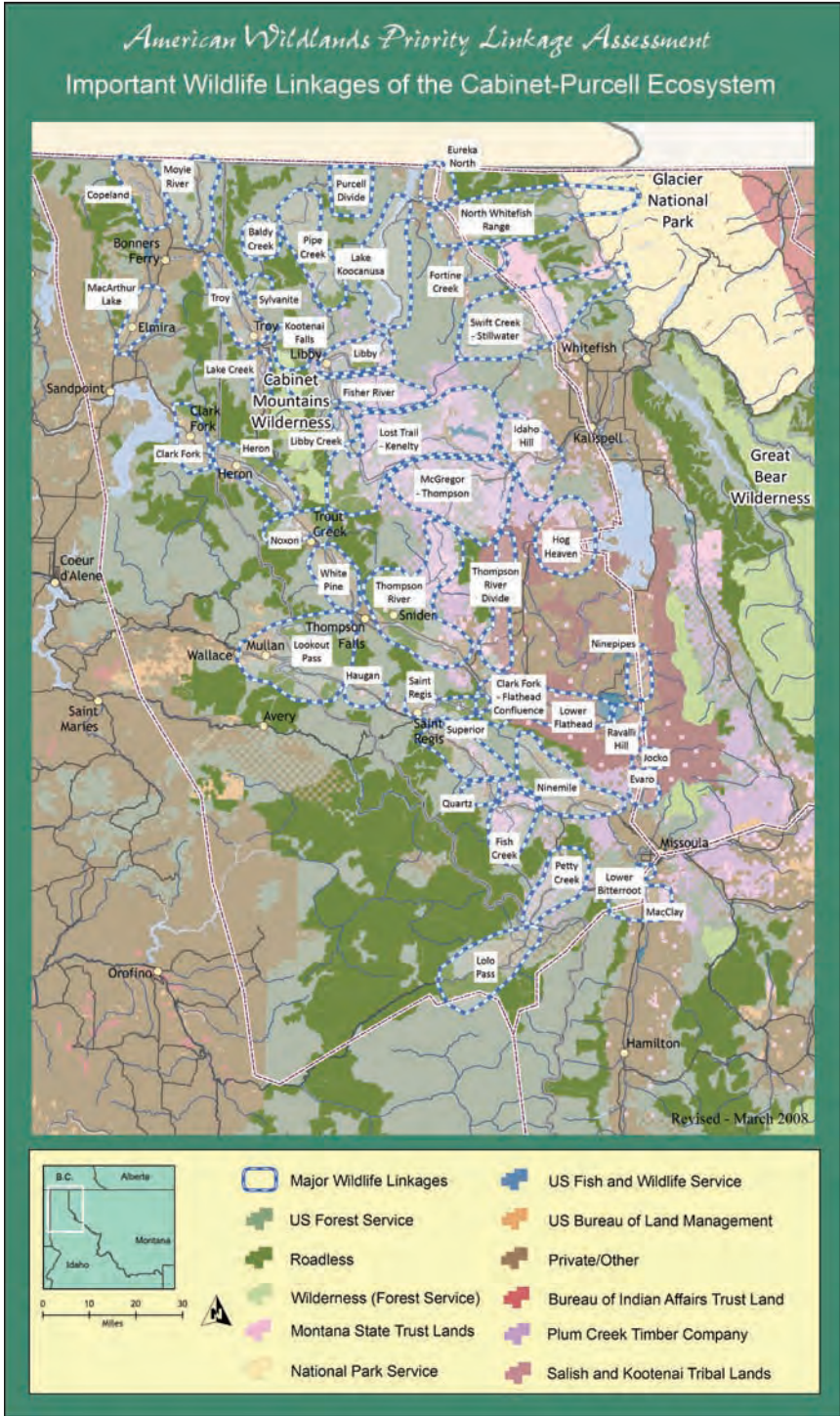
American Wildlands has compiled all of the data collected from our interviews, including the mapped linkage areas, priority charts, regional threats and opportunities, and wildlife-specific information. American Wildlands is now able to provide conservation partners with the following information about each linkage area: detailed maps, how wildlife use the area, the ecological setting and the economic drivers of the area, and specific threats and opportunities (see example of this information on pages 10-11). Detailed reports for the High Divide, Cabinet-Purcells, and Crown of the Continent conservation areas will be completed in Spring, 2008.

American Wildlands will work with conservation partners to act on the opportunities identified for each linkage area. Our next steps include:

- Identifying potential collaborative partners, such as other conservation NGOs, local community groups, and agencies, for each of the identified linkage areas.
- Working with partners to develop and implement conservation strategies that address the threats and opportunities for conserving that linkage.
- Providing AWL’s expertise regarding the latest science; GIS modeling, analysis and mapping; land and wildlife management laws, policies and best management practices.
- Facilitating the engagement/procurement of additional expertise and capacities as needed.

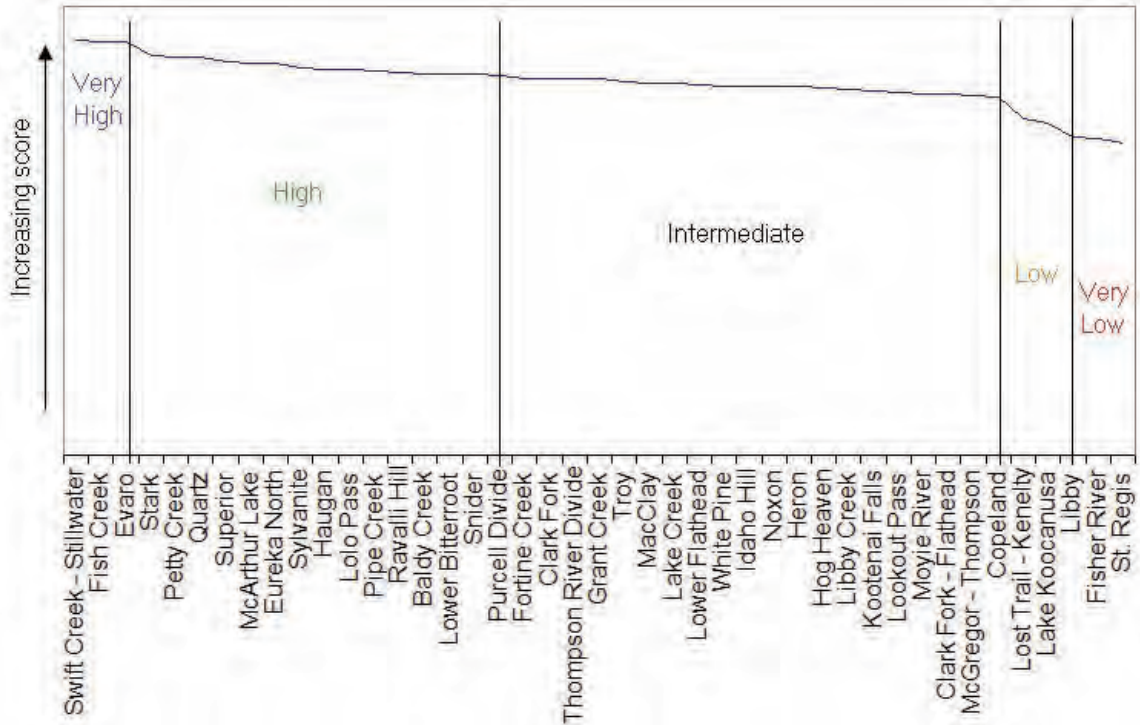
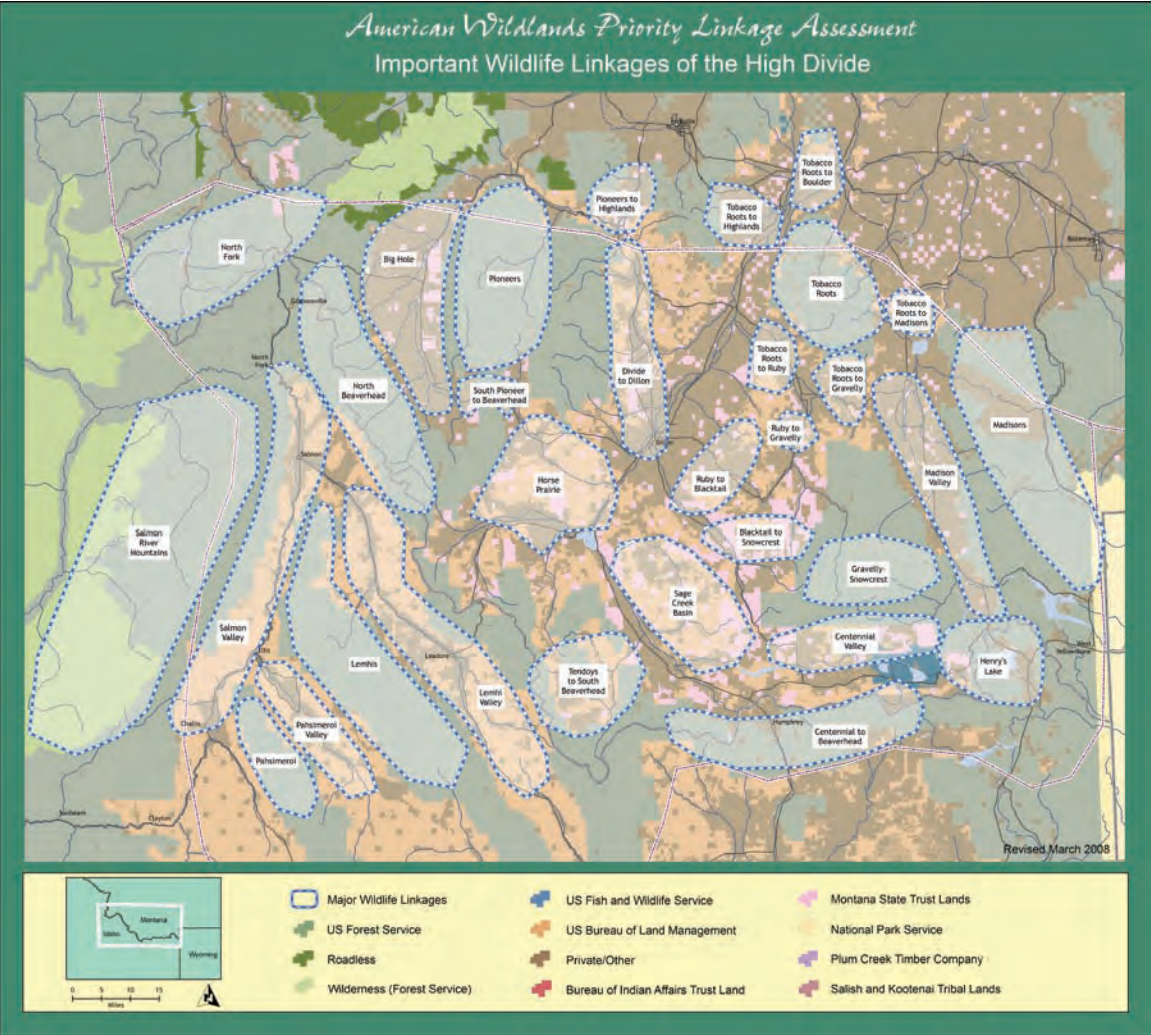
AWL has also developed a web site with data from our Spring 2008 workshop, maps, and other useful info. See <http://www.wildlands.org/programs/corridors/pla/workshop>

The Cabinet-Purcells - Major Linkage Areas



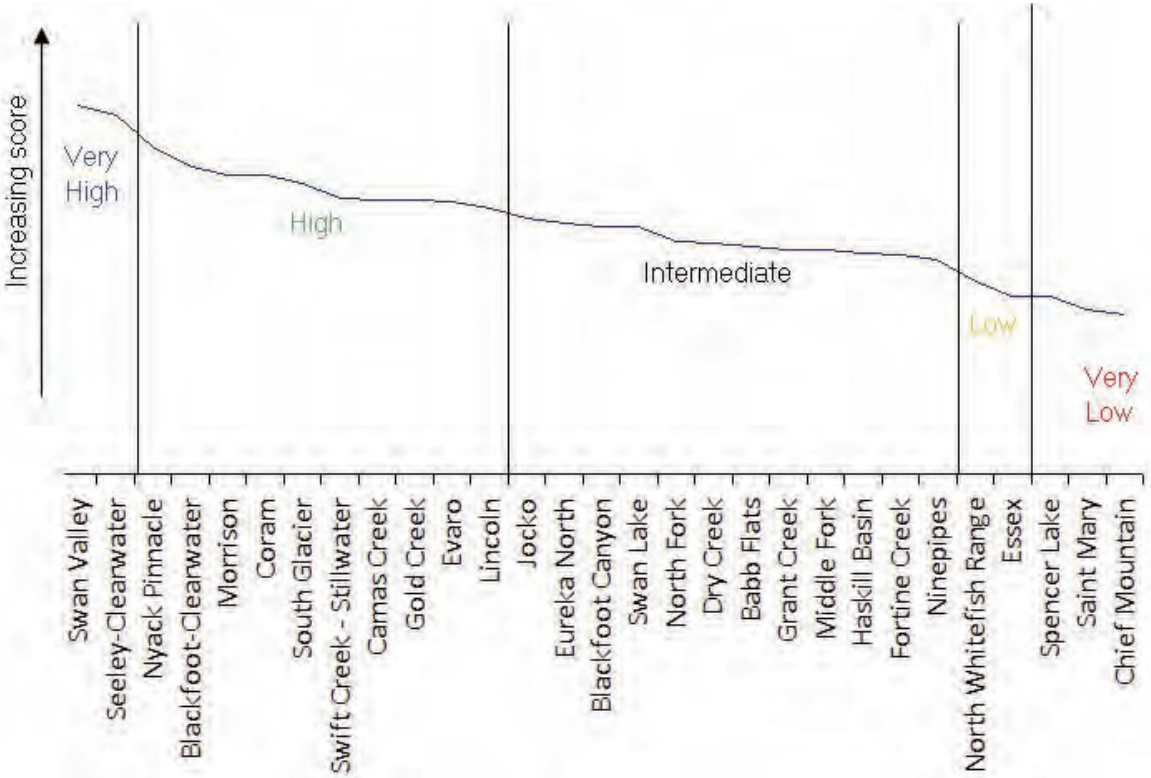
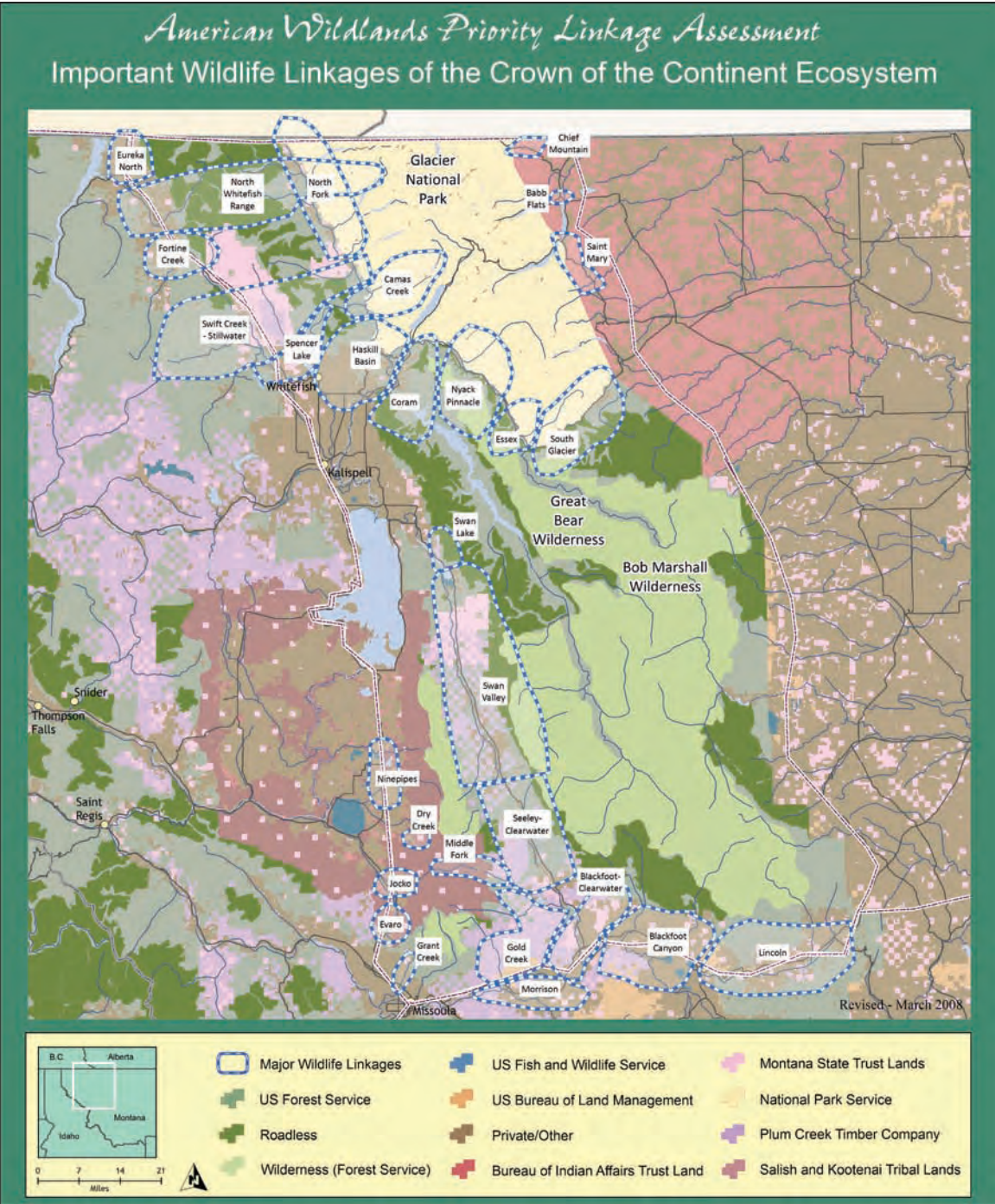
April Johnston of American Wildlands conducting a Priority Linkage Assessment expert interview with Craig Jourdonnais (Montana Fish, Wildlife & Parks) for the High Divide.

The High Divide - Major Linkage Areas



A photo taken near McArthur Lake, one of the "High" ranking priority wildlife linkage areas identified in American Wildlands' Priority Linkage Assessment for the Cabinet-Purcells.

The Crown of the Continent - Major Linkage Areas



Bighorn Rams in Glacier National Park, part of the Crown of the Continent conservation area (photo courtesy of Phil Knight).