

VITAL LANDS, SACRED LANDS: INNOVATIVE CONSERVATION OF WILDLIFE AND CULTURAL VALUES BADGER – TWO MEDICINE AREA, MONTANA



by John L. Weaver

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PREFACE

The Badger-Two Medicine (B2M) area lies at the northern end of the Rocky Mountain Front in Montana, where the Great Plains first meets the dramatic uplift of the Rocky Mountains. Once part of the Blackfeet Indian Reservation, the B2M is now part of the Lewis and Clark National Forest. It is encircled by majestic Glacier National Park on the northwest; the foothills and prairies of the Blackfeet Indian Reservation to the north and east, and the rugged Bob Marshall and Great Bear Wilderness Areas on the south. Over the past century, successive generations of citizens and government leaders have worked hard to protect these treasured landscapes of Montana. Their collective achievements constitute a great gift ... but, one important piece remains missing in this remarkable legacy: the Badger-Two Medicine.

The Badger-Two Medicine is *vital land* for several vulnerable species of fish and wildlife that have been vanquished from much of their historical range, and it is *sacred land* for the Blackfeet people who have hunting, fishing, and other rights they reserved in an agreement with the United States in 1895-96.

From a strong base of affirmed treaty rights and cultural identity, tribes are reaching for more meaningful participation in the stewardship of traditional areas on public lands. Over the years, the Forest Service has built up considerable management capacity and resource expertise. More recently, the agency has developed new and progressive policies that recognized the tenets of tribal rights and seeks constructive relations.

Earlier political efforts in the 1980s and 1990s to safeguard the Badger-Two Medicine area through Wilderness designation by Congress did not succeed. But could there be a new and different path? The pursuit of conservation around the world indicates that sometimes new information or understanding ... a new kind of protective designation or management framework ... new leadership ... can break open a 'log-jam' in controversy and divisiveness and trigger a dramatic shift in relationships between people and governments of diverse interests. Such new currents can re-freshen the dialogue, re-configure alliances and brighten prospects for conservation of important values and places.

It is essential for us to have some mutual understanding of this place and context - ecological, cultural, and legal. In this report, I bring together much new information about these dimensions. I suggest a *co-stewardship* framework and different options for protecting the outstanding natural and cultural values of the Badger-Two Medicine in a way that encompasses diverse perspectives in a common purpose. It is my hope that this report will provide useful background and context for the Blackfeet Tribe, the Lewis and Clark National Forest, and others as they consider the future of the Badger-Two Medicine.

May they bring their best to the circle of co-stewardship.

SUMMARY

The Badger-Two Medicine (B2M) area occupies a strategic position in the international landscape known as the Crown of the Continent Ecosystem – an amazing set of splendid jewels of landscape beauty and ecological diversity. The B2M lies at the northern end of the Rocky Mountain Front, where the Great Plains first meet the dramatic uplift of the Rocky Mountains. It includes 130,000 acres (97% roadless) on the Lewis and Clark National Forest. The Badger-Two Medicine is encircled by majestic Glacier National Park on the northwest; the foothills and prairies of the Blackfeet Indian Reservation to the north and east, and the rugged Bob Marshall and Great Bear Wilderness Areas on the south. The Continental Divide – known as *Miistakis* or ‘Backbone of the World’ to the Blackfeet Indians – frames the western border of the Badger-Two Medicine.

The B2M is part of the traditional homeland of the Blackfeet Indians (*Amskapi-Pikunni* or the ‘South Piegan’), who thrived on the vast buffalo (*Iinnii*) herds that roamed their huge traditional territory across the plains and foothills of northern Montana. Through a succession of treaties and agreements between 1855 and 1887, the Blackfeet lost or sold much of their lands to the United States and their main staple – the buffalo – was exterminated by 1883. In the 1895-96 Agreement, the Blackfeet sold the western portion of their reservation, including what became the eastern part of Glacier National Park and the Badger-Two Medicine. They reserved, however, certain rights such as hunting and fishing. It is against this backdrop of history that the Blackfeet Tribe has sought ways to protect the Badger-Two Medicine as an area of great importance to their tribal culture.

Over the past century, successive generations of citizens and government leaders have worked hard to save the core of this Crown of the Continent ecosystem by establishing world-class parks and wildernesses, coupled with conservation of critical wildlife habitat on state and private lands along the periphery. Most recently, Congress passed the Rocky Mountain Front Heritage Act which protected all the remaining roadless public lands (275,000 acres) south of the Badger-Two Medicine. These collective achievements constitute a great gift ... but, one important piece remains missing in this remarkable legacy: the Badger-Two Medicine.

Earlier political efforts in the 1980s and 1990s to safeguard the Badger-Two Medicine area through Wilderness designation by Congress did not succeed. But could there be a new and different path? Perhaps now is the time to complete the legacy by charting a new path for protection of the Badger-Two

Medicine based upon greater mutual understanding and leadership ... a path of co-stewardship that integrates the wildlife and cultural values into a vision of *vital land, sacred land*.

The Badger-Two Medicine clearly is one of the last, best places for vulnerable fish and wildlife species that have been vanquished or diminished in most other areas across the western United States. I selected the following suite of fish and wildlife because it includes wide-ranging species with complementary sets of diverse habitat requirements, and each is vulnerable to direct human impacts and/or climate change. For each species, I provide a vulnerability profile, synthesize the latest scientific information, and map its key habitats in the Badger-Two Medicine area.

Westslope cutthroat trout exhibit high vulnerability to hybridization by non-native rainbow trout. These native fish (WCT) are adapted for cold waters – especially for spawning and rearing – and climate change may warm lower-elevation waters past their tolerance. Protection of headwater streams that are cold, clean and complex plus reduction of non-native trout will help conserve these native trout. The Badger-Two Medicine is one of the last strongholds for conservation populations of westslope cutthroat trout along the Rocky Mountain Front. About 51 miles of streams harbor pure or minimally-introgressed populations of WCT, primarily in headwaters of the South Fork Two Medicine River and Badger Creek drainages.

Although resourceful in finding food and habitat, grizzly bears are vulnerable to excessive mortality due to their very low reproductive rate. Young females do not disperse very far, which makes bear populations susceptible to landscape fragmentation. Roads with even modest traffic volume can displace bears from key habitats and expose them to greater risk of human-caused mortality. Large areas of productive habitats with security from human disturbance and mortality are important in conserving grizzly bears, which are listed as ‘threatened’ under the ESA. About 71% of the Badger-Two Medicine has secure areas with very-high or high habitat value for grizzlies. Population surveys have documented moderate to high levels of relative density of grizzly bears in the Badger-Two Medicine, which is a vital component of the regional stronghold of grizzly bears.

Wolverines use areas characterized by persistent snow cover during spring for their reproductive habitat, summer habitat, and dispersal routes. Due to their very low reproductive rates, wolverines are vulnerable to human-caused mortality from trapping and appear sensitive to human disturbance near maternal sites. Snowy habitats for wolverines may shrink at lower elevations in the future as a result of warmer climate, and they had been proposed for federal listing as a ‘threatened’ species. About 87% of the Badger-Two Medicine provides primary habitat for wolverines, with 33% serving as maternal habitat. The higher country in the B2M headwaters will help sustain the unique niche and vulnerable populations of this elusive carnivore in a warmer future. The Crown of the Continent represents a major stronghold for wolverine in the lower 48 states, and the core habitat in the Badger-Two Medicine and its close proximity to Glacier National Park provides added conservation value for wolverine.

Mountain goats have high vulnerability. They are constrained to live on or near cliffs that provide escape terrain from predators and more accessible forage in winter. Female goats have very low reproduction rates and cannot quickly compensate for excessive mortality (notably hunting). Goats are sensitive to motorized disturbance (especially helicopters). In the Badger-Two Medicine, mountain goats are found on the high peaks of the Badger Creek watershed and along the Continental Divide which provide nearly 17,000 acres of habitat. Most of these are traditional maternal sites that have been used for 50 years (if not longer) and are connected to other goat habitat/groups further south in the Bob Marshall Wilderness.

Rocky Mountain elk have low to moderate vulnerability. They are habitat generalists and have a moderate reproductive rate. Roadless areas like the Badger-Two Medicine provide important security during hunting season. Reducing hunter harvest of adult female elk is a prudent strategy for offsetting impacts of carnivore recolonization and shifting weather patterns on elk. Approximately 300 elk use the area around Lubec Ridge-Mettler Coulee-Hyde Creek and over to Two Medicine Ridge for winter range. In summer, elk inhabit the roadless Two Medicine Ridge and upper basins and ridges of the South Fork Two Medicine River and both forks of Badger Creek for summer range. From the standpoint of Blackfeet culture, elk have replaced bison as the focus for hunting, which is central to their traditional life.

Bison or buffalo once roamed the great North American plains and prairies in numbers hardly imaginable – upwards of 30 million animals – but wild and free-ranging bison were devastated through excessive hunting down to near-extinction by the late 1800s. Conservation scientists consider the American bison ecologically extinct because fewer than 4 % of nearly 500,000 bison today are wild conservation herds on federal or tribal lands – all the other bison in North America are privately owned and managed for commercial production. Many North American Indian tribes have strong cultural, spiritual, and symbolic relationships with bison. The Blackfoot Confederacy is planning on restoring more bison to ancestral lands in Montana and Alberta as part of the *Iinnii* Initiative. The B2M area could be important in that effort. Bison do not occur in the B2M at present, but the area provides nearly 8,000 acres of very high or high habitat suitability. These grassland habitats of low-moderate slope are distributed in rather small patches across the B2M, with concentrations in lower South Fork Two Medicine River and Lubec Ridge.

To summarize: the entire Badger-Two Medicine is a stronghold for several vulnerable fish and wildlife species that have been vanquished in so many other places. Remarkably, 100% of the B2M has a *very high* (83%) or *high* (17%) conservation value for at least 1 of the 5 focal species. In terms of composite scores across all 6 species, about 98% of the B2M has *high* (50%) scores (8-14) or *moderate* (48%) scores (4-7).

Highways, roads, and human settlements fragment intact landscapes. These ‘fracture zones’ can limit wildlife movements, leading to smaller and more isolated populations with less genetic interchange. Consequently, many scientists advocate the need for conservation corridors or linkages between habitats to support necessary movements and greater viability. U.S. Highway 2

(and associated railroad) is a major east↔west transportation route across the Rocky Mountains. The 11-mile section from Marias Pass (MP 197) to nearly East Glacier (MP 208) separates Glacier National Park and the Badger-Two Medicine. Currently, this section – with few human residences and low traffic volume – appears quite permeable for crossings by grizzly bears and wolverines. It is a critical linkage for these wide-ranging species in the Crown of the Continent Ecosystem.

The melting glaciers of Glacier National Park signal changes in climate that may become even more pronounced in coming decades. Climate scientists project that there will be warmer winters and hotter summers, perhaps more extreme events, decreasing snowpack with earlier melting in spring, declining stream flows and warmer streams, and longer wildfire season with more severe fires. In response, animals will need room to roam as they try to track the shifting location of their habitats. The problem is that the landscape has been fractured by roads and developments – leaving few safe havens and safe passages. A smart strategy for resiliency going forward is to protect and connect large landscapes with high topographic and ecological diversity, and the Badger-Two Medicine could serve admirably as such a climate refuge.

In 2014, the entire Badger-Two Medicine (excepting private lands) was determined eligible for listing on the National Register of Historic Places. This Register was established under the National Historic Preservation Act of 1966, which requires agencies to ensure that historic properties are preserved to maintain their historic and cultural values as part of the heritage of all citizens of the United States. Several ethnographic studies over the past 25 years have documented the diverse, widespread, and inter-connected sites (147 in total) of cultural significance to the Blackfeet people throughout the Badger-Two Medicine. The entire B2M qualifies as a *Traditional Cultural District* due to its relevance to Blackfeet history, identity and cosmography, and continuation of cultural practices.

During the 19th and 20th century, indigenous people in many parts of the world were killed, dispossessed of their traditional territory and relocated, socially and economically marginalized and politically subjugated by the dominant Euro-centric culture. Over the past 40 years, however, there has been a remarkable resurgence of indigenous cultures and sovereignty all across the globe. From a strong base of affirmed treaty rights and cultural pride, indigenous people are reaching for more meaningful participation in the stewardship of ancestral lands and resources. Most of these lands, though, have been settled by majority cultures for more than a century. Now there are multiple voices speaking for the management of these lands and resources. Around the world, indigenous people and majority governments have turned to co-management as a way of sharing responsibility and decision-making for the land while bridging diverse perspectives and interests.

I profile three case studies of aboriginal people and co-management from Australia, Bolivia, and the Canadian province of British Columbia that provide interesting and relevant examples of different frameworks for co-management. Key lessons learned for successful co-management include: (1) understand the basis for legal rights and management authority, (2) be alert to the sociological

tension of new societal arrangements for co-management and embrace the benefits of diverse perspectives, (3) develop a shared vision and goals for protection of natural and cultural values, (4) negotiate equitable sharing of decision-making in alignment with legal standing or rights, (5) build an adaptive structure and really nurture positive, constructive relationships, and (6) start smart by taking a step-wise path to success.

Any cooperative management framework between the Blackfoot Tribe and the Lewis and Clark National Forest must adhere to the legal context in the United States. In recent decades, there has been a steady stream of judicial decisions reaffirming the inherent sovereignty of Native Americans and upholding certain rights reserved under historic treaties and agreements of the 1800s on lands now under jurisdiction of the U.S. Forest Service. Congress has passed several laws to safeguard objects and sites of historic and cultural significance to Indian people and to promote tribal self-governance. In recent years, Presidents have signed Executive Orders to mandate regular and meaningful consultation with tribal officials on pertinent matters and to strengthen the United States government-to-government relationship with Indian tribes. In the past decade, the Forest Service has developed progressive policies regarding tribal relations and engaged in numerous collaborations with tribes on National Forests across the country. Collectively, these actions across the judicial, legislative and executive branches of government have re-configured the legal context and prospects for devising a fresh and innovative approach to protecting the natural and cultural values of the Badger-Two Medicine.

The Forest Service is charged with managing the National Forest System across the United States for a multiplicity of values and uses for all citizens - including lands of historical and cultural significance to many American Indian tribes. In considering a tribal role in aspects of land management on National Forest lands, it is essential to recognize that the Forest Service cannot legally divest itself of its federal decision-making authority. Yet the sovereign, government-to-government stature of Indian tribes portends a different relationship with the Forest Service than other 'stakeholders'. Thus, the term '**co-stewardship**' could distinguish this unique relationship of "protecting and being responsible for something entrusted to one's care" in alignment with legal standing of each party.

Due to its significant conservation and cultural values, the Badger-Two Medicine merits more enduring protection. It has regional and national significance for its healthy populations of native fish and wildlife, as well as its connectivity to other iconic landscapes such as Glacier National Park and the Bob Marshall Wilderness complex. The B2M is an area of great importance to the Blackfoot people for historic, cultural, and spiritual reasons. Indeed, such natural and cultural values were important in the 2009 Travel Management Plan by the Lewis and Clark National Forest to emphasize non-motorized uses and solitude across nearly all of the B2M, a decision endorsed by the Blackfoot Tribe. That decision shifted the vision for the Badger-Two Medicine and set the stage for more durable protection. It's critical to realize that the *entirety* of the Badger-Two Medicine comprises the minimum area necessary to satisfy various historical/legal, cultural and conservation considerations.

- Administrative designation as a **Special Area (Historic or Cultural)** as part of the revised Forest Plan for the Lewis and Clark National Forest.

The Forest Service has long had authority to administratively designate Special Areas on National Forests for specific emphasis of certain values – for example, Recreational Areas, Geological Areas, and *Historical* Areas. The Badger-Two Medicine ‘Traditional Cultural District’ eligible for listing under the National Historic Preservation Act would be consistent with the definition of a Historical Area. Any administrative designation of the Badger-Two Medicine as a Cultural or Historic Area would necessarily be an integral part of the Forest planning process subject to full public participation and review under the National Environmental Policy Act (NEPA). The designation could be accompanied by an MOU for co-stewardship with the Blackfeet Tribe, and there are several pertinent models or templates for a MOU.

- Congressional Designation as **Wilderness** or ‘**Conservation and Cultural Area**’.

Another and more durable option for protection of the Badger-Two Medicine would be through Congressional designation as Wilderness under the Wilderness Act. Some tribes have viewed Wilderness designation as an effective way to protect cultural resources and sacred places against development pressures. Another variant would be for Congress to designate a ‘Conservation and Cultural Area’. A bill establishing either designation could include a number of provisions unique to the historic and cultural context of the Badger-Two Medicine:

- recognize the importance of a trinity of wilderness, wildlife, and cultural values;
- recognize certain existing rights reserved by the Blackfeet in the ceded area under the 1895-96 Agreement, as well as any other valid existing rights;
- direct a government-to-government agreement between the Forest Service and the Blackfeet Nation for cooperative stewardship of the Badger-Two Medicine.

The path to Congressional designation, however, may be especially problematic at certain times – and may take many years to secure passage.

- Presidential Proclamation of **National Monument**.

If Congress did not enact legislation to protect the Badger-Two Medicine as Wilderness, the President could proclaim the ‘Badger-Two Medicine National Monument’. With passage of the Antiquities Act in 1906, Congress gave the President authority to create national monuments on federal lands to protect historic landmarks, historic and prehistoric structures, or other objects of historic or scientific interest. Since enactment of the Antiquities Act, 16 of 19 Presidents from both parties have proclaimed over 100 National Monuments all across America. Several recent National Monuments occur on National Forest lands. The cultural importance and eligibility for listing on the National Register of Historic Places – along with the scientific value of the area for wild-

life – makes a compelling case for proclamation of the Badger-Two Medicine National Monument. The proclamation could direct preparation of a management plan with public participation under NEPA for cooperative stewardship between the Forest Service and the Blackfeet Nation of the Badger-Two Medicine National Monument.

From a strong base of affirmed treaty rights and cultural identity, tribes today are reaching for more meaningful participation in the stewardship of traditional cultural areas on public lands. The Forest Service – in addition to its considerable management capacity and resource expertise – recently has developed new and progressive policies that recognized the tenets of tribal rights and seeks constructive relations. From this convergence of fresh currents arises a new opportunity for a cooperative framework that reflects the unique legal context of tribal rights and agency mandates, as well as diverse cultures and perspectives of native people and the wider American community.

With new scientific information about the national significance of the Badger-Two Medicine for wildlife conservation ... with formal recognition of its national significance as a historic and cultural area for the Blackfeet people ... with innovative options for land protection and a new framework of co-stewardship that encompasses diverse perspectives in a common purpose ... and with new leadership ...

now is the time to chart a new path for enduring protection of the wildlife and cultural values of the place called the Badger-Two Medicine.

1. INTRODUCTION: THE BADGER-TWO MEDICINE

Strategic Conservation Importance of the Badger-Two Medicine

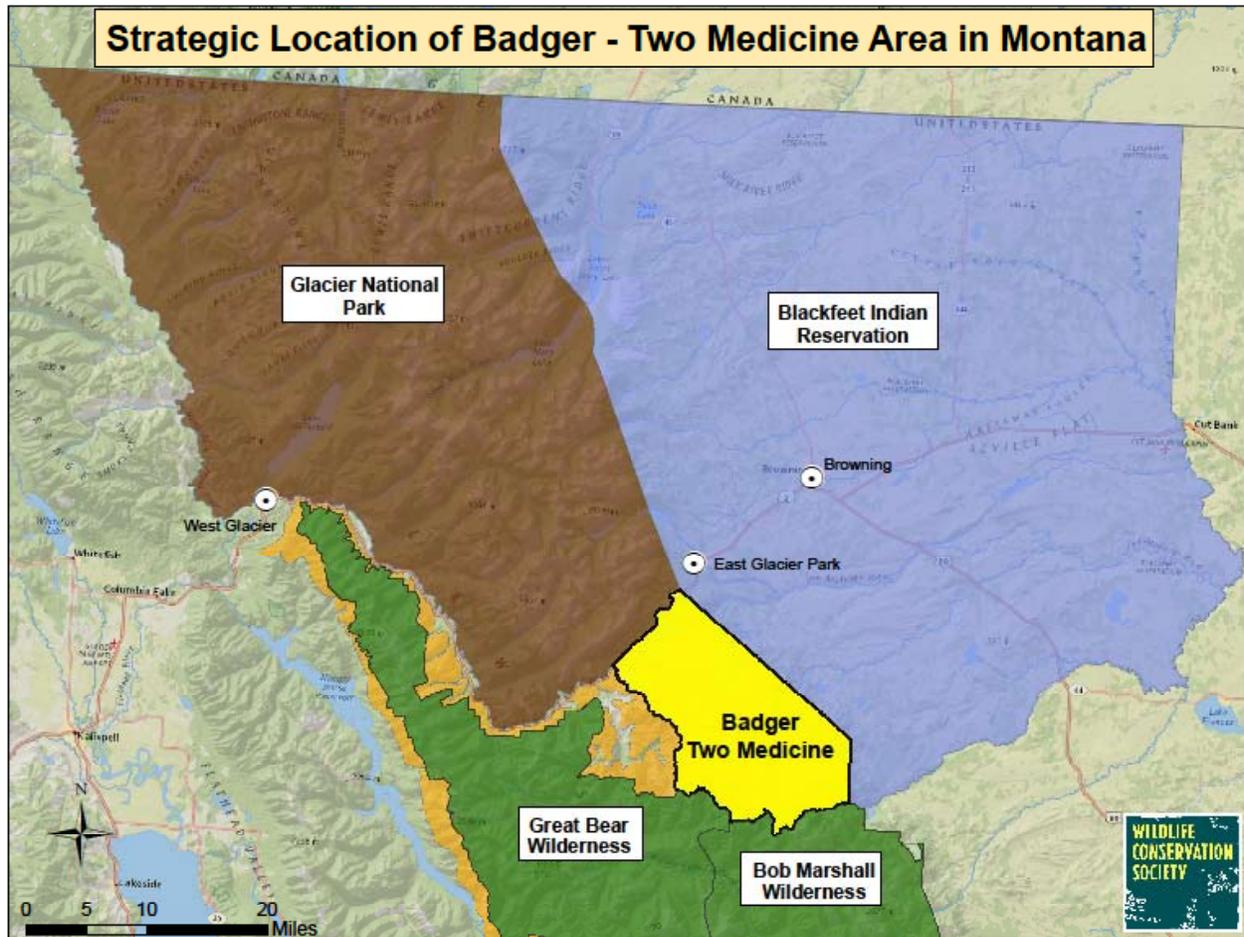
The Badger-Two Medicine (B2M) area occupies a strategic position in the international landscape known as the Crown of the Continent Ecosystem – an amazing set of splendid jewels of landscape beauty and ecological diversity (Figure 1). The B2M lies at the northern end of the Rocky Mountain Front, where geologic reef formations from ancient sea beds extend for 150 miles from the Canadian border southward. It marks that spectacular and symbolic edge where the Great Plains first meets the dramatic uplift of the Rocky Mountains ... the home of Wind Maker where mighty chinook winds have warmed winter temperatures from 15°F to 50°F in minutes and swept the foothills and plains clean of snow ... the last place in America where one might see a grizzly bear ranging across the prairie as in olden times.

The Badger-Two Medicine is encircled by majestic Glacier National Park on the northwest; the foothills and prairies of the Blackfeet Indian Reservation to the north and east, the rugged Bob Marshall and Great Bear Wilderness Areas on the south, and roadless areas on the Flathead National Forest to the southwest (Figure 1). The Continental Divide – known as *Miistakis* or ‘Backbone of the World’ to the Blackfeet Indians – frames the western border of the Badger-Two Medicine.

The Badger-Two Medicine area covers 133,024 acres: 129,746 acres is public land on the Lewis and Clark National Forest, with 97% being roadless. The remaining 3,278 acres is private land clustered along the northwest boundary adjacent to U.S. Highway 2.

The B2M sparkles with a variety of dramatic landscapes, clean headwater sources of blue waters, and diversity of plants and animals. Here, considerable physical and habitat diversity is compacted in a short distance from the grasslands westward to alpine plateaus. Elevations vary from approximately 4,540 ft at the prairie edge up to 8,376 ft on Morningstar Mountain – a range of 3,836 ft (Figure 2). Coupled with a complex topography, this range of elevation offers a wide variety of environmental conditions and physical niches. Most of the terrain likely was covered by Cordilleran ice during the last glacial period about

Figure 1. Geographical setting of the Badger-Two Medicine area (in yellow), Montana.



18,000 years ago. More recently, disturbances like insects and fire have created new patterns at local scales. All of these factors have set the stage for a diverse assemblage of plant and animal species.

Englemann spruce-subalpine fir is the dominant land cover class (38 %) and widespread at higher elevations across the Badger-Two Medicine (Table 1, Figure 3). In 2007, the Skyland fire burned about 22 % of the area in the South Fork Two Medicine drainage as part of the natural ecological process of succession. Grasslands (14 %) and shrub lands (8 %) occur at various elevations throughout the B2M. Mixed-conifer (mostly lodgepole pine) covers nearly 9 % of the landscape. Alpine plant communities (4 %) are found on the higher peaks in the Badger Creek basin. Aspen stands occur primarily at lower elevations in the Two Medicine and Badger drainages.

A recent botanical report tallied at least 1088 vascular species of plants within the area encompassed by the Blackfoot Indian Reservation, eastern Glacier National Park and the Badger-Two Medicine (Luna 2015). This local flora accounts for 48 % of all the native vascular plants known in Montana. At least 137 plants are of cultural importance to the Blackfoot Tribe and other members of the Blackfoot Confederacy. From the list of plant 'species of concern' for Montana, 22 species are known to occur in the Badger Two Medicine area.

The Badger-Two Medicine provides crucial habitats and security for several vulnerable – grizzly bear, wolverine, mountain goat, and westslope cutthroat trout (Weaver 2011). Today, these species are rare elsewhere within their historic range. The B2M also sustains an elk herd of about 300 animals, and suitable habitat for bison or buffalo. The stretch of U.S. Highway 2 between the Badger-Two Medicine and Glacier National Park is a crucial connecting linkage for wide-ranging wildlife (see Chapter 2).

Table 1. Area (ac) of land cover classes across the Badger-two Medicine area, Montana. Land types derived from classification and mapping by the Montana Natural Heritage Program (<http://mtnhp.org>).

Land Cover Class	Area (ac)	Percent
Spruce Fir	50,545	38.0
Recent Burns	29,257	22.0
Grassland	18,996	14.3
Mixed Conifer	11,571	8.7
Shrubland	10,324	7.8
Alpine	5,131	3.9
Aspen	3,577	2.7
Riparian/Wetlands	2,094	1.6
Developed/cliffs	1,390	1.0
TOTAL	132,885	100.0

Historical Context of the Blackfeet and the Badger-Two Medicine

Although Native American tribes were fluid in their movements and territory, oral stories of the Blackfeet people or *Niitsitapi* (meaning ‘original or real people’) trace occupancy of their plains and mountain territory to “time immemorial”. The Blackfoot Confederacy is composed of four tribes, with three in Alberta: (1) *Siksikah* or ‘Canadian Blackfoot’ with a reservation west of Calgary, (2) *Kainah* or ‘Blood’ tribe with a reservation in the St. Mary River area south of MacLeod, and (3) *Pikunni* or ‘North Piegan’ (Canadian spelling) with a reservation southwest of MacLeod. The Blackfeet in Montana are *Amskapi-Pikunni* or the ‘South Piegan’, with a reservation of 1.5 million acres from the Canadian border south past the town to Browning to Birch Creek.

The Montana Blackfeet thrived on the vast buffalo (*Iinnii*) herds that roamed their huge traditional territory across the plains and foothills of northern Montana. A succession of smallpox epidemics transmitted by white traders and settlers, however, ravaged the Blackfeet population in 1837, 1845, and 1869. Treaties with the United States in 1851 (Fort Laramie Treaty) and 1855 (Lame Bull Treaty) defined Blackfeet territory as an area that encompassed 20 million acres from the Continental Divide east to the Musselshell River and between the Missouri and Yellowstone Rivers. Subsequently, an executive order by President Grant in 1873 and especially an act of Congress in 1874 further diminished Blackfeet lands – without any consultation or payment to the Blackfeet tribe.

Figure 2. Distribution of elevation classes across the Badger-Two Medicine area, Montana. Each of the four classes is roughly 1000 ft (300 m) in range of elevation.

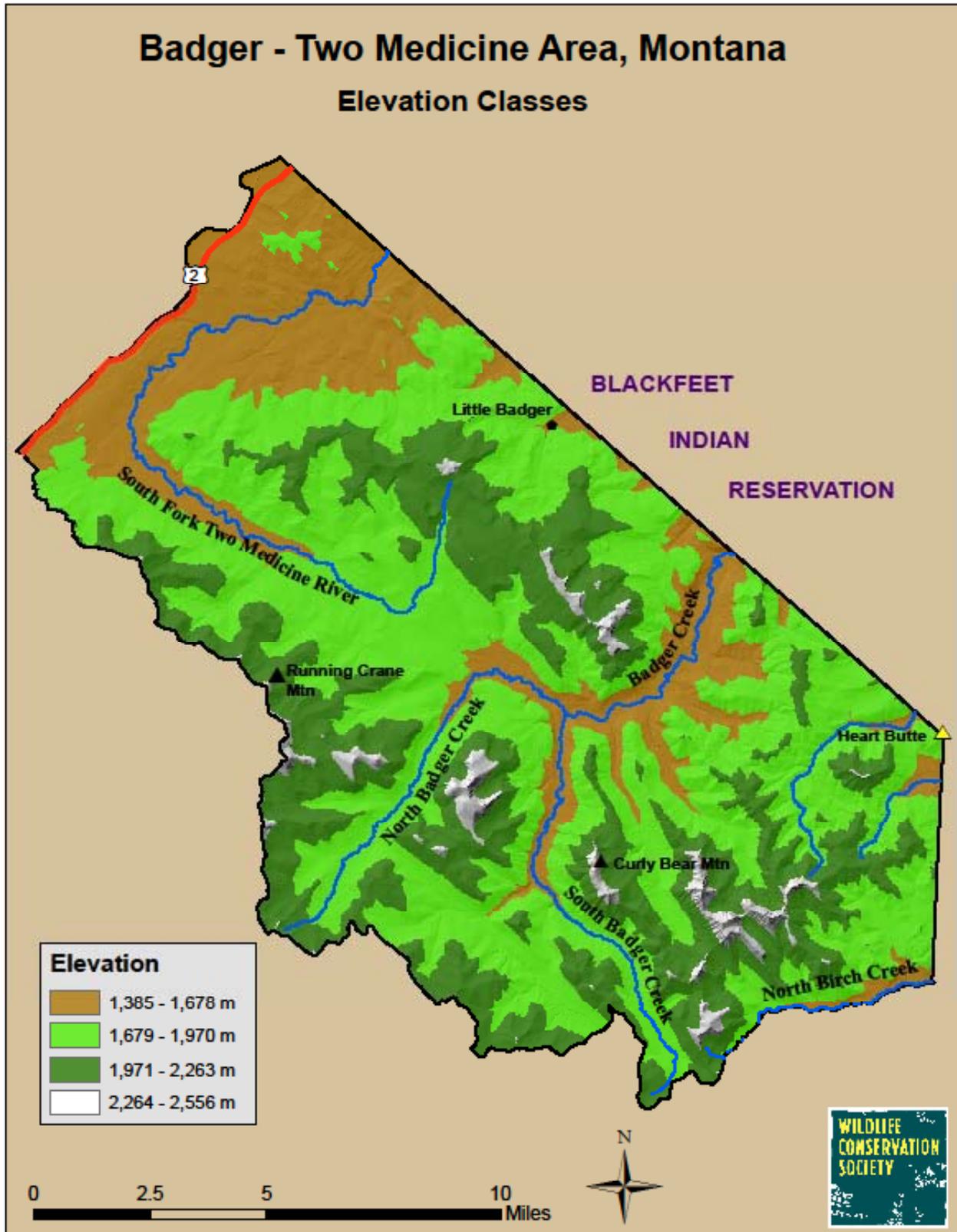
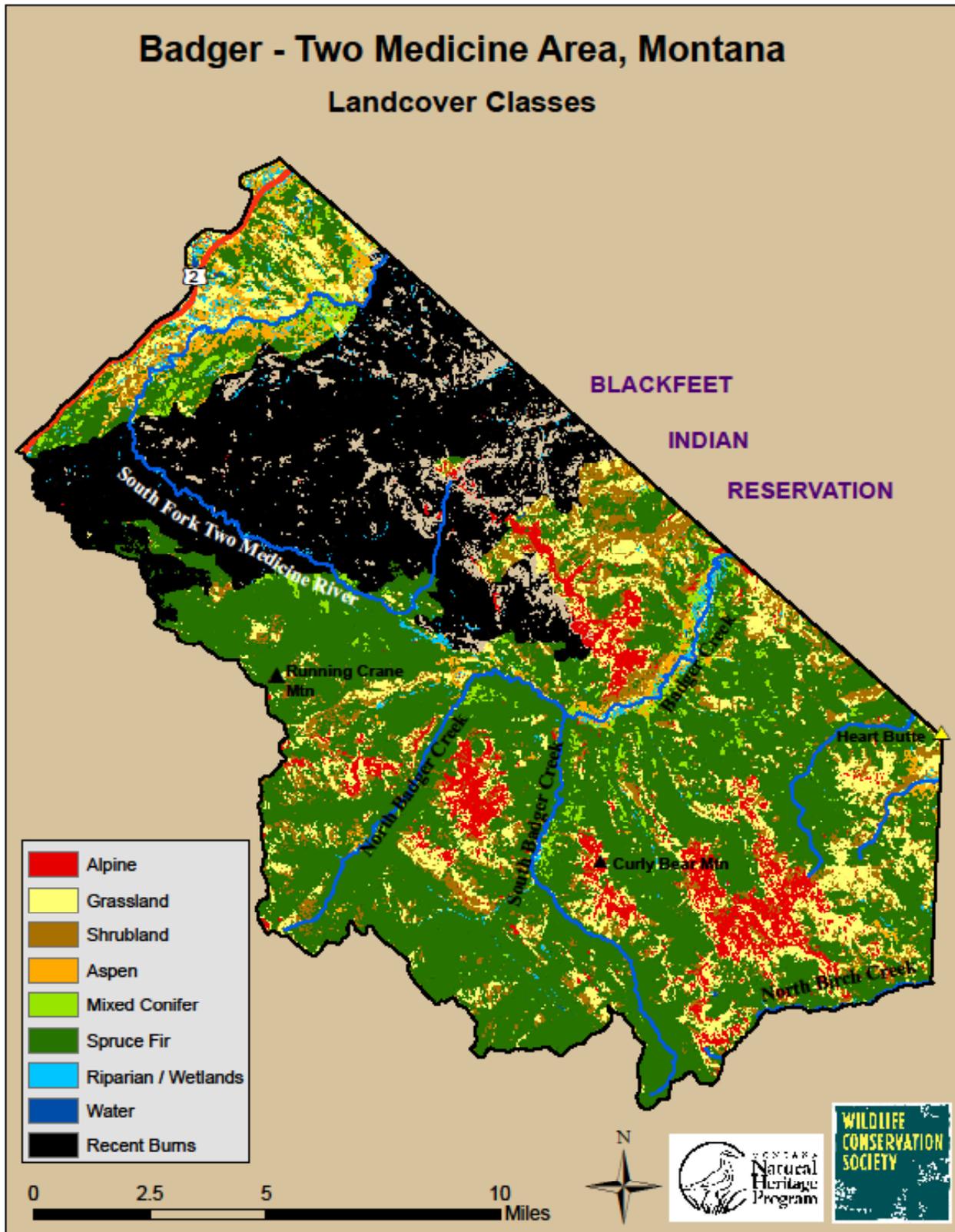


Figure 3. Distribution of landcover classes across the Badger-Two Medicine area, Montana. The Skyland fire occurred in 2007.



During this time, unrelenting killing of the bison (the government's Indian policy of destroying their food base or 'commissary') resulted in near-extinction of wild buffalo by 1883. During the winter of 1883-84, 500-600 Blackfeet (1/4 of the population) starved for lack of buffalo, as government food supplies did not arrive until the spring (Schultz 1962). In the Sweet Grass Hills agreement of 1887, the Blackfeet sold the eastern portion of their reservation (including sacred lands in the Sweetgrass Hills) to the U.S. government. Thus - in a span of a single lifetime - the Blackfeet had lost many of their people, buffalo as their primary source of sustenance, shelter and spirit, and most of their vast traditional territory ... they were destitute.

Beginning in the early 1890s, Congress was being pressured by numerous interested parties to open up the western part of the Blackfeet Reservation to mineral exploration – especially gold prospects. On September 26, 1895, Indians of the Blackfeet tribe signed an agreement to

“hereby convey, relinquish, and release to the United States all their right, title, and interest in and to that portion of their present reservation ...[as described: from the Canadian border south to Birch Creek, from the Continental Divide east to essentially the edge of the prairie]”
– Article I.

The United States purchased from the Blackfeet Tribe ~500,000 acres of these lands for the sum of \$1,500,000. The record leaves little doubt that the Blackfeet did not ask to sell these lands but had little leverage against the dominant government. One of the Commissioners was George Bird Grinnell, already familiar with the country and later 'founder' of Glacier National Park in 1910. The agreement was ratified by the U.S. Senate on June 10, 1896, so is referred hereafter as the 'Agreement of 1895-96'. This area became known as the 'Ceded Strip' because it encompasses a narrow segment along the Rocky Mountain Front.

Importantly, the Blackfeet reserved certain rights in the ceded strip including in the Badger-Two Medicine:

“Provided, That said Indians shall have, and do hereby reserve to themselves, the right to go upon any portion of the lands hereby conveyed so long as the same shall remain public lands of the United States, and to cut and remove therefrom wood and timber for agency and school purposes, and for their personal uses for houses, fences, and all other domestic purposes: And provided further, That the said Indians hereby reserve and retain the right to hunt upon said lands and to fish in the streams thereof so long as the same shall remain public lands of the United States under and in accordance with the provisions of the game and fish laws of the State of Montana.”

On February 22, 1897 President Grover Cleveland issued Proclamation No. 29, which established the Lewis and Clarke [sic] Forest Reserve in this area of Montana. After an initial rush of mineral claim staking in 1898, very little mineral value was found and the mining interest faded by 1903. On June 9, 1903, President Theodore Roosevelt issued Proclamation No. 3, which added the Flathead Forest Reserve to the Lewis and Clark National Forest Reserve (Davis 1983). Both of these proclamations contained clauses stating that the rights of the Blackfeet – as outlined in the 1895-96 Agreement – would be protected (Ashby 1985). Subsequently, the northern portion of this ‘ceded strip’ became part of Glacier National Park in 1910, whereas the southern portion in the Badger-Two Medicine remained part of the Lewis and Clark National Forest. (The contentious history of Glacier National Park and Blackfeet rights is outside the scope of this report; see Ashby 1985, Pitt 1987, and Spence 2002 for discussion).

It is against this backdrop of history that the Blackfeet Tribe has sought ways to protect the Badger-Two Medicine as an area of tribal importance. Based upon the Agreement of 1895-96, the Blackfeet have long made various criticisms of Forest Service decisions and argued for a larger role in co-managing this sacred land and their reserved rights (Nie 2008):

“The fate of the Blackfeet Nation and our confederated Tribes is bound to the fate of the Badger-Two Medicine and we refuse to accept any activities within the Ceded Strip that violate this Traditional Cultural Site and our Treaty Rights.”

Chief Earl Old Person, 2007

A Century of Conservation Legacies

Over the past century, there have been significant conservation investments to protect lands in the Crown of the Continent Ecosystem. Here, I present a chronology of those steadfast efforts along the Rocky Mountain Front (see Graetz and Graetz 2004).

In 1910, Glacier National Park was established as one of America’s earliest and most spectacular National Parks. Straddling the Continental Divide, Glacier National Park encompasses 1,013,572 acres. Along with its Peace Park sister Waterton Lakes National Park in Canada, Glacier National Park was designated a World Heritage Site in 1995. It anchors the north end of wild country along the Rocky Mountain Front in Montana.

In 1940, the U.S. Forest Service coalesced about 950,000 acres of previous Primitive Areas into the Bob Marshall Wilderness. With subsequent additions, it now encompasses 1,009,352 acres and was brought into the national wilderness system in 1964 following passage of the Wilderness Act. Straddling the Continental Divide, the ‘Bob’ protects the headwaters of the South and Middle Forks of the Flathead River as well as the Sun River.

In 1972, Congress protected 239,936 acres near the south end of the Rocky Mountain Front as the Scapegoat Wilderness. From the heights of the massive Scapegoat Plateau flow the headwaters of the South Fork Sun River, the Dearborn, and the fabled Blackfoot River. In 1978, Montana Senator Lee Metcalf – inspired by the notion of room to roam for grizzly bears – led Congressional protection of 286,700 acres known as the Great Bear Wilderness. This wilderness encompasses the upper drainage of the Middle Fork Flathead River from the Continental Divide west to the Flathead Range. Altogether, these three wildernesses protect 1,535,988 acres in the heart of the Crown of the Continent Ecosystem – one of the largest intact and diverse ecosystems in the United States.

The State of Montana has made significant investments in conservation lands along the Rocky Mountain Front, too. Between 1948 and 1974, Montana Department of Fish, Wildlife and Parks (FWP) acquired 19,771 acres to establish the Sun River Wildlife Management Area (WMA). In 1976-77, the Department purchased 3,047 acres to secure the Ear Mountain WMA. During 1979-1985, it bought 10,497 acres to protect the Blackleaf WMA. Most of these lands (33,315 acres) were purchased to provide critical winter range for ungulates such as elk, bighorn sheep, and deer. Of course, these WMAs provide many other conservation benefits as well.

Ranching families and non-governmental land trusts have been working hard to conserve private lands and wildlife along the foothills of the Rocky Mountain Front in Montana. Since 1980, several land trusts and the U.S. Fish and Wildlife Service (USFWS) have acquired and/or received conservation easements for >200,000 acres along the Front. USFWS leads the way with 44 % of the holdings, followed by The Nature Conservancy (TNC) with 39 %. TNC also owns 16,000 + acres at Pine Butte and nearby areas (D. Carr, The Nature Conservancy, *personal communication*).

Finally, in December 2014, Congress passed the Rocky Mountain Front Heritage Act. This action protected all the remaining roadless public lands along the Front south of the Badger-Two Medicine by adding 67,000 acres to the Bob Marshall Wilderness and designating another 208,000 acres as a ‘Conservation Management Area’. It also includes about 13,000 acres of native prairie grasslands on BLM lands. This unique legislative package protected critical lands and waters for numerous vulnerable species – including grizzly bears, wolverines, bighorn sheep and mountain goats, and westslope cutthroat trout (Weaver 2011).

Thus – from the 1910 to the present day – successive generations of citizens and government leaders have worked hard to save the core of this splendid ecosystem by establishing these world-class parks and wildernesses, coupled with conservation of critical wildlife habitat on state and private lands along the periphery. These collective achievements constitute a great gift ... but, one important piece remains missing in this remarkable legacy: the Badger-Two Medicine.

Completing the Conservation Legacy: A New Path Forward for the Badger – Two Medicine?

Over the past 30 years, there have been several efforts to protect the Badger-Two Medicine area through protective designation by Congress. The original Great Bear Wilderness bill, for example, included the Badger-Two Medicine area, but it was eventually removed from the final version passed in 1978. It was withdrawn because the Blackfeet Tribal Business Council initially opposed the bill as they thought it might adversely affect their reserved rights. The Council later supported the possibility of wilderness designation for the Badger-Two Medicine “if the Montana Congressional delegation can assure the Blackfeet Tribal Business Council that the full force and authority of the legal rights outlined in the Agreement of 1895 will be maintained” (see footnote 8 *in* Nie 2008). According to Professor Arnold Bolle, distinguished Dean of the School of Forestry at University of Montana (Bolle 1987),

“... ever since then, members of the delegation refuse to consider wilderness designation of this area until they have full approval from the tribe. Environmentalists feel that they made a serious error by not being in touch with the tribe and working out an agreement with them.”

Subsequently, some Blackfeet traditionalists (including the Pikuni Traditionalists Association) advocated a form of federal wilderness designation for the Badger-Two Medicine area. In appealing the Lewis and Clark Forest Plan in 1986, one prominent group of Blackfeet traditionalists proposed protecting the Badger-Two Medicine area as wilderness, with some special provisions (Vest 1988, see footnote 10-11 *in* Nie 2008).

In 1988, President Reagan vetoed a Montana Wilderness bill passed by Congress that would recognize the importance of the Badger-Two Medicine area, clarify Blackfeet Treaty rights and charge the Forest Service to prepare a joint management plan with the Blackfeet Tribe.

In 1990, Montana Representative Pat Williams introduced the *Badger-Two Medicine Act* that would have designated the area as ‘congressional study lands’ for the purpose of protecting treaty rights. The proposed bill withdrew lands from mining and energy development and called for the Forest Service to cooperate with the Tribe in the preparation of a ‘joint land management plan.’ It prohibited commercial timber sales in the area, though it did not “preclude the gathering of timber by the Blackfeet Tribe in the exercise of valid treaty rights.”

In 1993, Montana Senator Max Baucus introduced the *Badger-Two Medicine Protection Act*. The bill authorized a wilderness review by an advisory committee (with tribal representation) and special consideration given to Blackfeet treaty rights. Montana Representative Pat Williams introduced a similar bill to withdraw 116,600 acres of National Forest lands in the B2M to ‘protect its Wilderness qualities’. The bill also provided that: “Special consid-

eration shall be given to the religious, wilderness and wildlife uses of the area, taking into account any treaties the United States has entered into with the Blackfeet Nation.” These bills did not come up for a Congressional vote (see footnote 14 *in* Nie 2008). All of these bills had a central theme: protecting the wildlife, wildland, and cultural values of the area - with explicit recognition and accommodation of the reserved rights of the Blackfeet Tribe.

These earlier efforts did not succeed – perhaps for lack of comprehensive and mutual understanding of history and perspective among the parties, coupled with lack of leadership from the ground up. From a strong base of affirmed treaty rights and cultural identity, tribes are reaching for more meaningful participation in the co-stewardship of traditional areas on public lands. In recent years, the Forest Service has developed progressive policies that recognized the tenets of tribal rights and seeks constructive relations. From this convergence of historic and recent currents arises a new opportunity for a co-operative framework that reflects the unique legal context of tribal rights, agency mandates, as well as diverse cultures and perspectives of native people and the wider American community. Now is the time to complete the legacy of conservation by charting a new path for protection of the Badger-Two Medicine based upon greater understanding and leadership ... a path of co-stewardship that integrates the wildlife and cultural values into a shared vision of *vital land, sacred land*.

The purpose of this report is to provide pertinent background and context that informs discussions and decisions about the future of the Badger-Two Medicine area, Montana. The goal is to synthesize information about the conservation value of the area for vulnerable fish and wildlife species, as well as its cultural significance to the Blackfeet people and their reserved rights in the area.

In Chapter 2, I develop a framework for conservation assessment and provide a vulnerability profile for several fish and wildlife species – westslope cutthroat trout, grizzly bear, wolverine, mountain goat, elk, and bison. Based upon a synthesis of local empirical data and/or habitat models, I identify and map key conservation areas in the Badger-Two Medicine for each species. I used this data and the latest computer software to identify and map connectivity for wide-ranging wildlife across U.S. Highway 2 that borders the north side of the B2M and the south boundary of Glacier National Park. I also summarize the latest scientific findings about climate change and discuss the importance of the Badger-Two Medicine for protecting and connecting large diverse landscapes as a smart response to changing climate.

In Chapter 3, I discuss the Badger-Two Medicine in the context of sacred lands for the Blackfeet people. I begin with an overview of provisions of the National Historical Protection Act. I summarize the cultural attributes based upon the latest ethnographic research, which resulted in the entire Badger-Two Medicine area (and more) officially determined as eligible for listing in the National Register of Historic Places.

In Chapter 4, I profile three selected case studies of co-management with indigenous people: Australia, Bolivia, and the Canadian province of British Columbia. From these studies and a broader body of experience around the world, I distill the key lessons learned for successful co-management.

In Chapter 5, I address the legal context for collaborative management here in the United States through examination of treaty rights and judicial rulings, Congressional Indian law, and Presidential Executive Orders. I bring forward the latest policy directives of the USDA Forest Service on tribal relations and collaborations with Indian tribes.

In Chapter 6, I introduce and discuss the concept of *co-stewardship* and how it might be framed for the Badger-Two Medicine. I examine three possible options for protection: (1) Special Area designation under the Lewis and Clark National Forest Plan, (2) Congressional designation as Wilderness - or perhaps a unique 'Conservation and Culture Area', or (3) Presidential proclamation as a National Monument.

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2. KEY CONSERVATION AREAS FOR VULNERABLE FISH AND WILDLIFE SPECIES

Introduction: A Framework for Assessment and Vulnerability Profiles

Contemporary planning for wildlife conservation often incorporates a concept called ‘landscape species’ (Sanderson et al. 2002). It is based on the notion that species which use large, ecologically diverse areas can serve as ‘umbrellas’ or surrogates for conservation of other species. The approach is especially useful if a suite of species is chosen considering area requirements, heterogeneity of habitats, ecological functionality, socioeconomic significance, and effects of climate change (Carroll et al. 2009).

For assessing the conservation value of the Badger-Two Medicine, I selected the following suite of fish and wildlife species: westslope cutthroat trout (*Oncorhynchus clarki lewisi*), grizzly bear (*Ursus arctos horribilis*), wolverine (*Gulo gulo*), and mountain goat (*Oreamnus americanus*). I selected this suite because it includes wide-ranging species with complementary sets of diverse habitat requirements, and each is vulnerable to direct human impacts and/or climate change. Additionally, I address 2 species that have cultural importance to the Blackfeet – elk (*Cervus elaphus*) and bison or buffalo (*Bison bison*).

I begin with a framework for assessing vulnerability following Weaver et al. (1996). For each species, I provide a brief vulnerability profile; detailed profiles with supporting literature citations are provided in a recent report for the Flathead National Forest (Weaver 2014: Appendix I, available at www.wcsnorthamerica.org under Wild Places/Crown of the Continent). At the end of this chapter, I do provide most pertinent literature citations for each species. I developed a scoring system by customizing criteria to reflect attributes that are important to the long-term persistence of that species. I used the scored maps of *very high* (= 3) and *high* importance (= 2) to identify key conservation areas for each species. Based upon a synthesis of local empirical data and/or habitat models, I provide GIS-based maps and a geographical narrative of key conservation areas in the Badger-Two Medicine for each species. I use this data and the latest computer software to identify and map connectivity for wide-ranging wildlife

across U.S. Highway 2. Lastly, I summarize the latest scientific findings about climate change and discuss the importance of the Badger-Two Medicine for protecting and connecting large diverse landscapes as a smart strategy for adaptation to climate change. During 2010-2014, I hiked and rode horse-back many miles on and off trails in field reconnaissance of the Badger-Two Medicine.

Vulnerability Profiles

Vulnerability refers to the susceptibility of species to disturbances of various kinds. Over millennia, species have evolved a variety of mechanisms that enabled them to withstand environmental disturbance and still persist (high resistance and/or resiliency). Yet some species seem more vulnerable than others: what factors contribute to their vulnerability?

I postulate a basic attribute of vulnerability (lack of resistance or resiliency) at each of three hierarchical levels: individual, population, and metapopulation. Because disturbances occur at different spatial and temporal scales, no single level of organization can respond adequately to all disturbances. I provide a brief synopsis of vulnerability according to: (1) niche flexibility, (2) resistance to hybridization (fish) or reproductive capacity and mortality risk (mammals), (3) dispersal and connectivity, (4) sensitivity to human disturbance, and (5) response to climate change.

At the individual level, an animal can exhibit narrow physiological tolerance to an environmental condition or little behavioral flexibility in food acquisition and selection of habitat (i.e., 'specialist'). For example, if there is change in food availability or suitability of habitat, an individual may not be able to substitute one resource for another.

At the population level, native fish may have little resistance to invasion by non-native fish and are vulnerable to hybridization and/or competition. Some mammals cannot compensate for excessive mortality with increased reproduction and/or survivorship to mitigate demographic fluctuations. High survivorship and longevity of reproducing adult females typically is critical to the continued well-being of many mammal populations.

At the metapopulation level, dispersal enables animals to augment an existing population or re-colonize an area where a population has been extirpated. Dispersal is successful only if the individual survives, establishes a home range, finds a mate and reproduces. Successful dispersal is a mechanism by which declining populations are supplemented, genes are shared across the landscape, and functional connectivity of meta-populations is established. Where landscapes have been fragmented by human disturbance, animals may not be able to disperse successfully. Moreover, some species are sensitive to human disturbance and may be displaced from key habitats. Species also vary in their capacity to adapt to climate change.

As human activities accelerate rates of disturbance across a greater extent of the landscape, the combination of rapid change and simplification can undermine the evolved resiliency of species and render their populations more fragile. Cumulative effects can accrue that threaten their persistence. One of the key messages of resilience thinking is to *keep future options open through an emphasis on ecological variability across space and time* (Walker and Salt 2006).

Westslope Cutthroat Trout



Vulnerability Profile

Westslope cutthroat trout exhibit **high vulnerability** due to low resistance and resiliency to human impacts. They are adapted to a cold-water niche – especially for spawning and rearing – and may find climate refugia in higher elevation streams with colder temperatures (Bear 2007). Moreover, westslope cutthroat have especially low resistance to invasion and genetic swamping by non-native trout (Muhlfeld et al. 2009a, Muhlfeld et al. 2009b). Various genetic studies have detected substantial genetic differentiation in westslope cutthroat trout among drainages; hence, it may be necessary to manage them separately to maintain genetic diversity across a region (beta-diversity) and its evolutionary legacy (Taylor et al. 2003, Drinan et al. 2011). Due to the wide-spread introduction of non-native rainbow trout, most of the remaining genetically-pure populations of westslope cutthroat trout are now confined to headwater streams – where they have low growth and productivity (Paul and Post 2001). Westslope cutthroat trout are vulnerable to several detrimental effects of human activities associated with roads such as increased sedimentation into streams and surreptitious release of non-native trout (Alberta ESRD 2013). Finally, climate change will likely result in warmer water and lower stream levels at low-mid elevations, (particularly in late summer) (Haak et al. 2010). This may enable rainbow trout to invade even further upstream, where they will compete and hybridize with westslope cutthroat trout and further isolate remnant pure populations in headwaters (Williams et al. 2009). The net consequence will be lower population viability. Two strategies appear useful but have trade-offs: (1) safeguarding large, well-connected networks that retain genetically-pure populations of westslope cutthroat trout, and (2) installing barriers to protect selected cutthroat populations and/or stocking streams with natural barriers with genetically-pure specimens (Fausch et al. 2009).

Methods for Scoring Conservation Importance

Maintaining genetic integrity of westslope cutthroat trout in suitable cold-water habitat is widely considered to be a primary challenge in their conservation. The status assessment of westslope cutthroat trout designated populations with $\leq 10\%$ genetic introgression as ‘conservation populations’ (Shepard et al. 2005). Some have recommended that only genetically-pure populations of westslope cutthroat trout should be protected to safeguard their local adaptations and minimize opportunity for spread of introgression (Allendorf et al. 2004). Others argue that disregard of *all* genetically-contaminated populations might result in loss of unique phenotypic, genotypic, and behavioral variations (Dowling and Childs 1992). Moreover, there are documented cases where WCT populations with slight introgression (5-10%) have recovered over time to purity ($< 1\%$ introgression) (Bennett and Kershner 2009). Following the multi-state assessment of genetic status and conservation needs of westslope cutthroat trout (Shepard et al. 2005), I assigned the following importance scores for westslope cutthroat trout and mapped their current distribution:

- Very High (3) = Core Conservation Population of $\geq 99\%$ genetic purity
- Very High (3) = streams where CCP may be restored
- High (2) = Conservation Population of $\geq 90\%$ but $< 99\%$ genetic integrity

I used the latest information (2014) on genetic status of sampled streams (D. Mosher, Montana FWP, *unpublished data*).

Key Conservation Areas

Westslope cutthroat trout are the native trout of the Rocky Mountain Front. Unfortunately, recent genetic sampling reveals that many of the westslope cutthroat trout populations along the Front have been hybridized by non-native rainbow trout or Yellowstone cutthroat trout (D. Moser and D. Yerk, Montana FWP, *personal communication*). The Badger-Two Medicine area represents a stronghold for remnant conservation populations of westslope cutthroat trout, with potential for further restoration.

About 13.9 mi of streams with *very high* conservation value and 37.7 mi of *high* conservation value for westslope cutthroat trout (WCT) occur on the Badger-Two Medicine area, Montana (Table 2, Figure 4). Streams with remnant, pure populations of WCT occur primarily in headwater tributaries of the South Fork Two Medicine River drainage, and in two isolated streams in the Badger Creek drainage. An active restoration project is underway in upper Woods Creek and another planned for Hyde Creek (tributaries to the South Fork Two Medicine River). Streams with WCT populations having slight introgression include the main stem of the South Fork Two Medicine River and headwater streams of North Badger Creek. The Badger-Two Medicine is one of the last, best areas for conservation populations of westslope cutthroat trout along the Rocky Mountain Front. More specific information on these streams is provided below.

Table 2. Length (mi) and relative proportion of streams with westslope cutthroat trout conservation values in the Badger-Two Medicine area, Lewis and Clark National Forest, Montana.

Very High (3)		Very High (restoration, 3)		High (2)	
Length	Percent	Length	Percent	Length	Percent
13.9	24.3	5.6	9.8	37.7	65.9

South Fork Two Medicine River drainage:

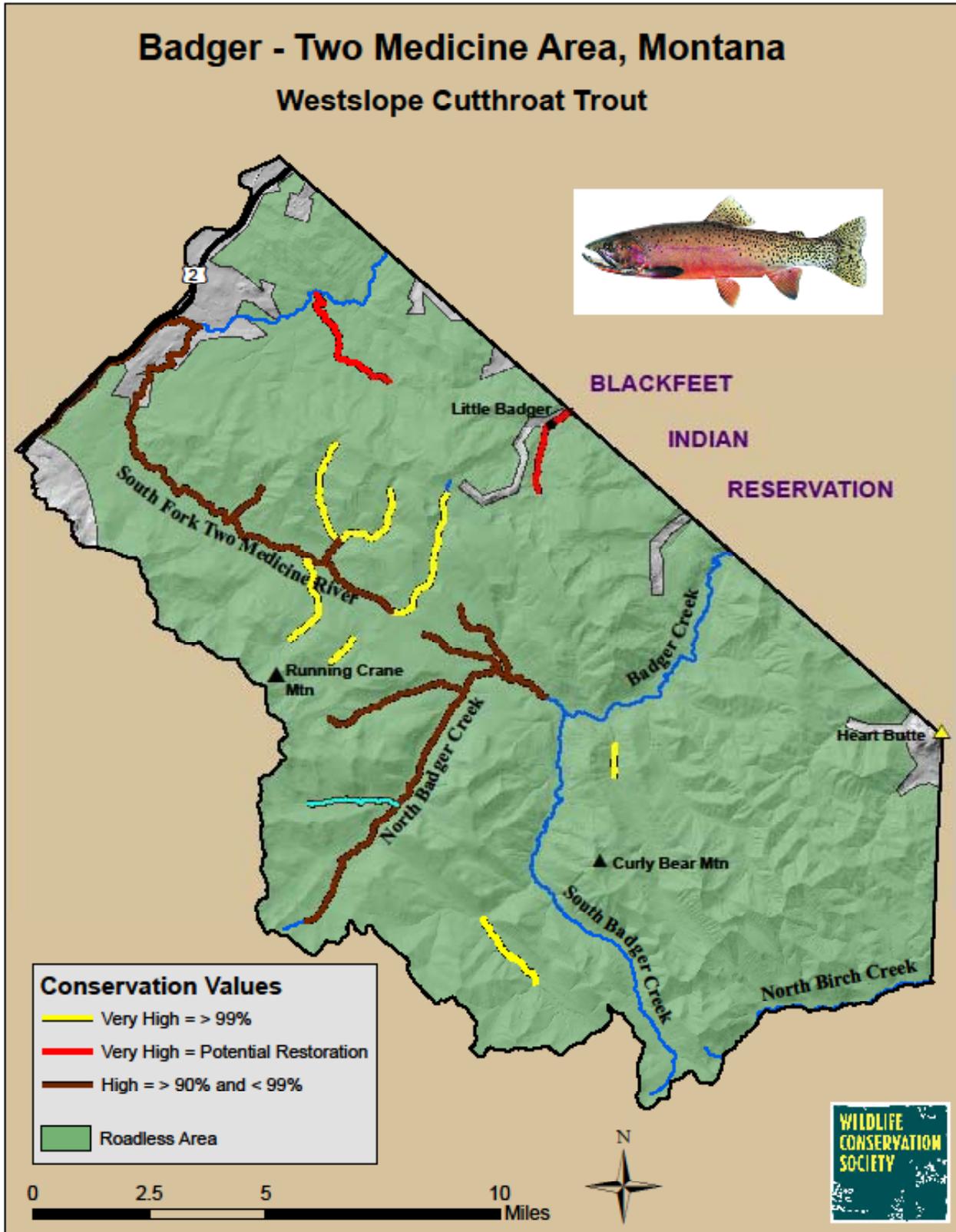
South Fork Two Medicine Creek: In 1984, a sample of 31 westslope cutthroat trout collected from the South Fork Two Medicine Creek was primarily WCT with a small amount of rainbow trout admixture (97.4% WCT). Based upon additional sampling in 2011, only 19 of 31 (61%) appeared to be pure (letter to MFWP from R. Leary, Trout and Salmon Genetics Laboratory, University of Montana, 2011). There appears to be a mix of conservation and non-conservation populations along the South Fork Two Medicine Creek (D. Moser, Montana FWP, *personal communication*).

Hyde Creek: Hyde Creek may have been fishless historically because of a significant barrier near the confluence with South Fork Two Medicine Creek. Hyde Creek appears to have great potential to host a large and viable WCT population over the long term (> 100 years). A survey in 2012 found high densities of non-native brook trout in about 5.5 miles of the main stem Hyde Creek. It's estimated that this section could support 2,600 - 3,500 trout. Hyde Creek was treated with piscicides in summer 2014 to eliminate non-native brook trout prior to restoration of westslope cutthroat trout. Montana FWP plans to obtain donor WCT from Midvale Creek, which supports a mixed population of predominantly pure westslope cutthroats and recent hybrids. Those tested to have genetic purity would be transferred to Hyde Creek (D. Moser, Montana FWP, *personal communication*).

Mettler Creek: This stream was identified as a potential site to introduce pure westslope cutthroat trout. Based upon further evaluation, however, it has been eliminated from consideration due to lack of overwintering pools, low stream-flows during summer, and several barriers (D. Moser, Montana FWP, *personal communication*).

Woods Creek: A sample of 10 fish in 1984 indicated the population had a small amount of rainbow trout admixture (2%). Of 25 trout sampled in 2011, five were clearly of higher admixture and likely recent immigrants from the main-stem South Fork Two Medicine. The remainder of the trout exhibited a slight amount of introgression (99.4% WCT x 0.6% RB). Surveys in 2011 revealed a significant barrier just upstream of where fish were sampled in 1984. This fishless habitat was stocked with individuals from Sidney Creek in 2013 and 2014 (≈15 individuals each year). These transfers will continue for at least 3 additional years (D. Moser, Montana FWP, *personal communication*).

Figure 4. Location of key streams and conservation values for westslope cutthroat trout, Badger-Two Medicine area, Montana.



East Fork Woods Creek: In East Fork Woods Creek, a sample of 10 fish sample collected in 1994 indicated it held a pure population of westslope cutthroat trout. Repeat sampling in 2001 indicated four of the 25 sampled fish displayed introgression of rainbow trout markers. In 2011, a sample of five fish sample indicated a very slight amount of hybridization (99.8% WCT). Thus, it appears that the East Fork Woods Creek WCT population is pure or nearly pure. Based upon electrofishing surveys in 2009, westslope cutthroat trout occur in low numbers in East Fork Woods Creek (20 fish per 100m, 80-189 mm in length).

Sydney Creek: Genetic analyses (SNPS) of 49 fish collected in upper Sydney Creek in 2012 (upstream of a fish barrier) suggested that Sydney Creek has a pure population of WCT. Nonetheless, polymorphisms at several markers cast some doubt on their genetic purity (letter to MFWP from R. Leary, Trout and Salmon Genetics Laboratory, University of Montana, 2012). If these fish suffer from introgression, it is at a very low level (0.002) and does not preclude transfer to empty habitat in Woods Creek.

Lost Shirt Creek: Previous genetic samples collected in 1993 and 2002 indicated the presence of a westslope population with slight introgression of rainbow trout (93% WCT x 7 % RB). Twenty samples collected in 2011 differed greatly substantially from previous samples (letter to MFWP from R. Leary, Trout and Salmon Genetics Laboratory, University of Montana, 2012). Eighteen of the individuals collected appeared to be non-hybridized WCT. One individual appeared to be a WCT x RB hybrid and one individual appeared to be a WCT x RB x YCT hybrid. This sample suggests a mixed population of genetically-pure WCT and a few hybrids (D. Moser, Montana FWP, *personal communication*).

Whiterock Creek: Older samples tested by allozyme techniques indicated that trout in Whiterock Creek was a pure population of westslope cutthroats. But more recent analysis using INDEL techniques revealed that the population was a hybrid swarm between Yellowstone, rainbow, and westslope with a predominant (99%) westslope contribution.

Little Badger: This stream has been identified for potential restoration, pending further evaluation (D. Moser, Montana FWP, *personal communication*).

Badger Creek drainage:

North Fork Badger Creek (including tributaries Red Poacher Creek, Lee Creek, and Badger Cabin Creek: A comprehensive review of genetic tests indicates that this population contains a hybrid swarm of westslope cutthroat trout with slight introgression of Yellowstone cutthroat trout (<1%) (letter to MFWP from R. Leary, Trout and Salmon Genetics Laboratory, University of Montana, 2012).

Lonesome Creek: In 2002 and 2003, 100 westslope cutthroat trout were transferred from Whiterock Creek to fishless habitat upstream of a series of waterfalls on Lonesome Creek. A low density of WCT now appears established in a 0.5-mi section of Lonesome Creek approximately 0.5 miles upstream of its confluence with Badger Creek (10 fish per 100 m over a 240-m reach, 61-255 mm in length sampled in 2009). These fish represent a replication/transfer from Whiterock Creek, thus Lonesome creek hold a hybrid swarm with 1% introgression (see Whiterock Creek description).

Muskrat Creek: Muskrat Creek is separated from the South Fork Badger Creek by a significant barrier falls. Yet, it contains an unusual population of pure westslope cutthroat trout with >99% genetic purity (R. Leary 2007). There is no record of a stocking effort in Muskrat Creek by any agency; therefore, this population is likely the result of an illegal transfer of westslope cutthroat trout (D. Moser, Montana FWP, *personal communication*).

South Badger Creek: This stream was identified for potential transfer of westslope cutthroat trout but thermograph data indicated that the water would be too cold for winter survival of juvenile fish.

Grizzly Bear

Milo Burcham



Vulnerability Profile

Despite their resourcefulness, grizzly bears exhibit **high vulnerability** due to low population resiliency. Grizzly bears exhibit considerable flexibility in their foraging and habitat use over space and time (Schwartz et al. 2003). Although grizzly bears in the Crown of the Continent Ecosystem use a wide variety of foods, four main groups compose most of their diet: grasses and sedges in the spring, forbs (e.g., cow parsnip *Heracleum lanatum*) and forb roots (e.g., bear root *Hedysarum* spp., and biscuit root *Lomatium cous*) in early summer, berries (e.g., huckleberry *Vaccinium* spp. and buffaloberry *Shepherdia canadensis*) in late summer and fall, and mammals (including ungulates and rodents) in spring and fall (Craighead et al. 1982, Aune and Kasworm 1989, McLellan and Hovey 1995, Nielsen et al. 2010). Key habitats include avalanche chutes (Mace and Bissell 1985, Waller and Mace 1997, Theberge 2002), riparian zones and mesic sites (Mace and Bissell 1985, McLellan and Hovey 2001a, Graves et al. 2011), and berry patches, especially huckleberry (McLellan and Hovey 2001a). Grizzly bears require secure access to quality forage both in spring and late summer – fall, but roads with moderate traffic volume can displace bears from key habitats (Wielgus et al. 2002, Northrup et al. 2012). Young female bears do not disperse very far and adult females do not readily cross major highways, which makes bear populations susceptible to landscape fragmentation (McLellan and Hovey 2001b, Proctor et al. 2012). Most importantly, bears have very low reproduction and cannot quickly compensate for excessive mortality (McLellan 1994, Schwartz et al. 2003). High survivorship of adult females is paramount to persistence of grizzly bear populations (Boyce et al. 2001). Numerous studies have demonstrated that road access into high-quality habitats (‘attractive sinks’) can increase encounter rates with people and lead to displacement, habituation,

or mortality of bears (Mace et al. 1996, Nielsen et al. 2004, Boulanger and Stenhouse 2014). Provision of ‘productive security areas’ – where bears can meet their energetic requirements while minimizing risk of human-caused mortality – has emerged as a critical component of contemporary management for grizzly bears (Weaver et al. 1996, Gibeau et al. 2001, Nielsen et al. 2010).

How bears may respond to climate changes remains uncertain, but more humans moving to Montana (in response to climate impacts elsewhere) could lead to more human activity. This could restrict bear movements and elevate mortality risk as bears search for suitable habitats. Altogether, this does not provide much resiliency in human-dominated landscapes. The grizzly bear is federally listed as a threatened species under the Endangered Species Act.

Methods for Scoring Conservation Importance

The key to successful grizzly bear conservation is to manage both from the bottom-up for secure access to important food resources and from the top-down for lower risk of human-caused mortality (Weaver et al. 1986, Nielsen et al. 2010). Accordingly, I combined data and maps of (1) high-quality habitat components as well as (2) zones of displacement and mortality risk around roads.

To map habitat for grizzly bears, I devised a model that incorporates *primary* and *secondary* habitat components. Due to its geographic location, the Badger-Two Medicine area is cooler and wetter than the rest of the Rocky Mountain Front and rather more similar to the adjacent Flathead National Forest. Key food groups include grass/sedge (spring), huckleberry and buffaloberry shrubs (late summer-fall), and roots (especially biscuitroot) (Aune and Kasworm 1989). Primary habitat components of very high value included areas where grizzly bears direct their foraging at various seasons: productive riparian zones, avalanche chutes, patches of huckleberry resulting largely from fires, and grass hillsides. Secondary habitat components included other (non-overlapping) habitats of various forest, grass, and shrub types also used by grizzly bears (R. Mace, Montana FWP, *unpublished data*). To map these primary and secondary habitat components, I placed a grid of 1-km² cells across the Badger-Two Medicine area (total = 611 grid cells).

To delineate productive riparian habitats, I mapped rivers and tributary streams having the following attributes: low stream gradient (0-3%), moderate-high stream sinuosity, multiple channels, and/or abandoned oxbows/meanders. I inspected each cell using on-line Bing aerial photographs at scales down to 1:5,000.

To map avalanche chutes, again I used on-line Bing aerial photographs at scales down to 1:5,000. I inspected each 1-km² cell for presence (rather than the total number) of avalanche chutes with a clear path of green vegetation between stringers of trees. I did not map chutes that appeared to be primarily composed of rock rubble nor the ‘head’ of the chute if it appeared barren. I also compared my mapping with a map of avalanche chutes and rock formations prepared in 2005 for the Northern Continental Divide grizzly bear ecosystem under the supervision of Tabitha Graves (courtesy T. Graves, USGS, *unpublished data*).

My mapping criteria yielded a slightly more conservative map of areas with green avalanche chutes (exclusive of rocky sites).

Although huckleberry grows on a wide variety of sites, the most productive patches typically are found on relatively open, mesic sites at mid-high elevations 20-80 years of age, often following a fire. Huckleberries occur in avalanche chutes and/or the adjacent forest stringers, too. I developed a model of huckleberry distribution using the following variables and parameters gleaned from various studies (Pfister et al. 1977, Martin 1983, compilation in Simonin 2000):

Elevation	1400 – 1999 m
Tree dbh (surrogate for stand age)	≤9.9” (20 – 80 years)
Canopy Closure	10 – 25 %
Aspect	NW (315°) → SE (135°)

(Note: Although this model is based on scientific studies and accords with some known sites, it should be considered provisional as it has not received extensive ground-truthing.)

I mapped secondary habitat components of high value following procedures developed by Richard Mace, grizzly bear biologist for Montana Fish, Wildlife, and Parks. This approach uses the latest version (12) of the Region 1 Vegetation Mapping Program (VMap) for the Lewis and Clark National Forest (Brown and Barber 2012). This program uses a combination of satellite imagery (30m Landsat Thematic Mapper) and airborne acquired imagery (1m National Agriculture Imagery Program), coupled with field sampling to devise algorithms for training the classification, with an accuracy of 70% - 90% for all attributes. The mid-level database (minimum mapping unit of 1 acre) and the 40% dominance rule was used for assigning tree species.

Based upon grizzly bear use of these types for the entire Rocky Mountain Front, I filtered out those types with <2% coverage (data courtesy of R. Mace, Montana FWP, *unpublished data*). Based upon significant selection and overall high use by grizzly bears, I defined and mapped secondary habitat components as the following 5 cover types: (1) herbaceous-grass, (2) shrub, (3) Douglas-fir, (4) Lodgepole Pine, and (5) Englemann spruce-subalpine fir. For the entire RMF, the Lodgepole Pine and Douglas-fir types had the highest use (~28% each), roughly in proportion to their availability. Grass (12%) and shrub (10%) types were used slightly more than available. For scoring conservation value in 1-km² grid cells, I filtered out those cells where the secondary habitat component comprised ≤10% of the cell.

Finally, I created a security-zone map by buffering all open roads within the Badger-Two Medicine by 500 m on each side (Mace et al. 1996, Northrup et al. 2012). Areas ≤ 500 m from such roads were defined as low security, whereas areas ≥ 500 m was deemed high security. With these GIS layers, I mapped and scored each 1-km² grid cell (following Nielsen et al. 2006):

- (1) primary habitats or ‘safe harbours’ (very high-quality habitat and high security) = score of 3
- (2) secondary habitats (high-quality habitat and high security) = score of 2
- (3) ‘attractive sinks’ (very high or high-quality habitats but low security) = score of 1.

Such an approach facilitates identification of conservation areas for grizzly bears (and non-critical areas) and enables managers to target *strategic* sites to improve security by modifying motorized access.

Key Conservation Areas

This simple model (at 1-km² cell scale) accounted for 83% of telemetry locations and observations of grizzly bears in the Badger-Two Medicine during 1976-1987 (Aune and Kasworm 1989) and the large majority of telemetry locations of female grizzly bears during 2001-2012 (visual inspection of map supplied by R. Mace, Montana FWP, *unpublished data*). Moreover, it performed well on the adjacent Flathead National Forest as 89% of 24,200 locations of radio-collared female grizzly bears fell within predicted habitat grid cells (R. Mace, Montana FWP, *unpublished data*).

According to the habitat model, about 71 % (94,549 ac) of the Badger-Two Medicine provides suitable habitat for grizzly bears (Table 3). These habitats are distributed rather consistently across the B2M, with more of the secondary habitats found in the Two Medicine drainage (Figures 5 and 6). Of these lands, about 43% (56,711 ac) scored as *very high* conservation value because they contain primary habitat components in a secure setting (>500 m from open road). Another 28% (37,838 ac) scored as *high* value with secondary habitat components in a secure setting. The smaller home ranges of female grizzly bears in the B2M (average of 72 mi²) indicates that its productivity is higher than elsewhere along the Rocky Mountain Front (Aune and Kasworm 1989). Another 7.5% (9,927 ac) of lands with very high or high habitat value received a *moderate* ranking because they occur within 500 m of an open road and thus have low security. These open roads (some only seasonally) are located along the northwest and northeast edges of the Badger-Two Medicine.

According to analysis by the Lewis and Clark National Forest, only a small proportion (32%) of crucial spring habitat for grizzly bears along the Rocky Mountain Front exists within borders of the National Forest. Much of this spring habitat occurs in the Badger-Two Medicine (22%), primarily in the valley and adjacent hills of South Fork Two Medicine River (USDA Forest Service 2009).

Population surveys have documented moderate to high levels of relative density of grizzly bears in the Badger-Two Medicine (Figure 5 *in* Kendall et al. 2009). Grizzly bears in the B2M have been grouped genetically with bears to the north on the east side of Glacier National Park/northwest Blackfoot Indian Reservation more than with grizzlies further south along the Rocky Mountain Front (Figure 2 *in* Kendall et al. 2009). Importantly, this implies that there is genetic connectivity across Highway 2 between Marias Pass and East Glacier Park. Various telemetry studies have documented more locations of radio-collared grizzly bears in the South Fork Two Medicine drainage, but this may be due partially to sampling bias for bears captured at more accessible sites (Aune and Kasworm 1989, R. Mace, Montana FWP, *unpublished data*). The Crown of the Continent Ecosystem is a major stronghold for grizzly bears in the lower 48 states, and the Badger-Two Medicine is a vital component.

Table 3. Area (ac) and percent of grizzly bear conservation values in the Badger-Two Medicine area, Lewis and Clark National Forest, Montana.

Very High (3)		High (2)		Moderate (1)	
Area	Percent	Area	Percent	Area	Percent
56,711	42.6	37,838	28.4	9,927	7.5

Figure 5. Location of key habitat components for grizzly bears, Badger-Two Medicine area, Montana.

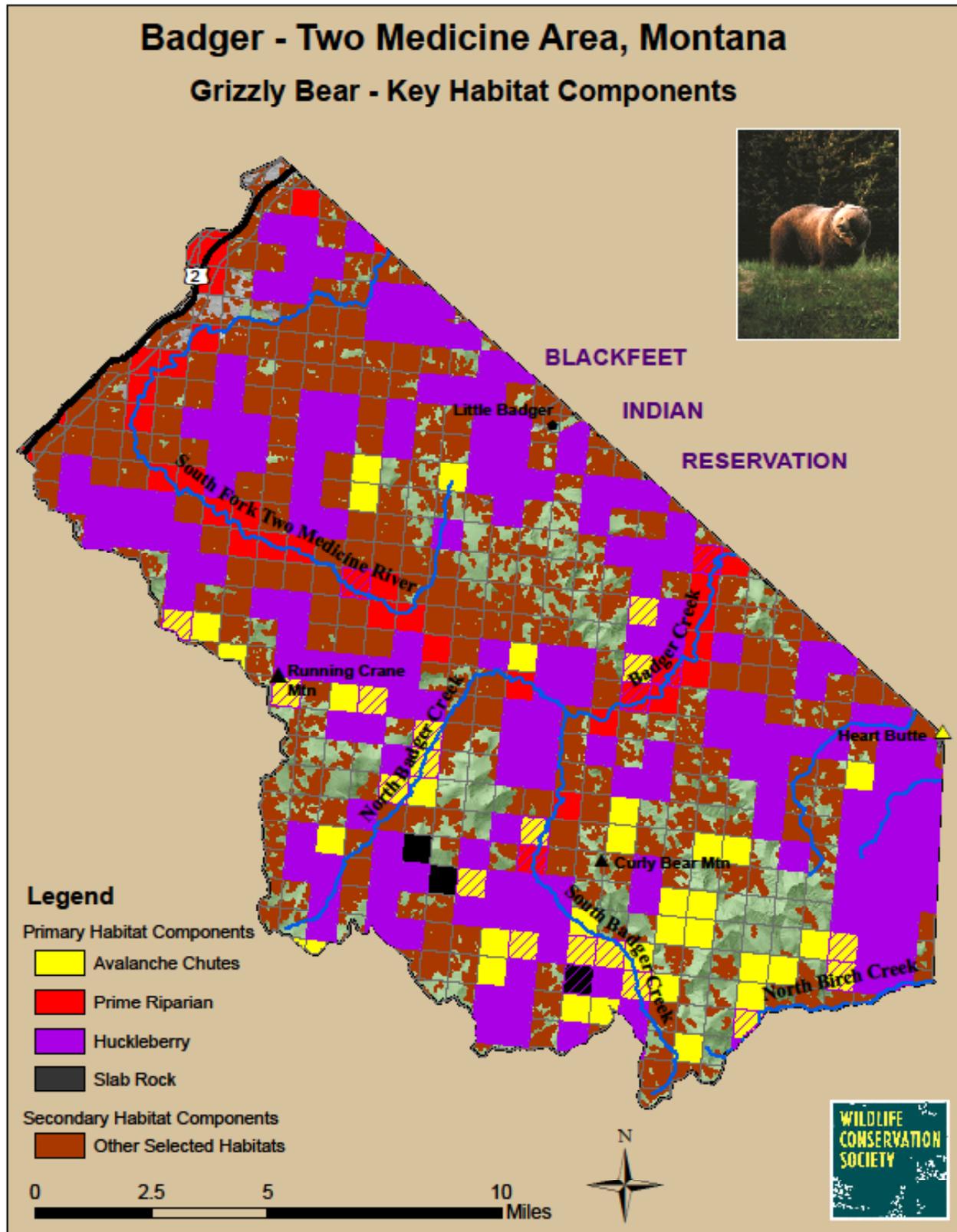
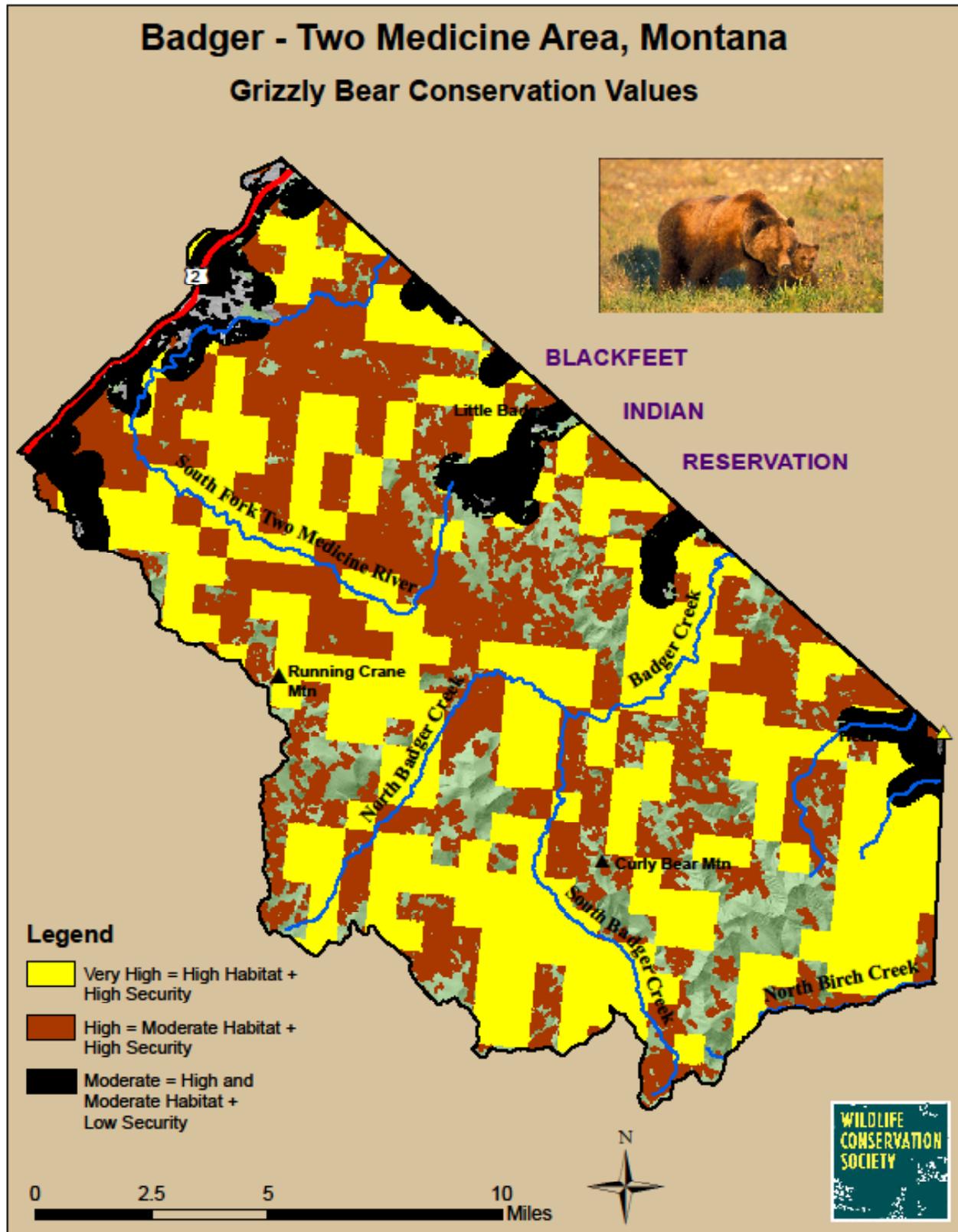


Figure 6. Location of conservation values for grizzly bears, Badger-Two Medicine area, Montana.



Wolverine



Larry Master

Vulnerability Profile

Wolverines exhibit **high vulnerability**. Wolverines are generalist feeders that exhibit broad regional and seasonal flexibility in their diet – including marmots and ground squirrels in summer and ungulate carrion in winter (Copeland and Whitman 2003, Lofroth et al. 2007). In the western U.S., wolverines occur primarily at higher elevations in the subalpine and alpine life zones (Aubry et al. 2007). Wolverines select areas characterized by persistent snow cover during spring for their reproductive habitat and caching food, summer habitat, and dispersal routes (Copeland et al. 2010, Inman et al. 2012a). In such low-productivity environments, though, wolverines range widely in constant search for food and have large home ranges relative to their body size: 100 – 150 mi² for adult females and 300 – 600 mi² for adult males (Hornocker and Hash 1981, Copeland et al. 2007, Chadwick 2010, Inman et al. 2012b). Female wolverines have very low reproductive rates and usually average <1.0 offspring per adult female annually (Persson et al. 2006, Anderson and Aune 2008). Consequently, they cannot sustain high mortality rates; trapping during winter accounts for the majority of known mortality and is additive to other causes of mortality (Hornocker and Hash 1981, Krebs et al. 2004, Squires et al. 2007). Numerous wolverine researchers have recommended refugia – by restricting/eliminating trapping quotas or sanctuaries. Subadult wolverines (predominantly males) are capable of dispersing long distances, upwards of 100-250 mi and even 1 case of >500 mi (Vangen et al. 2001; R. Inman, WCS, *personal communication*). Researchers have found that areas with persistent snow cover during late spring and sparse density of human houses characterize pathways for successful dispersal among sub-populations of wolverines across the northern U.S. Rocky Mountains (Schwartz et al. 2009, Rainey et al. 2012). Wolverines appear sensitive to human disturbance near natal den sites (Magoun and Copeland 1998).

Major highways may impede movements leading to fragmentation, but wolverines did make multiple crossings of a Wyoming highway with < 5,000 vehicles per day where human settlements were > 2.5 mi away (Packila et al. 2007). Due to their multi-faceted adaptation to snow environments, wolverines appear particularly vulnerable to reductions in suitable habitat at lower elevations resulting from projected warming climate and diminished snowpack (McKelvey et al. 2011, Pederson et al. 2013). The wolverine was proposed for federal listing as a ‘threatened’ species under the Endangered Species Act on February 4, 2013 (USFWS 2013) but that was subsequently rescinded.

Methods for Scoring Conservation Importance

I examined 2 verified models that predict suitable habitat for wolverines. The ‘Copeland’ model uses snow cover to predict geographic occurrence of wolverines across its circumboreal range (Copeland et al. 2010). These investigators developed a composite of MODIS satellite images (7 years from 2000-2006) that represented persistent snow cover throughout April 24 – May 15, which encompasses the end of the wolverine’s reproductive denning period. Approximately 89% of summer and 81% of winter telemetry locations from 8 study areas in western North America concurred with spring snow coverage. Moreover, about 90% of 62 known wolverine den sites in North America occurred within spring snow cover for 5-7 years (J. Copeland, *unpublished data*). Pathways of dispersal by wolverines also appear limited largely to areas of spring snow cover (Schwartz et al. 2009). Thus, many central features of wolverine ecology – historical occurrence, habitat use across gender/age/seasons, den sites and dispersals – correspond to this bioclimatic envelope of spring snow cover. In western North America, the extent of persistent spring snow cover includes the upper Subalpine and Alpine life zones below and above timberline (Holdridge 1967), which accounted for 95% of 59 mappable historic records of wolverines in the Rocky Mountains (Aubry et al. 2006). I mapped (1) primary habitat for wolverine using snow classes 1-7, (2) future primary habitat with snow classes 2-7, and (3) maternal habitat with snow classes 5-7.

The ‘Inman’ model delineates suitable habitat for resident adult wolverines, reproductive females, and dispersers across the western United States (Inman 2013). This model addresses 6 key components of wolverine ecology: food, competition, escape cover for young wolverines, birth sites, dispersal, and human disturbance. To delineate primary habitat used by resident adults, the researchers used logistic regression to compare habitat characteristics associated with 2,257 telemetry locations collected from 12 female and 6 male wolverines with those of random locations in the Greater Yellowstone Ecosystem. They also analyzed habitat characteristics for 31 natal den and rendezvous sites to identify maternal habitat. Their best model included 2 snow variables (April 1 snow depth, distance to snow on April 1), 3 topographic variables (latitude-adjusted elevation, terrain ruggedness index, distance to high-elevation talus), 1 vegetation variable (distance to treecover), and 2 human variables (human population density, road density). This model performed well against 4 independent data sets and historical records of wolverine (Inman 2013).

I tested the performance of each wolverine model with data from the pioneering field study of wolverines conducted during the late 1970s in the South Fork of the Flathead River in western Montana (Hornocker and Hash 1981). About 74% and 78% of 199 locations of adult wolverines during all seasons fell within the areas predicted by the Copeland and Inman models, respectively (J. Weaver, Wildlife Conservation Society, *unpublished data*). Both models missed many of the same locations, which were at slightly lower elevation during winter than predicted by the model. The Copeland model provided slightly more conservative maps of primary habitat, whereas the Inman model provided slightly more conservative maps of maternal habitat.

I identified key conservation areas for wolverines by combining or overlaying the 2 models and mapping the maximum extent of suitable habitat. I chose to map the maximum extent of habitat for 2 reasons: (1) direction and strength of the differences between models varied in complex patterns across the Crown of the Continent Ecosystem, and (2) a conservative approach in accounting for all areas deemed suitable habitat seemed warranted due to proposed federal listing of wolverines as a ‘threatened’.

Because wolverine appear to be an obligate to areas covered by snow during spring (Copeland et al. 2010, Inman et al. 2012), climate change projections of lesser snowpack will negatively affect wolverine habitat. Using an ensemble of climate-change models, McKelvey et al. (2011) estimated a 23% loss of wolverine habitat in Montana. Because snow cover may be lost disproportionately at lower elevations of wolverine habitat, I approximated this loss by subtracting snow class 2 from the Copeland model, which appeared visually to best approximate the loss of snow cover in western Montana. For the Inman model, I assumed a warming scenario of 2.0⁰ C (3.5⁰ F) for western Montana by the year 2050 (per McWethy et al. 2010). Using a mid-point for moist and dry adiabatic lapse rates of 3.5⁰ F/ 1000 ft elevation yielded an upslope shift of 1000 feet for lower bound of suitable habitat.

Accordingly, I assigned the following importance scores for wolverine:

- (3) Very High = Maternal Habitat
- (2) High = Current Primary Habitat
- (2) High = Future Primary Habitat

Key Conservation Areas

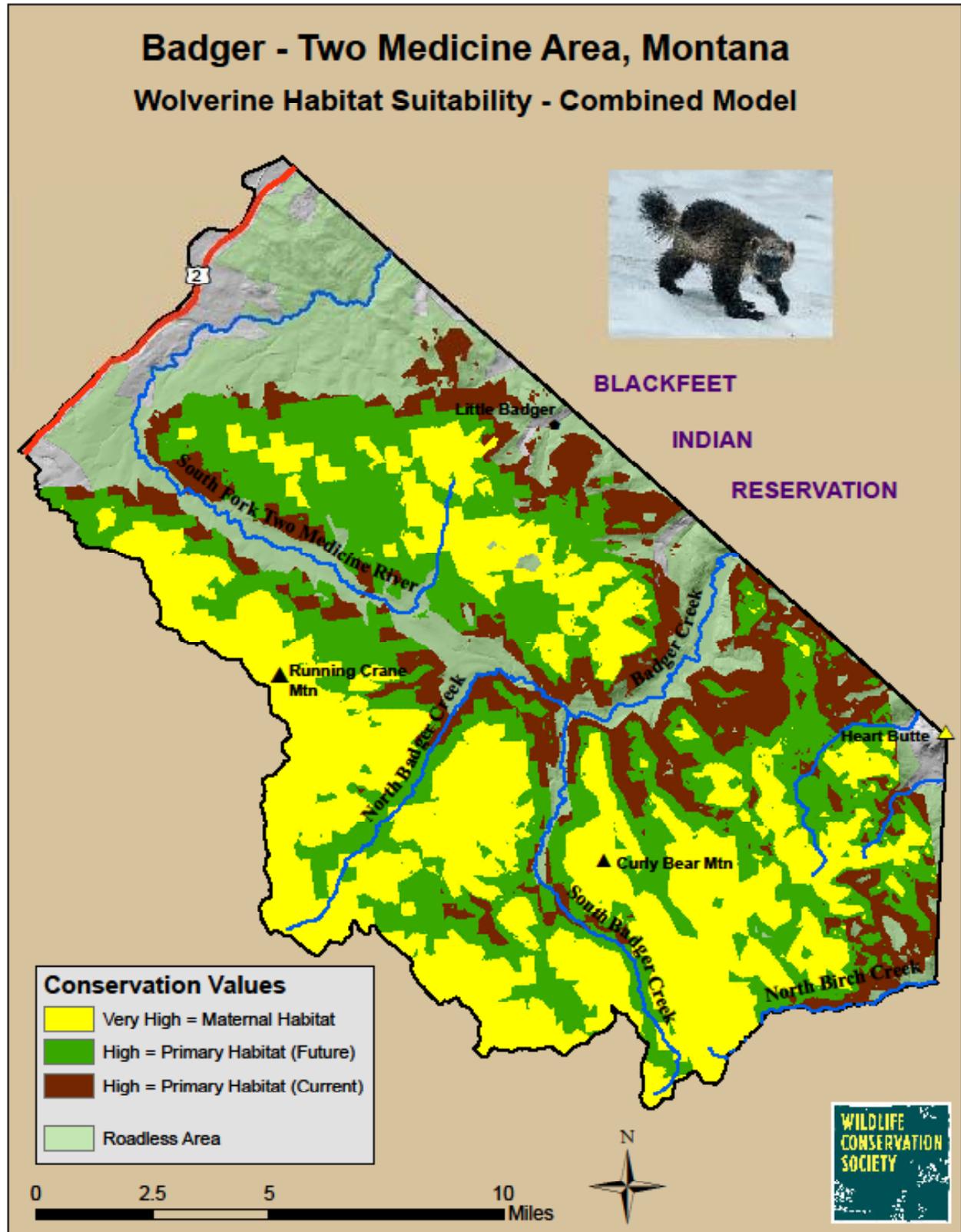
According to the combined model, about 87 % (115,449 ac) of the Badger-Two Medicine provides suitable primary habitat for wolverines (Table 4, Figure 7). About 33 % (44,026 ac) of the current primary habitat serves as maternal habitat. The modeling of climate effects on snowpack at the year 2050 suggest upwards of 24 % loss of primary habitat (at the lower elevations) but little loss of maternal habitat.

Table 4. Area (ac) and percent of wolverine habitat in the Badger-Two Medicine area, Lewis and Clark National Forest, Montana.

Maternal Habitat (3)		Future Primary Habitat (2)		Current Primary Habitat (2)	
Area	Percent	Area	Percent	Area	Percent
44,026	33.1	83,680	62.9	115,449	86.7

Primary habitat for wolverine occurs throughout the Badger-Two Medicine, except for lower elevations along Badger Creek and the South Fork Two Medicine and Lubec Ridge (Figure 7). By 2050, shrinkage of primary habitat is predicted to occur up the lower mountain slopes in the lower valleys and along the eastern foothills. Maternal habitat for wolverines is extensive and well-connected in the upper basins and ridges of the Badger and Two Medicine watersheds near the Continental Divide. Maternal habitat also occurs in the higher country running from Half Dome Crag north to Mount Baldy. The Crown of the Continent represents a major stronghold for wolverine in the lower 48 states, and the core habitat in the Badger-Two Medicine and its close proximity to Glacier National Park provides added conservation value for wolverine.

Figure 7. Location of key habitats and conservation values for wolverines, Badger-Two Medicine area, Montana. Maternal habitat and future primary habitat are subsets of the current primary habitat (= total).



Mountain Goat

John Weaver



Vulnerability Profile

Mountain goats exhibit **high vulnerability**. Although mountain goats have broad flexibility in their diet (Côté and Festa-Bianchet 2003), they are constrained to live on or very near cliffs that provide escape terrain from predators and more accessible forage in winter (Chadwick 1983, Hamel and Côté 2007). Mountain goats may travel considerable distance (up to 15 mi) even through forests to obtain supplemental minerals in the spring-early summer (Singer 1975, Poole et al. 2010, Jokinen et al. 2013). Female goats have very low reproduction, and longevity of female goats is paramount to their lifetime reproductive success (Festa-Bianchet and Côté 2008). Mountain goats cannot quickly compensate for excessive mortality, and the history of goat populations harvested by hunters is strewn with case studies of excessive kill rates – particularly of adult females who can be difficult to distinguish from males (Côté et al. 2001, Hamel et al. 2006). Goats, particularly males, do disperse modest distances (25-50 mi) which may provide connectivity among some populations (Stevens 1983). Mountain goats are sensitive to motorized disturbance (especially helicopters within 1 mile and ATVs) (Côté 1996, Goldstein et al. 2005, Côté et al. 2013, St-Louis et al. 2013) and are vulnerable to over-harvest when roads facilitate easier access by hunters (Chadwick 1981). In terms of climate-smart conservation strategies, maintaining secure access to a variety of aspects among cliffs and reducing other pressures could provide options. Mountain goats are managed as a ‘big game’ species in Montana. Goats are an important animal spirit in the Blackfeet pantheon and are not hunted by tribal members because of taboos (Zedeño and Murray 2012).

Methods for Scoring Conservation Importance

For distribution of mountain goat summer ranges, I developed a step-wise model. First, we calculated terrain ruggedness following a method developed by Poole et al. (2009) to define escape terrain for mountain goats. We used the curvature function in ArcGIS to generate a curvature grid (at 30m resolution) and then did a moving window analysis for standard deviation within a 90m radius of each grid cell. This provided a measure of the variability of the rate of change in slope for each grid cell. Thus, a high ruggedness value would indicate a high degree of change in slope and cliff complexity, which have been a diagnostic feature of other models of suitable habitat for mountain goats (Gross et al. 2002). Escape terrain was defined as pixels with a ruggedness value ≥ 1.854 (the top 3 of 5 classes when displaying the grid using natural breaks). Next, we constrained the model to escape terrain between elevation contours of 1900 m and 2500 m. Finally, we buffered those areas by 300 m as a conservative estimate of foraging distance away from escape terrain (Chadwick 1983, Hamel and Côté 2007). For distribution of mountain goat winter ranges (November-March), we used the same step-wise model but made two adjustments. We limited winter range to south-southwest aspects ($157^\circ - 247^\circ$) and lowered elevation by 200m to the 1700 m contour (Chadwick 1983, Poole et al. 2009).

This model performed well throughout the Crown of the Continent Ecosystem. For the Badger-Two Medicine area and south to the Teton River, I mapped 369 locations (1234 goats) recorded during 15 years of aerial surveys (1990-2008) (kindly provided by G. Olson, Montana FWP, *unpublished data*). Nearly all of these locations occurred within predicted habitat. On the Flathead National Forest in Montana, about 84% of 813 summer-fall locations during 1980-2009 fell within 90 m of predicted habitat (records kindly provided by J. Vore and E. Wenum, Montana FWP, *unpublished data*). Nearly all the areas mapped as occupied goat range there in the late 1940's (Casebeer et al. 1950) were characterized by extensive patches of suitable summer and winter habitat in our model. In southwest Alberta, 95% of 508 summer locations fell within predicted summer habitat and another 3% within 90 m (data courtesy of M. Jokinen, Alberta Conservation Association, in Weaver 2013b). Accordingly, I assigned the following importance scores for mountain goats:

- Very High (3) = suitable winter habitat
- High (2) = suitable summer habitat

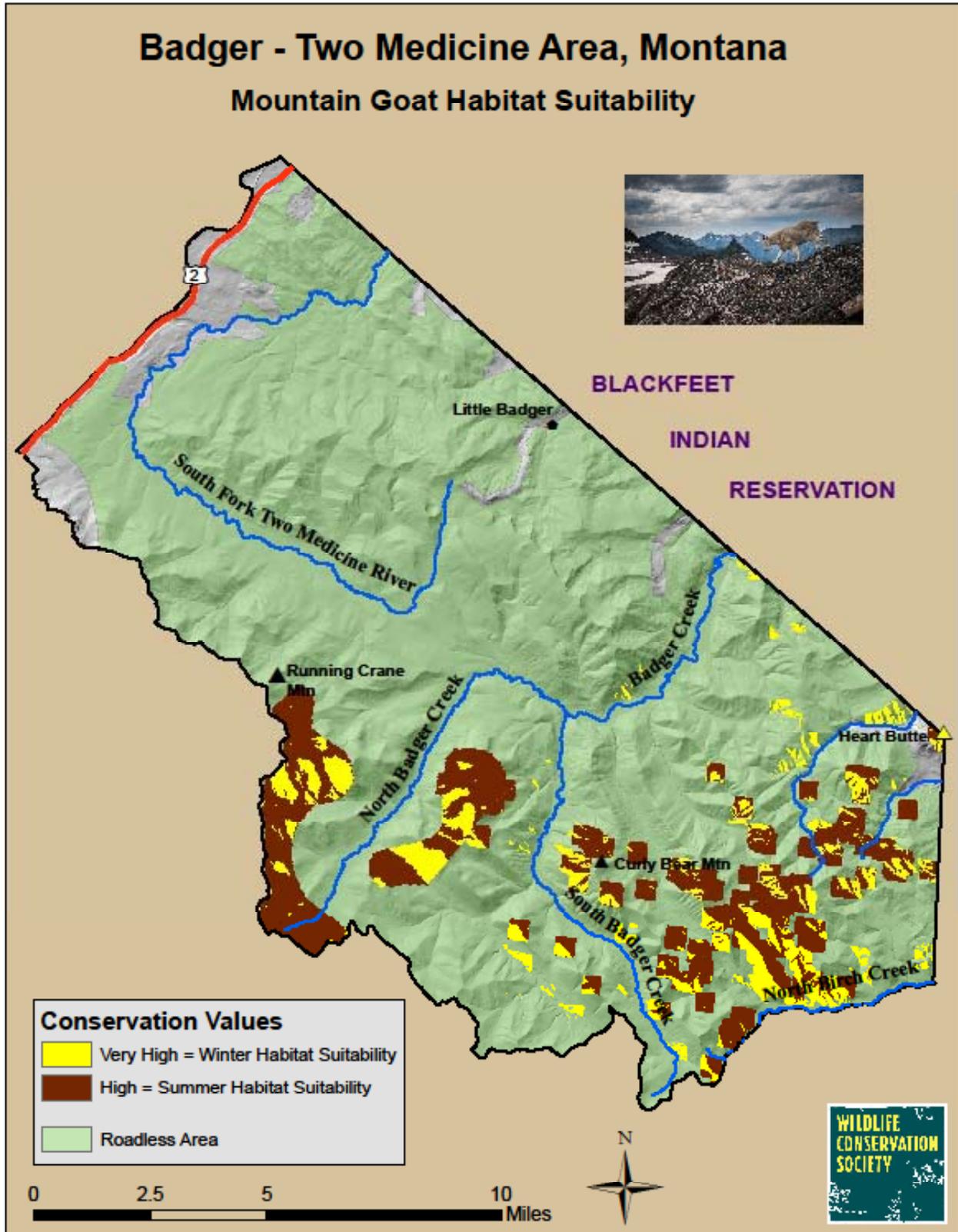
Key Conservation Areas

Based upon the model of mountain goat habitat, about 5,556 acres (4.2 %) of winter habitat and 16,773 acres (12.6 %) of summer habitat occur on the Badger-Two Medicine area (Table 5). Mountain goats occur mostly in the cliff habitat of the high peaks in the Badger Creek watershed (Figure 8). Key sites include Curly Bear, Spotted Eagle, and Scarface Mountains, Mount Poia, Family Peak, Goat Mountain and Bruin Peaks, and along the Continental Divide between Bullshoe Mountain and Big Lodge Mountain. Most of these are traditional maternal sites that have been used for 50 years (if not longer) and are connected to other goat habitat/groups further south in the Bob Marshall Wilderness (Weaver 2011).

Table 5. Area (ac) and percent of mountain goat habitat in the Badger-Two Medicine area, Lewis and Clark National Forest, Montana.

Winter Habitat (3)		Summer Habitat (2)	
Area	Percent	Area	Percent
5,556	4.2	16,773	12.6

Figure 8. Location of key seasonal habitats and conservation values for mountain goats, Badger-Two Medicine area, Montana.



Rocky Mountain Elk



Vulnerability Profile

Elk exhibit **low to moderate vulnerability** due to several attributes. Elk generally graze on grasses and sedges but may browse on woody shrubs (especially during winter) and exhibit broad flexibility in their diet selection (Christianson and Creel 2007, Cook et al. 2013). Summer nutrition affects the level of body fat in autumn for adult female elk, which – in turn – influences body condition through winter and spring (Cook et al. 2003, Cook et al. 2013). Elk are habitat generalists as well and inhabit many types of habitat across their range. In western North America, elk often migrate to higher elevation basins and ridges for the summer. In late fall, they usually move back down to traditional winter ranges in lower elevation foothills and valleys to access grasses in sites with shallow or no snow (Houston 1982, Irwin 2002).

Female elk have a moderately high reproductive rate, with an average of 20% of yearlings and 93% of prime-age adults becoming pregnant, a single calf born yearly to pregnant females, and breeding until 15 years old. Survivorship of calf elk averages 35% and 87% for adult females. The greater variability in survivorship of calves accounts for 75% of variation in growth rates of elk populations in western North America (Raithel et al. 2007). Mortality of elk calves is affected by predation by bears, harsh winters and cold spring conditions (Griffen et al. 2011); whereas mortality for adult female elk is governed primarily by the level of hunter harvest (Brodie et al. 2013). Winter severity and predation by wolves and other carnivores can be locally significant but reduced survivorship by < 2% across areas. Reducing hunter harvest of adult female elk is a prudent strategy for offsetting impacts of carnivore recolonization and shifting weather patterns on elk across western North America (Brodie et al. 2013).

During hunting (rifle) season, elk exhibit a strong behavioral avoidance of human-caused mortality risk by shifting to areas of low road density on public lands and to private lands where hunting may be prohibited (Proffitt et al. 2013). ‘Security areas’ have been defined as: (1) areas >0.5 mi from the nearest road or trail opened to motorized travel during the hunting season (or corresponding road *density*), and (2) minimum of 0.4 mi² (1 km²) of continuous forest (‘Hillis paradigm’: Hillis et al. 1991). Both adult female and bull elk select for areas of low road density, whereas bulls appear to select additionally for the forested component (Proffitt et al. 2013).

In terms of climate change, winters are projected to be warmer with less snowpack at low-mid elevations; summers will be hotter with slight but variable trends in precipitation (see end of chapter 2). Elk populations could increase under these favorable conditions, and elk could stay at high elevations over winter and browse woody plants or grasses on windswept ridges (Wang et al. 2002). This could result in cascade of ecological effects ranging from decline in nesting birds in deciduous trees due to elk browsing (Martin and Maron 2012) to greater grazing competition with bighorn sheep.

Methods for Scoring Conservation Importance

I assigned a conservation score of very high (= 3) to winter ranges for elk and high (= 2) for summer ranges. I mapped these seasonal ranges for the Badger-Two Medicine and adjacent areas of the Blackfeet Indian Reservation based upon information and professional experience provided by Gary Olson, who studied elk in this area for many years (G. Olson, Montana FWP biologist, *personal communication*).

Key Conservation Areas

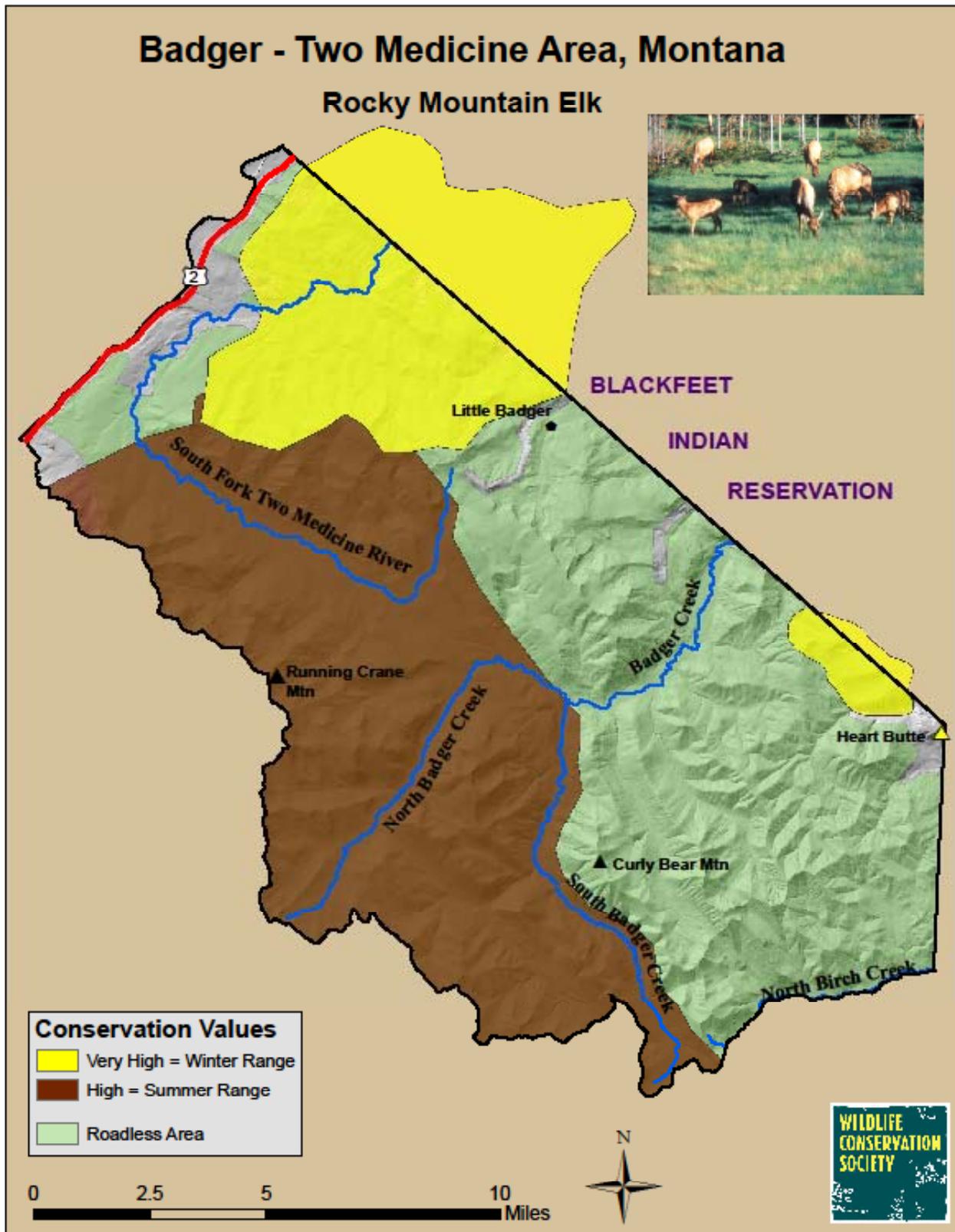
Approximately 300 elk use the area around Lubec Ridge-Mettler Coulee-Hyde Creek and over to Two Medicine Ridge in the Badger-Two Medicine for winter range and also for calving in the spring (G. Olson and R. Rauscher, Montana FWP, *personal communication*). This winter range extends eastward on the Blackfeet Indian Reservation out to the South Fork Two Medicine River (Dan Carney, Blackfeet Tribe, *personal communication*). Mowitch Basin also provides winter range for elk. Altogether, winter range comprises about 8.1 % (~10,805 ac) of the Badger-Two Medicine (Table 6).

In summer, elk inhabit the roadless Two Medicine Ridge and upper basins and ridges of the South Fork Two Medicine River and both forks of Badger Creek (~54,248 acres or 40.8 %). Some of the ~800 elk that winter on the Blackleaf WMA and/or the Theodore Roosevelt Memorial Ranch also migrate south of Swift Reservoir up the North Fork Birch Creek and into the upper Badger Creek drainage for summer range (Olson et al. 1994). During fall, elk may be located in transition areas between these summer and winter ranges, depending upon variation in snowfall.

Table 6. Area (ac) and percent of seasonal habitats for Rocky Mountain elk in the Badger-Two Medicine area, Lewis and Clark National Forest, Montana.

Winter Habitat (3)		Summer Habitat (2)	
Area	Percent	Area	Percent
10,805	8.1	54,248	40.8

Figure 9. Approximate location of elk winter ranges and summer ranges across the Badger-Two Medicine area, Montana. Ranges mapped based upon information provided by Gary Olson, retired Montana FWP biologist, and Dan Carney, Blackfeet Tribe, *personal communication*.



Bison or Buffalo



Vulnerability Profile

Bison once roamed the North American plains, prairies and foothills in numbers hardly imaginable – upwards of 30 million animals (McHugh 1972). Wild and free-ranging bison were devastated through excessive hunting down to near-extinction by the late 1800s, with a remnant herd of 23 animals surviving in remote valleys of Yellowstone National Park (Plumb and Sucec 2006). Conservation scientists consider the American bison ecologically extinct because fewer than 4 % of nearly 500,000 bison today are *wild* conservation herds on federal or tribal lands – all the other bison in North America are privately owned and managed for commercial production (Freese et al. 2007). Many people have called for urgent measures to conserve the remaining wild and free-ranging bison and to restore the species as a keystone member of selected ecosystems across its historic range (Sanderson et al. 2008).

Wild bison exhibit **moderate** vulnerability - primarily in terms of limited space in modern landscapes and intolerance by the livestock industry (Plumb et al. 2014). Bison are grazers during all seasons and feed primarily on grasses and sedges in open grassland and meadow communities (Meagher 1986, Gogan et al. 2010). Warm season grasses predominate in the diets of bison on shortgrass prairie, while cool season grasses and sedges predominate on mixed prairie and mountain meadows (Peden et al. 1974, Meagher 1986). Bison in Yellowstone National Park spend summer at high elevations in the mountains and move to lower elevations along river corridors and in valleys during winter (Meagher 1973, Bruggeman et al. 2009). In terms of diet, bison overlap considerably with elk – particularly on fine-leaved grasses (Singer and Norland 1994). Abundance of elk may influence the ecological carrying capacity and winter movements of bison (Coughenour 2005). Female bison have rather low reproductive rates,

with first parturition at 3 years of age, a single calf every 1 to 3 years, and breeding until 16 years old (Gogan et al. 2010). Survival rates, though, can be >95% for both sexes in populations well below carrying capacity. Droughts and wildfire followed by severe winters have resulted in episodes of over-winter mortality, particularly when bison occur in high density (Wallace et al. 2004, Geremia et al. 2009). Historically, bison were a nomadic, wide-ranging species as an adaptation to the spatial and temporal variability of the Great Plains ecosystems (Hanson 1984). Bison may expand their range when populations increase, as mature bulls explore new areas and return with herd members later (Gates et al. 2005, Plumb et al. 2009). Bison herds may need more room to roam in response to variability in future climatic patterns. Recent advances in genetic techniques have determined that introgression of cattle genes is pervasive among most conservation, tribal, and commercial herds (Halbert and Derr 2007). Using source stock of genetically-pure bison will be an important consideration in restoration efforts (Hedrick 2009).

Many North American Indian tribes have strong cultural, spiritual, and symbolic relationships with bison (Geist 1996, Little Bear et al. 2014). The InterTribal Buffalo Council (ITBC) was formed in 1990 with the mission to restore bison to Indian Nations in a manner that is compatible with their spiritual and cultural beliefs and practices (ITBC website: www.intertribalbison.org) (Zontek 2007). Currently there are about 57 member tribes in 19 states that collectively manage more than 15,000 bison. The Blackfoot Confederacy is planning on restoring more bison to ancestral lands in Montana and Alberta as part of the Iinnii Initiative in concert with the recent ‘Buffalo treaty’ (H. Barnes, Chairperson of Blackfeet Business Council, *personal communication*, see Iinnii Initiative: The Return of the Buffalo on WCS website at <http://www.wcs.org/news-and-features-main/iinnii-initiative.aspx>). The Badger-Two Medicine area could be important in that effort.

Methods for Scoring Conservation Importance

Bison forage on grasslands that have low to moderate slope (Meagher 1986, Bruggeman et al. 2009). To map suitable habitat for bison, I developed a model using grassland community types and slope. I used the latest map of land cover types in Montana produced by the Montana Natural Heritage Program (www.mtnhp.org). Four grassland types were identified and mapped: (1) Rocky Mountain lower montane, foothill and valley grassland, (2) Rocky Mountain subalpine-upper montane grassland, (3) Rocky Mountain subalpine – montane mesic meadow, and (4) recently burned grassland. Based upon studies in Yellowstone National Park (Bruggeman et al. 2009), I assigned a very high rating (3) of suitability for grasslands on slopes <20% and a high rating (2) for grasslands on slopes 21-30%.

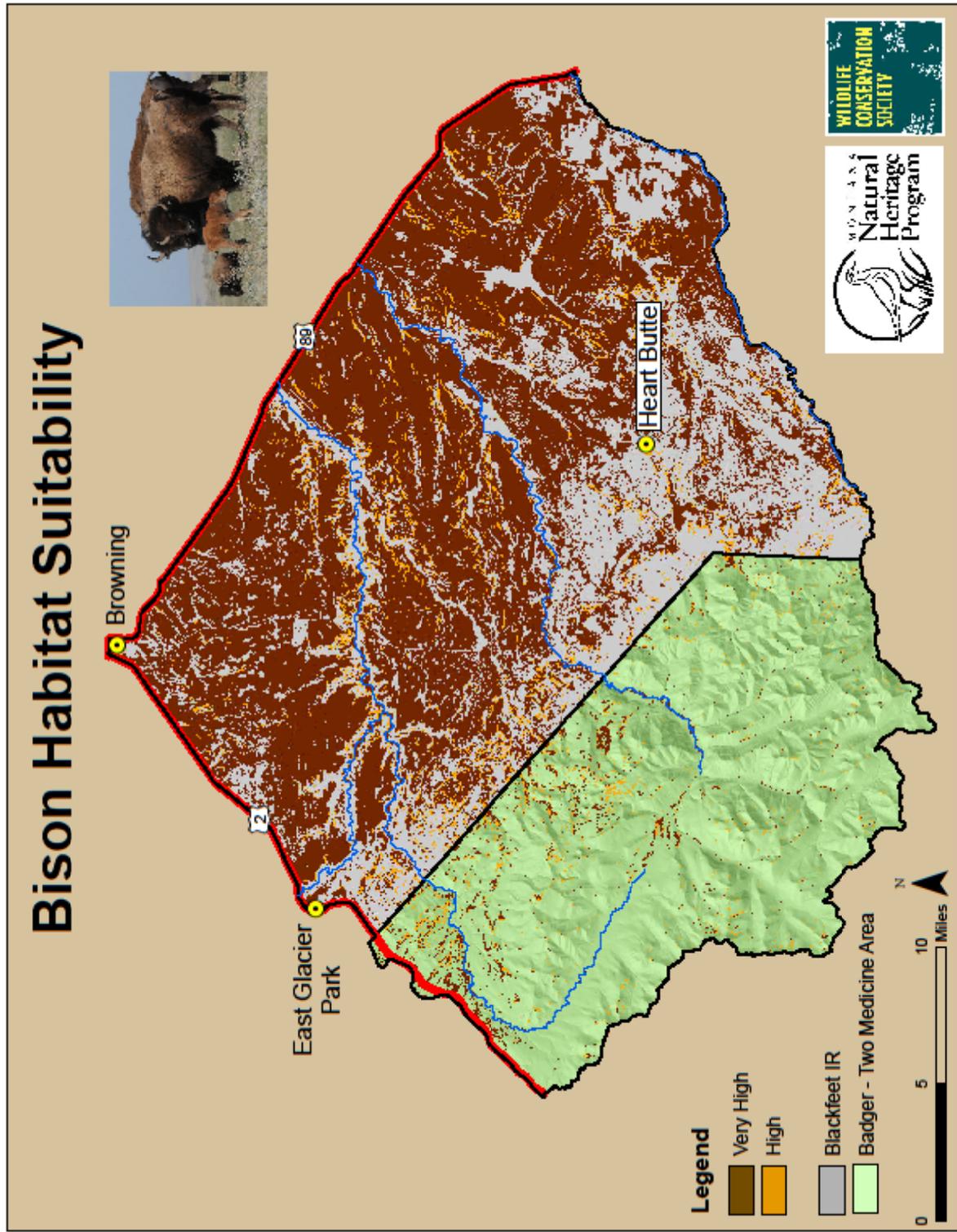
Key Conservation Areas

Bison do not occur in the Badger-Two Medicine at present, but the area provides about 4,660 acres of *very high* habitat suitability and another 2,900 acres of *high* suitability (Table 7). These suitable habitats are distributed in rather small patches across the B2M, with concentrations of very high suitability in lower South Fork Two Medicine River and Lubec Ridge, upper Badger Creek, lower Deep Creek, North Badger and Sawmill Creeks, and south of Heart Butte (Figure 10). More impressively, these habitat patches in the B2M are bordered by a large expanse (~180,000 ac) of very high quality habitat on the Blackfoot Indian Reservation between Highway 2 and Birch Creek (Figure 10). Historical accounts suggest that some bison in the northwest portion of the Great Plains moved seasonally between the open prairie in the spring and summer months and the foothills and mountains in the fall and winter (Moodie and Ray 1976, Boyd and Gates 2003). The tree cover and topography of these foothill habitats afforded some amelioration of the brutal winter conditions prevailing at times over the plains. The rough-fescue grasslands in the foothills also provide nutritional forage from fall to spring (Baumeister 1998). Should bison be restored to this area on the Reservation, it's likely that they would use the suitable habitats in the Badger-Two Medicine in summer and perhaps in winter as well.

Table 7. Area (ac) and percent of bison habitat in the Badger-Two Medicine area, Lewis and Clark National Forest, Montana.

Very High Habitat Suitability (3)		High Habitat Suitability (2)	
Area	Percent	Area	Percent
4,660	3.5	2,904	2.2

Figure 10. Distribution of bison habitats in the Badger-Two Medicine area and adjacent lands on the Blackfeet Indian Reservation, Montana. Grassland cover types on slopes <20% comprise very-high suitability, whereas those on slopes 21-30% provide high suitability.



Synthesis of Conservation Values

To consider the importance of the Badger-Two Medicine Area for these species in another way, I summarized and mapped conservation values with 2 measures: (1) *species importance values*, and (2) *composite scores*. Both measures were tallied using a grid of 1-km² (0.39-mi²) cells draped across the Badger-Two Medicine area (532 cells, 611 counting slivers).

Each of these vulnerable species receives special management attention (federally listed as a ‘threatened species’ or as a ‘sensitive species’/ ‘species of concern’ on state or National Forest list). So, I mapped *species importance values* (SIV) whereby a grid cell with a score of 3 (very high) or 2 (high) for any single species was highlighted. Although a SIV of 2 may represent a lower value, the areas are still an essential component of the species’ ecology and range (e.g., summer habitat for mountain goats).

Other sites may be important for several of the species. To derive a *composite* score, I simply summed up the values across all 6 species for each cell. Although the maximum tally for a cell could have been 18 (highest score of 3 x 6 species), the maximum realized score was 14. I distinguished the top 50% of scores (8-14) as **high**, the next 25% lower scores (4-7) as **moderate**, and the lowest 25% scores (1-3) as **low**. Given the small size of cell, it would be surprising if, for example, westslope cutthroat trout and mountain goats occurred in the same cell.

The Badger-Two Medicine is rich in conservation value for several vulnerable fish and wildlife species that are rare in so many other places. Remarkably, 100 % of the B2M has a *very high* (83 %) or *high* (17 %) value for at least 1 of the 5 focal species (Table 8, Figure 11). About 98 % of the Badger-Two Medicine has high (50 %) or moderate (48 %) composite scores for this suite of vulnerable species (Table 8, Figure 12). High composite scores are clustered in the Two Medicine Ridge-Lubec Ridge area and the headwaters of the South Fork Two Medicine River and the North and South Forks of Badger Creek.

The roadless lands of the Badger-Two Medicine offer a unique opportunity to complete the legacy of wildlife and wildland conservation on this strategic landscape of the Crown of the Continent Ecosystem.

Table 8. Number of grid cells and percent of species importance values (SIV) and composite values (CV), Badger-Two Medicine area, Lewis and Clark National Forest, Montana. Total grid cells = 611.

SIV = 3		SIV = 2		High CV 8-14		Moderate CV 4-7		Low CV 1-3	
Grid Cells	%	Grid Cells	%	Grid Cells	%	Grid Cells	%	Grid Cells	%
508	83.1	103	16.9	304	49.6	296	48.4	11	2.0

Figure 11. Distribution of importance values for any of 5 focal species, Badger-Two Medicine area, Montana.

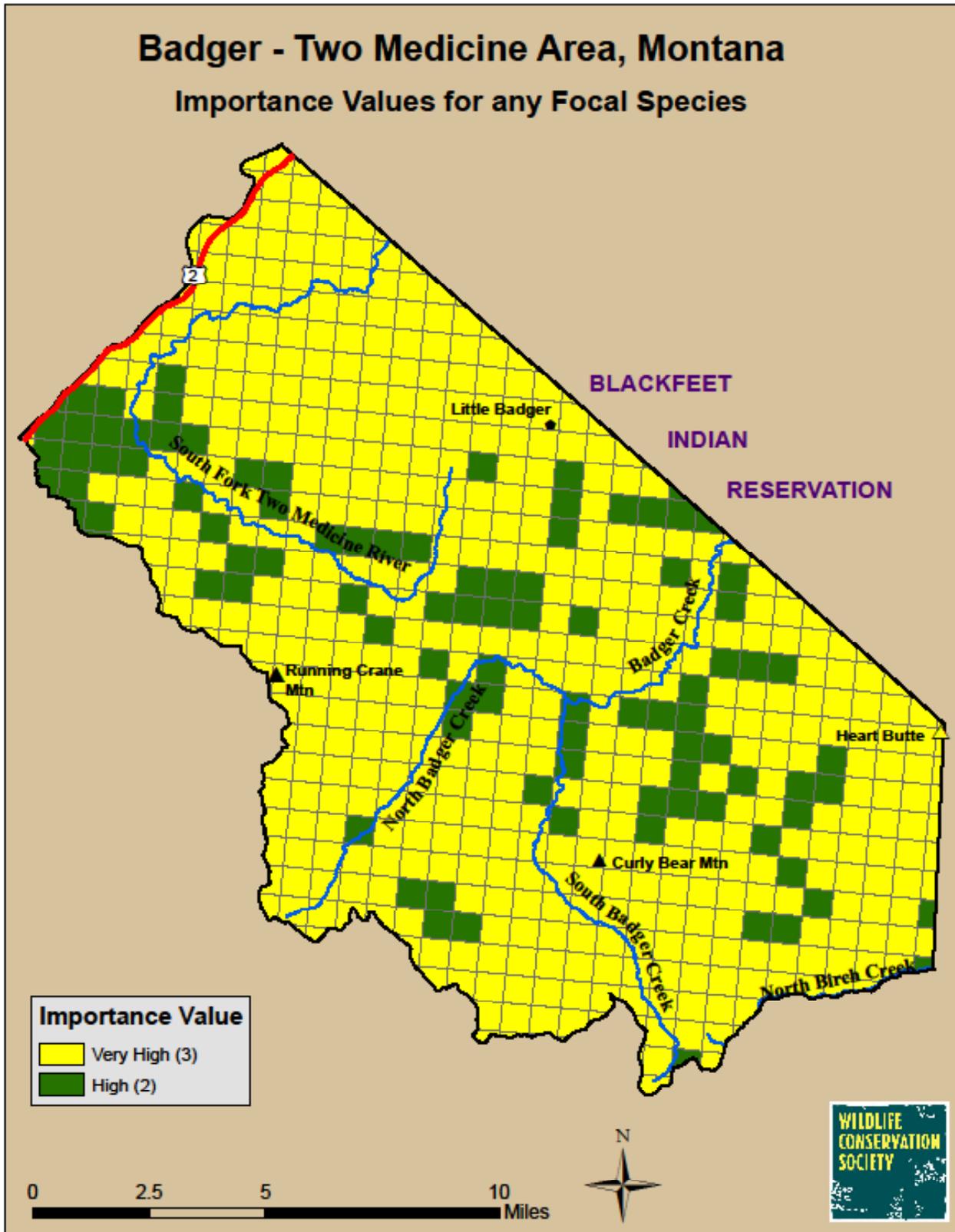
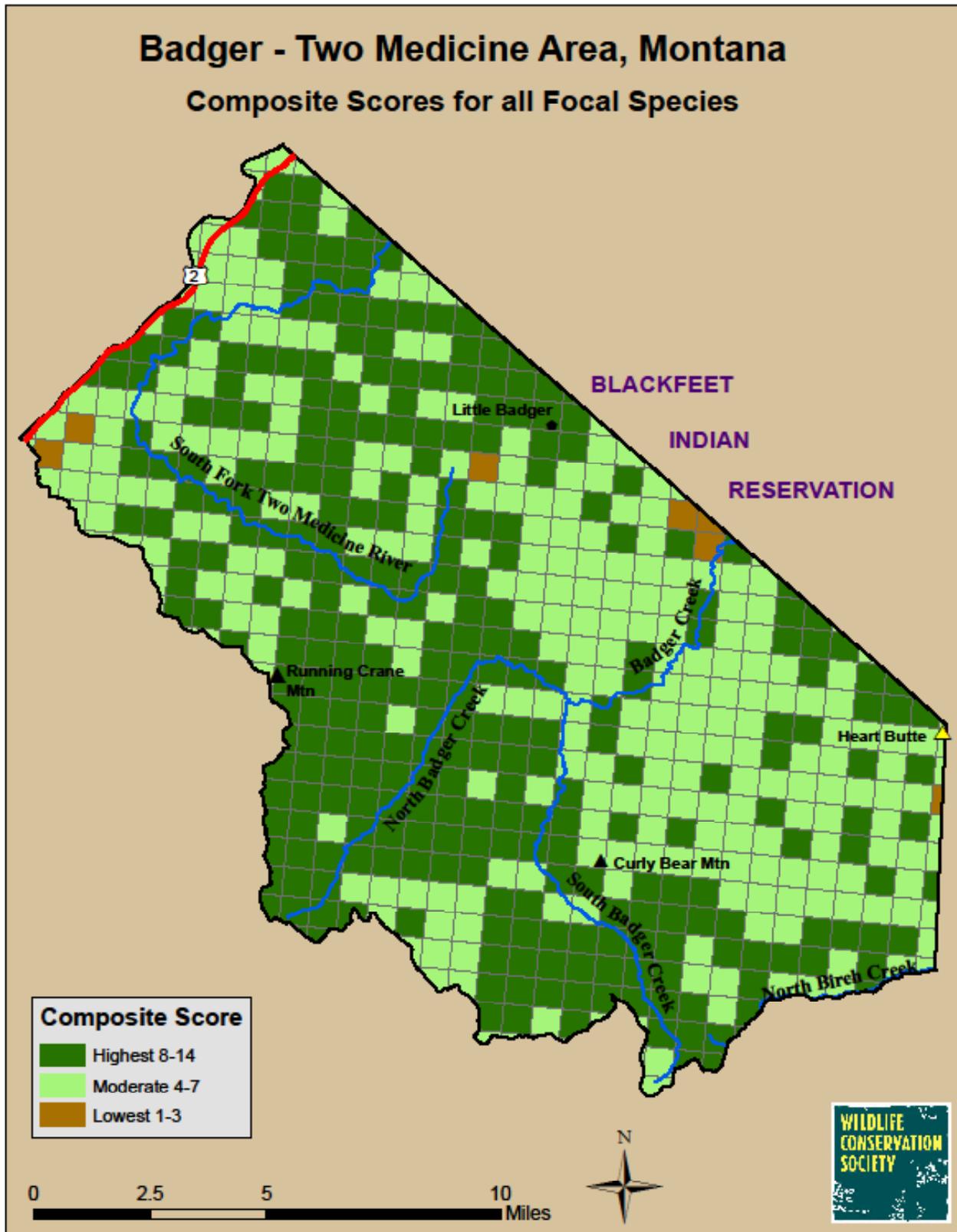


Figure 12. Distribution of composite scores for all focal species, Badger-Two Medicine area, Montana.



Connectivity across Highway 2 for Grizzly Bears and Wolverines

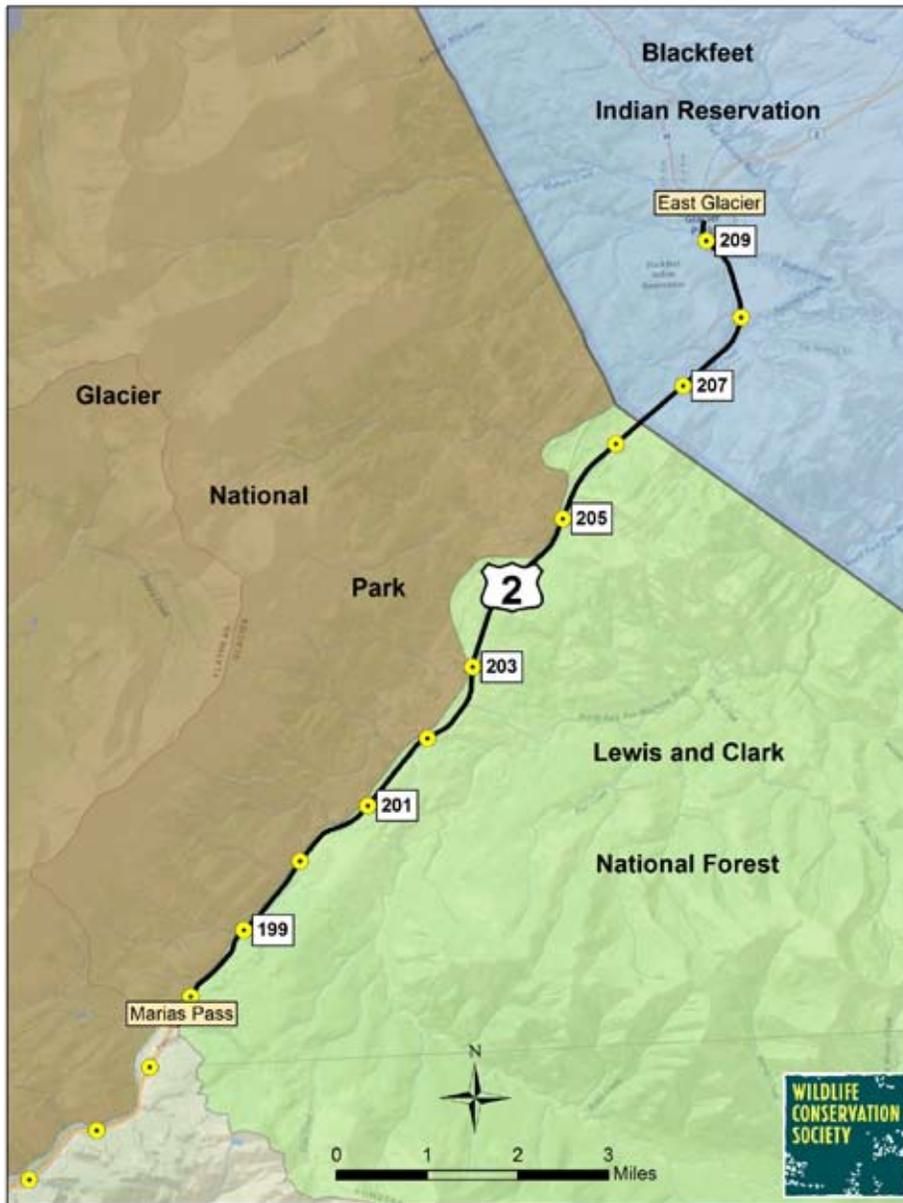
It appears that the most important mechanism by which species coped with previous large-scale climate changes was to move and colonize newly suitable habitat (Huntley 2005). Such shifts have already been documented in numerous species in response to contemporary changes in climate (Parmesan 2006). However, habitat fragmentation and human developments can interfere with the ability of species to track shifting climatic conditions. Consequently, many scientists advocate the need for conservation corridors or linkages between habitats (existing and future) to support necessary movements (Chetkiewicz et al. 2006, Rudnick et al. 2012). A complementary strategy is to increase the size and number of protected, ecologically-diverse areas connected by such linkages (Hodgson et al. 2009). The book Safe Passages: Highways, Wildlife, and Habitat Connectivity (Beckman et al. 2010) provides an overview of current projects, practices, and partnerships across the country.

U.S. Highway 2 (and associated railroad) is a major east↔west transportation route across the Rocky Mountains along the south boundary of Glacier National Park. The section between Marias Pass/ Continental Divide and small town of East Glacier runs about 11 miles and forms the north side of the Badger-Two Medicine (Figure 13). The highway and railroad is a narrow transportation corridor set in a forested, mountainous wildland. According to the Montana Department of Transportation (MDT), the annual average daily traffic (AADT) at 6 monitoring points along this section in 2012 was 1800 vehicles (range 1420-2130) (<http://www.mdt.mt.gov>). This traffic volume is down slightly from the 1968 vehicles AADT recorded 1999-2001 by Waller (2005).

We modeled connectivity across Highway 2 using both least-cost distance (LCD) models and newer methods using circuit theory (CT) (McRae et al. 2008). Both approaches require delineation of suitable source and destination patches on either side of the highway, plus a resistance map quantifying the relative travel cost of movement through each cell in the landscape (see review by Zeller et al. 2012). Both methods produce a continuous surface quantifying the relative value of each map cell for movement among specified patches, accounting for the effects of both distance between patches and cost of movement. As they differ in their assumptions, formulation, and interpretation, the approaches are generally considered to be different but complementary (McRae and Shah 2008, Singleton and McRae 2013). Rainey (2012) provides an excellent examination of the 2 methods.

Least-Cost Distance modeling for focal species has been the most widely used method for designing linkages to connect patches of habitat (e.g., Beier et al. 2011). The objective of LCD modeling is to identify the swath of land that minimizes the ecological cost of movement through a landscape for a species. LCD models calculate the cumulative cost-weighted distance of all paths between pairs of patches by summing the cost-weighted distance values encountered in each cell. Least cost corridor models were run in ArcGIS 10.2 using the 'cost distance' and 'corridor' Spatial Analyst tools.

Figure 13. Location of U.S. Highway 2 adjacent to the Badger-Two Medicine area, with mile-post markers labeled every 2 miles between Marias Pass and East Glacier, Montana.



Circuit theory models treat the landscape as an electrical circuit, quantifying the probability of current (moving animals) passing from a source patch through any given node (cell) in the landscape to a destination patch (McRae et al. 2008). The CT approach is unique because it accounts for path redundancy. Cells with many possible paths passing through them (i.e. bottlenecks or pinch-points) are assigned high probability of movement. Circuit theory models were run in CircuitScape® 4.0 (McRae and Shah 2008), with the final composite map reflecting cumulative density of current.

Brent Brock, Craighead Environmental Research Institute, carried out the connectivity analyses to identify key linkages across the major highways. For each species and application, we provide specific details (below) on (1) defining and mapping source and destination patches, and (2) developing cost or resistance surfaces. In general, we excluded areas of human development along the major highways based on the conservative assumption that human settlements are simply impermeable to movement by these wary species. Within a 1 km-wide strip on either side of Highways 2 and 83, we digitized all residential and commercial points (from a high-resolution Bing satellite image) and buffered them with a radius of 250 m. The resulting footprint of settlement was considered impermeable and applied as a mask to the habitat maps. Highway mitigation efforts will likely be more effective if they focus away from sites of human development.

For the corridor analysis, we simply created a 2-patch scenario, with a region on each side of the major highway. We ran ‘Create Corridor Raster’ (using ‘Linkage Assistant’, a custom ArcGIS toolbox developed by the Craighead Environmental Research Institute) to generate cost-distance surfaces for each source/destination patch and calculate the least-cost corridor between each patch pair. A final corridor surface was generated by calculating the cell-based minimum for all pair-wise corridor surfaces. Finally, we extracted the ‘top *x* percent’ of corridor values which provided useful discrimination of putative linkages for the particular species in these landscapes. Typically, this value was 10% but varied. Here are further details pertinent to each species.

Grizzly Bear: Primary and secondary habitat components comprised the source patches (see Chapter 2: page 36, Figure 5). Patches <4 mi² (10 km²) were removed on the assumption that larger patches might serve as blocks of core habitat (Mace and Waller 1998, Gibeau et al. 2001), rather than smaller ones serving as ‘stepping stones’. In addition, we removed from sources those areas within 500m of the highway as well as human settlements buffered by 250 m. Even extremely low density of exurban residences can cause source habitats for grizzly bears to become mortality sinks (Schwartz et al. 2012).

For the cost surface, we assigned the following cost weights to the grizzly bear habitat model:

Habitat Model	Cost Weight
0	5
1	2
2	1
3	0

Thus, the primary habitat components (score = 3) had no cost assigned to them, whereas the secondary components (score = 2) were assigned a slight cost of 1. Where these components occurred within 500m of an open road and thus low security, they were assigned a cost of 2. We assigned a cost weight of 20 to areas within 500 meters of the major highway or within the buffered areas around human settlements. Lastly, primary and secondary patches <4 mi² were assigned a cost weight of 0 (CD models) or assigned as short circuit patches (CT models), so that small patches could serve as stepping stones for movement.

Wolverine: We used the combined version of the wolverine models developed by Copeland et al. (2010) and Inman (2013) to define current primary habitat as source patches (see chapter 2: page 42 for details, Figure 7). Again, we imposed a minimum-size threshold of >4 mi² (10 km²) to distinguish patches that might serve as core blocks of multi-day habitation. To develop the cost surface, we rescaled the habitat suitability values 1-100, then calculated landscape resistance as the inverse of suitability [1 – Suitability]. Lastly, primary patches <4 mi² were assigned a cost weight of 0 (CD models) or assigned as short circuit patches (CT models), so that small patches could serve as stepping stones.

We ran both the LCD and the Circuitscape models for grizzly bear and wolverine. Here, we show only the Circuitscape-model maps because it essentially mimicked the LCD maps but provided greater discrimination among relative linkage values. In the following maps, ‘warmer’ colors (red-orange) indicate higher connectivity scores and ‘cooler’ colors the lower scores. Because these models cover relatively local areas where suitable habitat patches are large and widespread, the results are not as dramatic as in more fragmented landscapes.

Finally, it should also be noted that such analyses of connectivity depict the relative degree of connectivity compared among areas along the highway – not a *probability* of linkage or crossing. In the absence of data on animal crossings, there is uncertainty in choosing percent cutoffs for mapping putative linkages. In this case, we had known crossings of Highway 2 by grizzly bears. Moreover, these analyses can suggest which core areas have added value due to an adjacent linkage.

Grizzly Bear: Primary and secondary habitats for grizzly bears occur in very close proximity (0-1 mi) to Highway 2 along much of the highway between Marias Pass and East Glacier, Montana. To facilitate greater discrimination of relative connectivity along the highway, we buffered it by 1-km on each side and re-stretched the linkage values therein for display purposes. Researchers Richard Mace (Montana FWP) and John Waller (Glacier National Park) kindly provided data on documented crossings of Highway 2 by radio-collared female grizzly bears.

The 11-mile section between Marias Pass and East Glacier Park (MP 197-208) includes the longest stretch of Highway 2 between West and East Glacier (55 mi) with the highest ranking for linkage potential. Although the landscape is fairly open, there are few human settlements here. At least 33 crossings of grizzly bears (including family groups) have been documented along this section (Waller 2005; R. Mace, Montana FWP, *unpublished data*; T. Luna, *personal communication*) (Figure 14).

Figure 14. Key linkages across U.S. Highway 2 for grizzly bears according to Circuitscape model. Linkage values displayed using a histogram equalize stretch, with 'warmer' colors (red-yellow) representing higher values. Arrows denote known crossings by multiple female grizzly bears during 2004-2012. Bear data courtesy of R. Mace, Montana FWP and J. Waller, Glacier National Park.

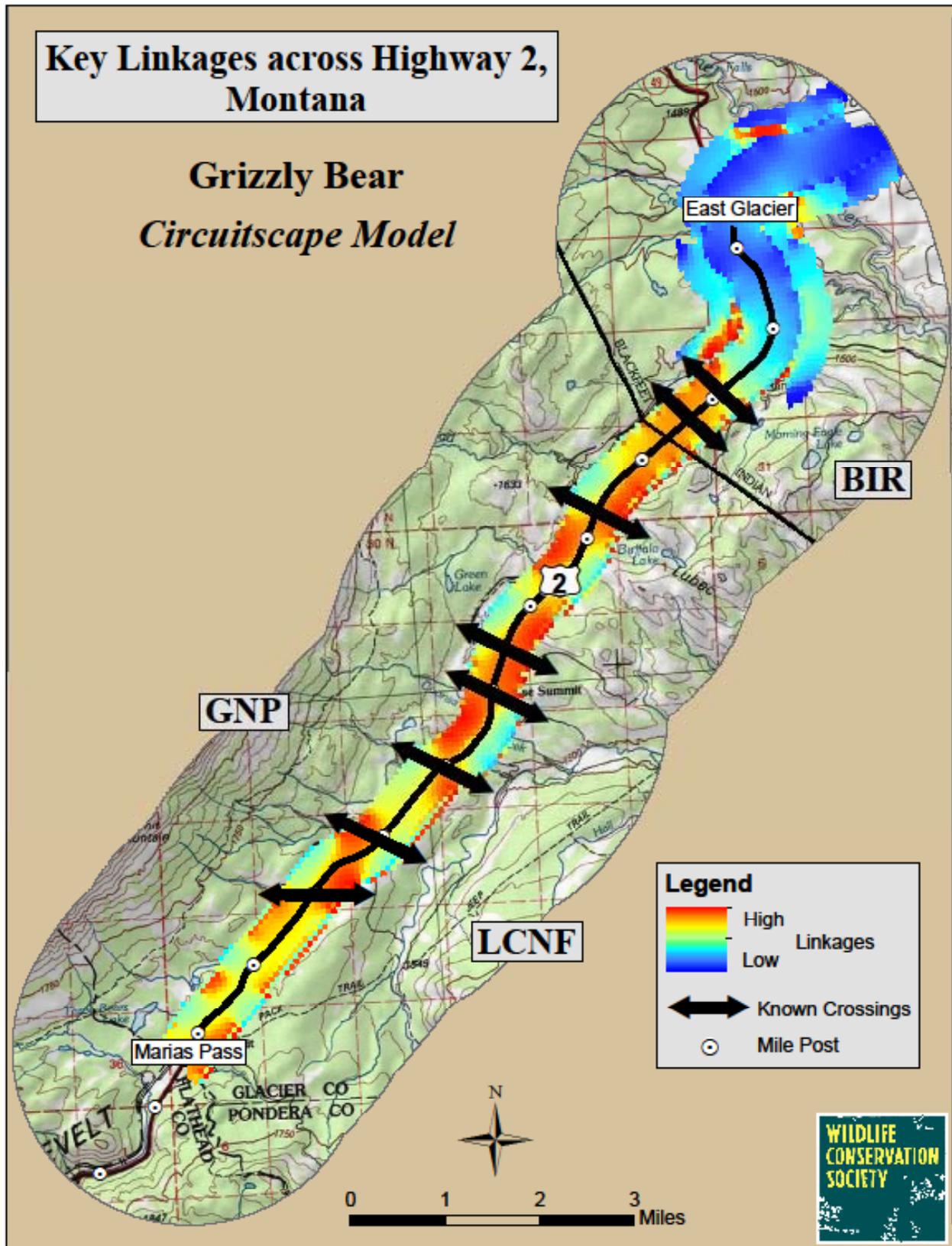
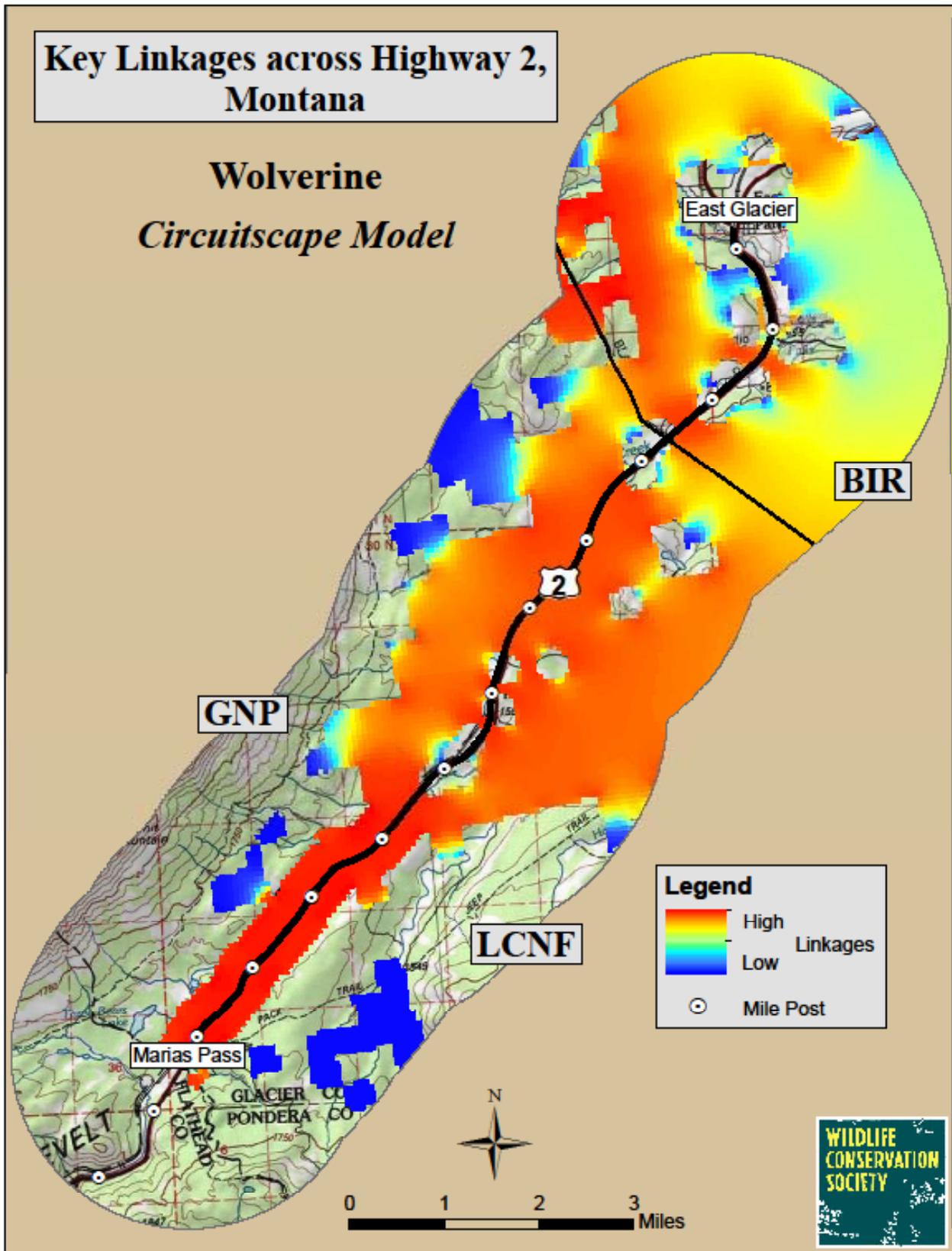


Figure 15. Key linkages across U.S. Highway 2 for wolverines according to Circuitscape model and based upon combined model of wolverine habitat. Linkage values displayed using a histogram equalize stretch, with 'warmer' colors (red-yellow) representing higher values.



During 1999-2001, researchers monitored the movements of 25 grizzly bears along Highway 2 and associated railroad, mostly east of Marias Pass (Waller 2005, Waller and Servheen 2005). During this period, traffic volume on the highway averaged 82 cars/hr with higher volumes during daylight; trains averaged about 1.2/hr, with more during nighttime. Thirteen different grizzlies crossed Highway 2 at least once during the study for a total of 131 crossings. Interestingly, most of the crossings (64%) were made by 2 subadult bears (1M, 1F), and adult females appeared most sensitive to traffic (especially when accompanied by cubs). Most crossings occurred at night (85%) when traffic volume on the highway was low (average = 30 cars/hr). Traffic flow at the time (2300-0700 hrs) that bears actually crossed the highway averaged about 11 cars/hr. Frequency of bears crossing Highway 2 was lower than expected assuming random movements. Researchers opined that connectivity is still functional along Highway 2 and attributed this to several factors: low volume of highway traffic at night, narrow width of highway, limited human developments, and expansive protected habitats on both sides of the highway. In Banff National Park, Canada, grizzly bears also crossed the trans-Canada highway less frequently with higher traffic volume (Chruszcz et al. 2003).

Wolverine: Primary habitat for wolverines occurs in close proximity (0-4 mi) to Highway 2 along much of the highway between Marias and East Glacier, Montana. To facilitate greater discrimination of relative connectivity along the highway, we buffered it by 1-km on each side and re-stretched the linkage values therein for display purposes. For wolverines, the Circuitscape model indicated that the section from Marias Pass east about 4 miles to MP 202 had relatively higher connectivity (Figure 15).

Scant information is available on wolverine crossings along highways. In the Greater Yellowstone Ecosystem, Packila et al. (2007) documented 43 crossings of highways by 12 wolverines. Subadults making dispersal or exploratory movements comprised the majority (76%) of road crossings, most of which were made during January–March. On a Wyoming highway where traffic volume commonly exceeded 4,000 vehicles per day, four different wolverines (2F, 2M) crossed the highway 16 times. At least 3 crossings occurred within a 4-km section where forest cover bordered close to the highway, about 4 km from the nearest human settlement. Major highways with significantly greater traffic volume, however, can impede wolverine crossings. Along the Trans Canada Highway between Yoho and Banff National Parks with 25,000 vehicles per day, wolverines avoided areas within 100 m of the highway in winter and preferred areas >1100m away from the highway (Austin 1998). More recently, wolverines crossed the Trans-Canada Highway in Banff National Park using underpasses and overpasses only 10 times during 2009-2013 as revealed by remote cameras (A. Clevenger, Western Transportation Institute, *personal communication*).

This section of Highway 2 adjacent to the Badger-Two Medicine is crucial for regional connectivity for wide-ranging animals such as grizzly bears and wolverines.

A Smart Strategy for Climate Change: Protecting and Connecting Large Diverse Landscapes

One challenge facing conservation of wildlife and wildlands over the past century has been the ever-expanding footprint of humans – urban and rural sprawl, superhighways and forest roads, dams and diversions. But scientists are alerting us to a new challenge for the next century: climate change. What changes in climate can we anticipate over the next 50-100 years? What will be the ecological consequences? What might comprise thoughtful responses to this new challenge?

Here, I synthesize the most relevant findings in several recent climate assessments encompassing the Crown of the Continent Ecosystem (McWethy et al. 2010, Pederson et al. 2010, Murdock and Werner 2011, Wang et al. 2012; also see fuller narrative and more citations in Weaver 2014). These studies by a diverse set of research scientists used empirical weather-station data for the past 50-100 years and multi-model ensembles with regional downscaling to develop future projections. Taken together, these represent some of the best available analyses and projections – with strong agreement among the assessments. Although there is still considerable uncertainty in climate projections (especially for complex environments like mountains), climatologists expect that patterns and trends in climate over the past 50-100 years will continue and perhaps accelerate.

- △ *warmer winters and hotter summers*: Both winters and summers will become warmer, with intense heat waves in summer becoming more common and longer in duration (McWethy et al. 2010, Murdock and Werner 2011). Perhaps the most iconic/ironic impact of climate change has been the vanishing glaciers in Glacier National Park, which may disappear by 2030 or sooner.
- △ *variable precipitation patterns*: During the 20th century, there have been periods of drought and periods of greater precipitation in western Montana (Pederson et al. 2010). Precipitation patterns are more difficult to predict than temperature, especially in the complex terrain of mountains. Various models suggest a slight increase or decrease (-10 % +10 %) in annual precipitation in the Crown region with continued decadal variability (Murdock and Werner 2011). There may be more intense precipitation events.
- △ *decreasing snowpack and earlier melting in spring*: Annual snowpack level (indexed by April 1 Snow Water Equivalent, SWE) has declined by 15-30 % during the past 40 years. More of the winter precipitation has been falling as rain rather than snow – reducing snowpack at low to mid elevations by ~20 % (Pederson et al. 2013). Rain-on-snow events have become more frequent at these lower elevations, increasing the prospects for winter flooding. Over the past 50 years, warmer temperatures have led to earlier runoff in the spring (by 1-4 weeks) and reduced base-flow of streams in the summer and autumn across western United States (Pederson et al. 2011). This pattern is projected to continue in the future due to warmer winter temperatures.

- △ *declining stream flows and warmer streams, particularly by late summer:* The decline in snowpack has reduced recharge of aquifers, making less water available for groundwater flow into streams and decreasing the base flow during the key summer period – especially along the Eastern Slopes of the Rockies (Rood et al. 2008). With warmer air temperatures, loss of shading cover along streams due to wildfire, and lower stream flows by August, stream temperatures have also increased (Isaak et al. 2010). Researchers project that these trends in stream temperatures and flows will continue in the future, with negative consequences for coldwater native trout and other biota (Jones et al. 2013).
- △ *longer season of wildfire, with severe fires across more of the landscape:* As temperatures continue to climb in the future accompanied by earlier snowmelt and hotter, drier summers, there will likely be a longer fire season with severe fires across more of the landscape (Spracklen et al. 2009).
- △ *spread of insects, invasive weeds, and non-native fish:* Along with warmer temperatures and prolonged droughts, wildfire and land alterations have promoted spread of invasive plant species such as cheatgrass and spotted knapweed (Bradley 2009) and non-native rainbow and brook trout to the detriment of native, cold-water trout (Rahel et al. 2008).
- △ *shifting distribution of plants and animals:* As conditions become warmer and more arid in the future, forests will decline in density and extent, and some at lower elevations may transition to shrub-dominated sites and grasslands. In the middle sections of mountain slopes, the structure and composition of forest communities will change as different species shift mainly upward or to different aspects. At higher elevations, alpine meadows may be encroached by more trees and perhaps disappear altogether over time (Hebda 2010). During warming episodes in past millennia, distribution of animals in North America generally shifted north in latitude and upward in elevation, too (Guralnick 2007). In the mountains, various mammals shifted distribution upward in elevation or perhaps to a different aspect and consequently did not have to shift as far north as those in flatter areas. Of course, there were no roads and other human infrastructure back then that posed barriers to such shifts.

Projected changes in climate will set many ecological changes cascading into motion, putting increasing pressure upon plants and animals to adapt their niche or move to track preferred environmental conditions. Although species' responses to environmental change differ, their primary response to large climatic changes during the Quaternary period was to shift their geographical distributions, albeit at much slower pace than will be required under most climate change scenarios (Huntley 2005). Scientists are already documenting changes in species distribution over recent decades (Parmesan 2006). Furthermore, because species respond individually, composition and structure of ecosystems will change in the future as novel assemblages come together (Williams and Jackson 2007). Complex ecological interactions may affect species beyond simply changes in their climatic 'envelope'.

More people may move into the Rocky Mountain region as a response to more intense climate change (heat, drought, and sea rise) elsewhere. Ever-increasing numbers of people across the landscape would only exacerbate current challenges of habitat fragmentation and mortality risk. Resource development pressures may intensify and expand as society scrambles for dwindling fossil-fuel and water resources (Klare 2012). What does all of this imply for conservation strategies to maintain species, ecosystems, and the critical services they provide?

One key conservation concept involves *resilience* thinking. ‘Resilience’ can be defined as the capacity of species or system to withstand disturbance and still persist (sensu Holling 1973). One of the key messages of resilience thinking is to keep future options open through an emphasis on ecological variability across space and time, rather than a focus on maximizing production over a short time (Walker and Salt 2006).

This kind of resilience thinking is reflected in several ‘climate-smart’ strategies identified by scientists and managers from around the world (e.g., Hannah and Hansen 2005, Hansen et al. 2010, Davison et al. 2012). A broad consensus has emerged on the following actions to enhance resiliency in the face of climate change:

- ✓ Protect large intact landscapes with high topographic and ecological diversity
- ✓ Enhance connectivity among such key landscapes
- ✓ Reduce other pressures on species and ecosystems

In an ever-changing world where impacts of habitat loss and fragmentation, invasive species, and climate warming are accelerating, vulnerable species will persist longer with well-designed networks of protected refugia (‘safe havens’) and connectivity (‘safe passages’) that offer ecological options (Keppel et al. 2012, Weaver 2013). Safe havens can be set up and scaled to meet various conservation concerns. One fundamental tenet might be to encompass the full array of seasonal or annual habitats used by a vulnerable focal species (e.g., wolverines). Another key tenet might be to provide a range of elevations, aspects, and topographic complexity to facilitate potential adaptation to changing climates (Anderson and Ferree 2010). Ecologists and land planners in British Columbia have been modeling climate refugia for vulnerable species to identify conservation areas (Kittel et al. 2011, Rose and Burton 2011). Other researchers have reported that the intactness (un-fragmented) of landscapes can help enhance resiliency to effects of climate change (Watson et al. 2013, Eigenbrod et al. 2015).

The Badger-Two Medicine area could serve as such a climate refuge due to (1) its remarkable range of elevation from prairie to peaks along the Continental Divide within a short distance of 5 mi, (2) diverse topography and vegetation types, (3) intactness, and (4) connectivity to nearby Wildernesses and National Parks.

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3. BLACKFEET SACRED LANDS IN THE BADGER-TWO MEDICINE

On May 5, 2014, the Secretary of the Interior determined that the Badger-Two Medicine (exclusive of private property) was eligible for listing in the National Register of Historic Places as a *Traditional Cultural District*. Altogether, it encompasses 165,588 acres: 129,746 acres in the Badger-Two Medicine area and an additional 35,842 acres primarily in the Birch Creek watershed, which is protected as part of the Bob Marshall Wilderness. Our focus here is on the portion within the Badger-Two Medicine area as delineated for this report (see Figure 16).

Many people in Montana and elsewhere, however, may not be familiar with this designation. In this chapter, I begin with an overview of the of the National Historic Preservation Act and the concept of a Traditional Cultural District. Next, I provide a synopsis of several investigations conducted over the past 25 years of the historic and cultural values of the Badger-Two Medicine. Lastly, I summarize the salient points of the formal evaluation of the Badger-Two Medicine as a Traditional Cultural District and its subsequent eligibility for listing on the National Register of Historic Places.

Sacred Lands under the National Historic Preservation Act: Overview

Congress passed the National Historical Preservation Act (NHPA) in 1966 (16 U.S.C. 470, as amended through 1992). In the statute, Congress declared that

- (1) the spirit and direction of the Nation are founded upon and reflected in its historic heritage, and
- (2) the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people.

It shall be the policy of the Federal Government, in cooperation with other nations and in partnership with the States, local governments, Indian tribes, and private organizations and individuals to administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations.

The NHPA requires agencies to ensure that their historic properties are preserved to maintain their historic and cultural values as part of the heritage of all citizens of the United States. The Act authorizes the Secretary of Interior “to expand and maintain a National Register of Historic Places composed of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture”.

In the National Register Bulletin No. 38 (Parker and King 1998), a *traditional cultural property* is defined as a tangible property that is “associated with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community.” The word *traditional* refers to “those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice”. Significance of a TCD derives from its role in the community’s historically-rooted beliefs, customs, and practices.

Types of properties eligible for listing include those of traditional religious and cultural importance to Indian tribes. For example, these include locations

- associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world.
- where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice.

The Bulletin states that “existence and significance of such locations often can be ascertained only through interviews with knowledgeable users of the area. It is vital to evaluate properties thought to have traditional cultural significance from the standpoint of those who may ascribe such significance to them – whatever one’s own perception of them, based on one’s own cultural values, may be.”

Establishing that a property is eligible for inclusion in the National Register does not necessarily mean that the property must be protected from disturbance or damage. But it does require federal agencies to evaluate the impact of all federally funded or permitted projects on listed or eligible properties through a process known as *Section 106 Review*. Specifically it requires the federal agency to consult “with any Indian tribe that attaches religious and cultural significance” to an historic property that would be affected by a proposed federal undertaking. Furthermore, the agency must “take into account” the effect a project may have on historic properties and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

According to one Indian law scholar, “[b]ecause many tribes attach religious and cultural importance to places that are not within the boundaries of their reservations, many tribes regard this as a very important right, even though it is just a procedural right. In essence, it is the right to have a seat at the table, a chance to persuade the responsible federal official to do the right thing” (Saugee 2002).



Cultural Attributes of the Badger-Two Medicine

Cultural Activities: In the most recent registration form submitted to the National Register of Historic Places (Zedeno 2013), a total of 147 sites of cultural significance are listed for the Badger-Two Medicine (Table 9). Hunting camps or locales account for 61 of the sites, but there are 22 sites for vision quests, 13 for offerings or shrines, 9 for group ceremonies, and 7 for paint collecting. Much of the following information has been gleaned from the revised report on the cultural attributes of the Badger-Two Medicine area (Zedeño and Murray 2012) and the Registration Form (Zedeño 2013).

Table 9. Number of sites of cultural significance in the Badger-Two Medicine area, Montana.

Activity	Two Medicine	Badger	Mowitch	North Birch	TOTAL
Vision Quests	6	12	2	2	22
Hunting	19	28	7	7	61
Scouting	7	2	2	3	14
Plant Collecting	5	1	1	-	7
Trapping	4	2	1	-	7
Offering	5	4	2	2	13
Paint Collecting	1	2	2	2	7
Group Ceremony	2	4	2	1	9
Rock Collecting	3	1	-	3	7
TOTAL	52	56	19	20	147

Since time immemorial, hunting has been a subsistence activity and a cultural practice that defines the Blackfeet way of life (Zedeño 2013). Buffalo, elk, deer, antelope, and goat figure prominently in Napi and Star People stories (McClintock 1910). There are connections between elk and the Holy Woman of the Okan (Wissler 1912) and between mountain goats and Cold Maker (Schaeffer 1934), too. After the demise of the buffalo herds, the Blackfeet re-invented themselves over time as elk hunters in the mountains. The sacred beaver bundle originally played a critical role in buffalo hunting, but beaver bundle songs are used now in rituals associated with elk hunting. Numerous historic elk and deer hunting camps are located in the tributary basins of the South Fork Two Medicine River, along Badger Creek and its main tributaries, and along the North Fork Birch Creek. (Fish are not considered a traditional Blackfeet food; in recent times, however, fishing has become a popular recreational activity.)

There are many high peaks across the Badger-Two Medicine where Indians fasted while seeking powerful visions to guide their lives (Greiser and Greiser 1993, Zedeño and Murray 2012). Heart Butte is one of the most powerful and is considered by some Blackfeet as the southern equivalent of Chief Mountain. Most of the vision-seeking sites occur in the Badger Creek watershed, but there are several in the South Fork of Two Medicine River and Birch Creek basins as well. Offerings of tobacco and prayer flags are made throughout the Badger-Two Medicine, mostly on mountain or ridge tops.

In Blackfoot epistemology, paint in all its colors and textures is a crucial mediator between humans and the other-than-human world. Paint is connected to everything in Blackfeet culture, from keeping bad spirits and bad dreams away to engaging the powerful forces of the universe. Paint is thus an essential resource not only for religious practitioners but for every Blackfoot person (Zedeño and Murray 2012). Some of the best sources for paints occur in Birch Creek, but other sources may be found in Badger Canyon, Mowitch Basin, and the South Fork of Two Medicine River.

The Badger-Two Medicine is an important area for collecting medicinal, ceremonial and food plants, too. The various plants occur across a wide variety of elevation, aspect, and vegetation type. A comprehensive report on plants of cultural significance to the Blackfeet and associated plant communities on the Badger-Two Medicine and Blackfeet Reservation has been completed quite recently by local botanist Tara Luna (2015).

Importantly, multiple cultural activities (non-hunting) are carried out at 20 sites – particularly in the South Two Medicine (9) and Badger Creek (5) basins.

Cultural Geography:

The various watersheds that comprise the Badger-Two Medicine area have unique stories, cultural attributes, and resources that comprise an inter-connected landscape with sacred meaning for the Blackfeet people.

South Fork Two Medicine River: Beaver is one of the most powerful animals in the Blackfeet pantheon/cosmos and liturgy and is closely connected to the creation of the Two Medicine River Valley. And the beaver bundle is one of the most enduring religious institutions of the Montana Blackfeet (Zedeño 2013). It contains representatives of the creatures that inhabit all realms of the Blackfeet universe, upward of 100 animals, each with four songs, an origin story, and a very unique personality (McClintock 1910). Alliances among humans and all other inhabitants of the world are acknowledged in the beaver bundle. Beaver habitat occurs along the South Fork of Two Medicine River and along Deep Creek. Not surprisingly, this area is heavily used by bundle holders who originally settled along the Two Medicine River.

The South Fork Two Medicine River is also associated with the Okan and Many Smokes ceremony and with a creation story of when humans lost their ability to talk to animals (Greiser and Greiser 1993). Blackfeet tradition recounts Napi created Mount Baldy where Napi took Mudman (the first male) into the mountains to instruct him on how to heal sickness and have a continuing relationship with the creator.

There are 9 sites with multiple cultural values, including 5 used for vision quests. The area is rich in medicinal plants, as well as being the closest source of huckleberries to the Reservation. Since prehistoric times, both Deep Creek and Whiterock Creek have provided a natural gateway between the prairie and the mountains surrounding the South Fork.

Badger Creek: Many Blackfeet people revere Chief Mountain as the original home of Thunder – the representative of the source and cycle of life. Some Blackfeet, though, believe that Thunder migrated south after the creation of Glacier National Park. He set up new residence on the high peaks overlooking Badger Canyon, which gives the landscape its holy character (Zedeño 2013). It is also the home of Wind Maker and Cold Maker, as well as various other spirits and magical animals – particularly the Medicine Wolf, Medicine Grizzly, Medicine Elk, and Chief Badger (Vest 1988). According to Hernandez (1999), Star People stories inform about the context of traditional learning, rules of knowledge sharing, moral lessons, responsibility, bravery, reciprocity, and proper behavior. The Star People are manifested physically in the high peaks that overlook Badger Creek. During the time of religious interference, the Okan or Sun Dance ceremony was held in Badger Canyon ... beyond the purview of agents and priests. Okan lodges were erected close to the headwaters of Badger Creek, too. Archaeological evidence (e.g., projectile points) indicates that Badger Canyon may have been used for at least two millennia (Biedl 1992), and pictographs have been reported in the Badger area (Greiser and Greiser 1993).

There are 9 mountain peaks used for vision quests in the Badger Creek landscape. Some bear the names of the Star People, while others have Blackfeet family names and connections. The presence of Rocky Mountain goats (which are considered mountain spirits) on several peaks makes those sites powerful places for vision quests. Five of these have multiple cultural values, too. The entire length of Lonesome Creek is considered holy as a place where people prepared spiritually for their ascent to the sacred peaks. In addition to its religious power, the Badger area has long sustained Blackfeet families hunting elk. Paints of various colors may be found here as well (Vest 1988, Greiser and Greiser 1993). Other important resources are mineral licks, pure spring water, and a variety of timber and plants (Zedeño et al. 2006).

Mowitch Basin: Heart Butte is called ‘the Chief Mountain of the South’ due to its appearance, power, and frequent use for ceremony by both Montana and Alberta members of the Blackfoot Confederacy. Its traditional role as a sacred mountain has increased in significance over the years since Chief Mountain (partially in Glacier National Park) became a hot spot for tourists and rock climbers (Greiser and Greiser 1993, Zedeño et al. 2006). The nearby town of Heart Butte was established during the reservation period, but even before its establishment this was where Blackfeet bands came together for the Sun Dance.

The are 2 mountain sites with multiple cultural values, including vision quests. Mowitch Basin is an important hunting area for the Blackfeet, and there are several traditional camps along the North Fork of Whitetail Creek. It is also a source of rare and sacred paints.

North Fork Birch Creek: Birch Creek is perhaps best known as a source of sacred pigments and paints and as a botanical pharmacy. It is another important hunting area for elk close to the Reservation, and there are several traditional Blackfeet camps along the North Fork. There are 4 sites with multiple cultural values in the North Fork Birch Creek, including 2 used for vision quests and a historic Sun Dance camp. The North Fork trail is one route up to Badger Pass, a site of ceremonial importance.

Beaver Lake: Beaver Lake is located just west of the Continental Divide, beyond the headwaters of South Badger Creek and North Birch Creek. It is one of the oldest and most frequently-used ceremonial areas and camping grounds, as well as a pilgrimage site for Blackfeet religious practitioners in anticipation of their vision quests. In the Blackfeet worldview, lakes have many sacred aspects: birth-place of the medicine elk (or Wind Maker), abode of water spirits and other magical beings, source of sacred designs painted on tipis, and the source of the Beaver Bundle. Beaver Lake is significant because most of the trails leading to it pass through the Badger-Two Medicine area, including South Fork of Two Medicine River, Whiterock Creek, Badger Creek, Whitetail Creek and North Fork Birch Creek.

Inter-Connected Landscape: The Badger-Two Medicine landscape is unified by origin and creation stories as well as by traditional use practices which knowledge has been passed down through many generations of Blackfeet. The South Fork of the Two Medicine, Badger Canyon, Mowitch Basin, and Birch Creek are conceived by traditional users as *doorways into the sacred mountains* – the Backbone and beyond. Various sites of cultural and religious significance are connected to other sites through a complex network of trails and passes. Such trail networks take time to develop and may represent hundreds of years of land use. These old trails connect everything and it is this connection that makes the Badger-Two Medicine sacred geography greater than the sum of single sites or resources.

Badger – Two Medicine Traditional Cultural District

Various studies have documented the cultural significance of the Badger-Two Medicine area to the Blackfeet people. Initial studies based upon *archived* documents were carried out by Deaver (1988) and Beidl (1992).

Formal evaluation and documentation of the Badger-Two Medicine area for the National Register of Historic Places under Section 106 of the National Historic Preservation Act began in 1991 (Greiser and Greiser 1993). This investigation focused primarily on mountain peaks in the Badger Creek watershed where religious activities and ceremonial resource collection have taken place in the past and present. It entailed formal consultation with the Blackfeet Tribe, including systematic ethnographic interviews of 33 tribal members. This study identified 13 inter-connected Traditional Cultural Properties comprising 89,421 acres (primarily in the Badger Creek area). This initial Badger-Two Medicine Traditional Cultural District (TCD) was determined eligible for listing in the National Register of Historic Places (Keeper of the National Register 2002).

The second formal evaluation was carried out between 2004 and 2008 by the Bureau of Applied Research in Anthropology at the University of Arizona, the Blackfeet Tribal Historic Preservation Office, and the Blackfeet Community College (Zedeño et al. 2006, Zedeño and Murray 2012). Guided by intimate knowledge of the B2M by the Blackfeet, it was more inclusive in the types of activities, places, and resources than the previous evaluation. It covered the entire Badger-Two Medicine area, including the South Fork of Two Medicine River, Badger Creek, Mowitch Basin, North Fork of Birch Creek – as well as the rest of Birch Creek watershed and Beaver Lake just outside but connected to the B2M.

The combined multi-year research has yielded substantial evidence that all of the Badger-Two Medicine qualifies as a *Traditional Cultural District*, under Eligibility Criteria A, B, C, and D. The following supporting statement for each criterion was excerpted from the registration form submitted for the B2M (boundary expansion) to the National Register of Historic Places (Zedeño 2013).

- A. Association with events that have made a significant contribution to the broad patterns of Blackfeet history.

The B2M TCD is inseparable from the historical processes and events that shaped and still affect Blackfeet society and culture since time immemorial. The watersheds are connected with events that occurred at the time of the Creation of the world, including the emergence of primordial animal beings from lake waters, transfer of medicine pipes from Thunder, the gift of the wild turnip by the Star People, and the gift of the Sacred Buffalo to the people, among many others.

The watersheds were and are essential to the procurement of sustenance during the starvation winters suffered by the Blackfeet after the establishment of the reservation, during the Great Depression, and today, when unemployment has risen to 60% in the Blackfeet Indian Reservation. Hunting elk, in fact, not only represents a subsistence economy, but a new way of culturally and socially organizing around the hunting ethos of the 20th century.

- B. Association with the lives of persons significant in our past.

The B2M TCD is associated with supreme beings such as Napi, the Star People, Thunder, Wind, and Blizzard, and with “persons” who currently inhabit it, including the Dream People, the Water People, the Little People, Bear, Beaver, Elk, Magpie, Chickadee, and Loon.

- C. Property embodies the distinctive characteristics of a type, period, or method of construction.

The B2M TCD is representative of a unique forest-prairie adaptation that embodies Blackfeet tradition and identity, past and present. The community’s long-term struggle to preserve the RM1/B2M Unit and Bob Marshall Wilderness precisely demonstrates how significant this adaptation has been and continues to be, even after the Agreement of 1896, when the Blackfeet lost possession of the mountains but emerged as elk hunters after the bison were no longer available in the prairie. Family connections to the land and to specific places in the B2M also remain in place.

- D. Property has yielded, or is likely to yield, information important in prehistory or history.

The B2M TCD’s potential to yield archaeological and historical information that documents Blackfeet traditional land and resource uses including but not limited to: hunting, praying individually and in group, plant, animal, and mineral collecting, scouting, and trapping, is indicated by numerous findings.

The Registration Documentation concluded:

The ancestry, history, and livelihood of the Montana Blackfeet are inseparable from the B2M. The Blackfeet people feel connected to the B2M because they experience it in every aspect of their individual, family, and community lives. This land is essential to the well-being of the Blackfeet and to the continuation of their unique culture and society.

On May 5, 2014, the Secretary of the Interior determined that the Badger-Two Medicine Traditional Cultural District (boundary increase) was eligible for listing in the National Register of Historic Places. Specifically, it met eligibility criteria A – Ethnic Heritage-Native American, B – Social History, and D – Archeology-Prehistoric/Historic Aboriginal (Keeper of the Register 2014).

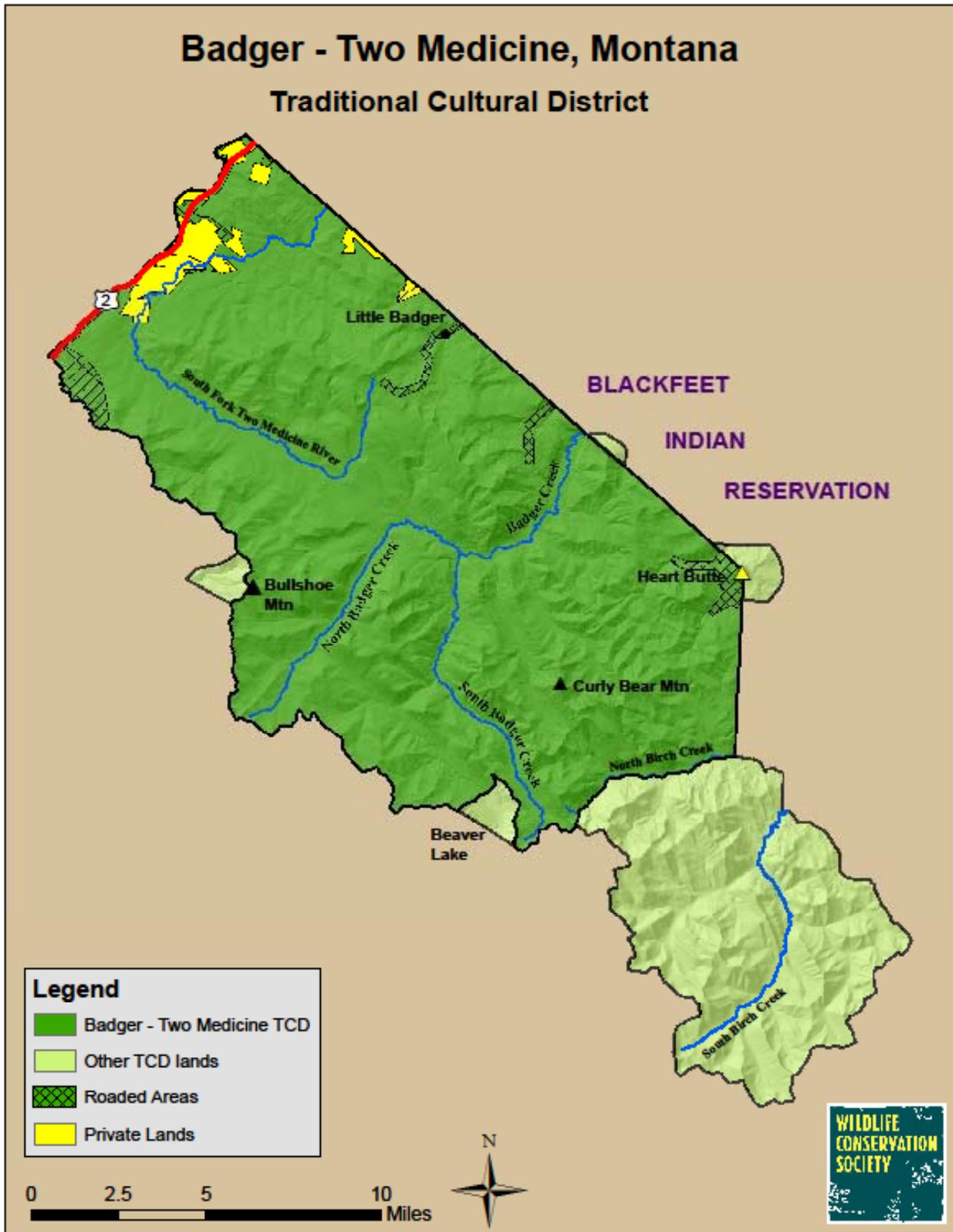
“The remote wilderness area of the Badger-Two Medicine Traditional Cultural District is associated with the significant oral traditions and cultural practices of the Blackfoot [sic] people, who have used the lands for traditional purposes for generations and continue to value the area as important to maintaining their community’s continuing cultural identity. The area is directly associated with cultural important spirits, heroes, and historic figures central to Blackfoot religion, traditional practices, and tribal lifeways.

While the original 2002 determination focused on recognized mountain peaks, the new documentation provides a more holistic and inclusive view of the region identifying a broader range of significant themes, property types, traditional forms of activities, and important places and resources.

The expanded Badger-Two Medicine Traditional Cultural District area represents a place of extreme power for the Blackfoot tribal community, providing tribal members a place to conduct important prayer, hunting, and plant and paint gathering activities. Particularly as life on the reservation changed, the expanded Badger-Two Medicine area became a significant region of refuge for many tribal members.

The added areas share geographical, cultural and spiritual characteristics with the original district, such that the entire area [Badger-Two Medicine] is seen as an interconnected traditional landscape.”

Figure 16. Badger-Two Medicine Traditional Cultural District, all of which was determined in May 2014 as eligible for listing in the National Register of Historic Places. About 130,000 acres occur in the Badger-Two Medicine area, whereas another 35,000 acres in the Birch Creek portion of the TCD is protected in the Bob Marshall Wilderness.



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4. CASE STUDIES OF CO-MANAGEMENT WITH INDIGENOUS PEOPLE AROUND THE WORLD

In the long ago, Aboriginal peoples inhabited much of the earth. These were hunter-gatherers organized in tribal societies with fervent beliefs, traditional customs, extensive knowledge of the local ecology, and stories of their homelands. During the 19th and 20th century, many of these indigenous people were killed, dispossessed of their traditional territory and relocated, socially and economically marginalized and politically subjugated by the dominant Eurocentric culture. Over the past 40 years, however, there has been a remarkable resurgence of native cultures and sovereignty all around the world. In many yet one voice, they have been asserting their inherent sovereignty, pursuing self-determination, practicing traditional customs, and laying claim to ancestral homelands.

Most of these lands, though, have been settled by other dominant cultures for more than a century. A system of ownership has been laid over the land, including the novel concept of *public* lands administered by a particular agency. Over time, a new culture and constituency of people have come to cherish these lands for many values. Now there are multiple voices speaking for the management of these lands and resources. And from this convergence of historic and recent currents comes a need for shared management of some lands that reflects the diverse cultures but common vision and purpose.

Many names have been given to the notion of some kind of shared management: ‘joint management’, ‘co-management’, ‘participatory management’, ‘collaborative management’, etc. The term ‘co-management’ has been used commonly but loosely to describe a broad continuum of management arrangements between a government agency and social actors of variable standing, decision authority and responsibilities (see Berkes 1999, Ford 2002, Borrini-Feyerabend et al. 2004, Carlsson 2005, Bauman et al. 2013 for discussion).

Let’s look at some examples of co-management from around the world that have been successful.

Australia: Pioneers in Co-Management of Parks with Aboriginal People



Australia had been inhabited by Aboriginal peoples for 45,000-50,000 years prior to British settlement in the late 18th century (Bowler et al. 2003). Most Aboriginal Australians were hunter-gatherers with a complex oral culture and spiritual values based on reverence for the land and a belief in the Dreamtime. The indigenous population began declining following European settlement, mainly due to infectious disease. A government policy of ‘assimilation’ beginning with the *Aboriginal Protection Act 1869* resulted in the removal of many Aboriginal children from their families and communities – often referred to as the ‘Stolen Generations’. In a 1967 referendum, the Federal government gained the power to make laws with respect to Aborigines. During this period, Aboriginal people did not have titled land of their own (akin to ‘reservations’) to exercise self-determination of governance, culture and resource use.

The struggle and persistence by Aborigines (local bands are called Traditional Owners) in the Northern Territory, however, led to passage of the *Aboriginal Land Rights (Northern Territory) Act 1976*. While its application was limited to the Northern Territory, it did grant “inalienable” fee title to some traditional lands. The Act is significant as it was the first of the Aboriginal land rights acts in Australia, allowing for transfer of title if claimants could provide evidence of their traditional association with land.

The Commonwealth (federal) government entered into joint management arrangements with traditional owners over three national parks in Australia between the late 1970s and the 1990s: Kakadu and Uluru-Kata Tjuta National Parks (both of which have World Heritage status) in the Northern Territory and Booderee National Park in Jervis Bay Territory. In response to one of the first Aboriginal claims, Kakadu National Park was declared in 1979 on the condition that the Traditional Owners lease it back to the Commonwealth’s Department of National Parks and Wildlife. Many people, however, consider Uluru-Kata Tjuta to have been the first co-managed national park in Australia because the local Aboriginal group received title in 1985 *and* had majority representation on the governing board (DeLacy and Lawson 1997, Australian Director of National Parks 2010).

At first, repatriation and co-management in Kakadu and Uluru was not popular with the non-Aboriginal majority in the Northern Territory or states in Australia (Woenne-Green et al. 1994). The pathway to co-management in most jurisdictions has been politically difficult – involving Aboriginal people in a long and protracted struggle (Haynes 2009, Bauman et al. 2013). Nonetheless, the legal and political terrain of protected areas and Aboriginal homelands across Australia has been transformed.

The concept of Aboriginal ownership and joint management of national parks in Australia has emerged as a response to increasing legal recognition of Aboriginal rights to traditional lands. The term ‘joint management’ in this context means the establishment of a legal partnership and management structure which reflects a trade-off between the rights and interests of traditional owners and the rights and interests of government conservation agencies and the wider Australian community. Arrangements differ according to provisions in the enabling legislation, the existence and provisions of a lease, provisions of management plan, levels of resourcing, and particularities of on-the-ground management. The greater the statutory recognition of the rights of Aboriginal people, the greater their formal involvement in park management (mostly in the Northern Territory). A key element in most arrangements is that the transfer of ownership back to Aboriginal people is conditional upon their support (through leases or other legal mechanisms) for the continuation of the national park or establishment of a new national park (Bauman et al. 2013).

There is considerable variation in many aspects of governance involving Aboriginals in management of protected areas in Australia (see Bauman et al. 2013 for overview). Nonetheless, several common themes have emerged. Here, I discuss both the common themes and variation of governance.

- **Legislation and Policy:** South Australia was at the forefront of the land rights movement in Australia, granting lands in some existing reserves to traditional owners through the passage of the *Aboriginal Lands Trust Act 1966*. Other jurisdictions passed legislation in 1976 (Commonwealth lands in Northern Territory), 1978 (Northern Territory), 1983 (New South Wales), and 1991 (Queensland). Aboriginal title to lands was not recognized until 1992, however, when the Australian High Court overturned the legal doctrine that Australia had been *terra nullius* (‘land belonging to no one’) before European occupation (case of *Mabo v Queensland*). This decision legally recognized certain land claims of Aborigines in Australia prior to British settlement. The Native Title Act of 1993 recognized validity of Native Title claims to Aboriginal land. Note: In the case of protected areas, the Native Title Act only allows that native title may be determined as a ‘bundle of rights’ — the right to hunt or fish, for example — rather than as a right to exclusive possession or ownership, and the rights of the Crown are seen to prevail over those of traditional owners. Nonetheless, these laws constituted a paradigm shift in public policy toward Aboriginal rights and served as a catalyst for the emergence of co-management.

Passage of the *National Parks and Wildlife Amendments (Aboriginal Ownership) Act 1996* in New South Wales (NSW) (known as the ‘Joint Management Act’) provides an interesting example of the legislative changes (Baird 2005). The central theme underlying the Act is recognition that certain lands in NSW are of cultural significance to Aboriginal peoples. The Parliament sought to recognize Aboriginal law and custom in relation to land, and traditional ownership of lands. The Parliament intended that there be created partnerships between traditional owners of lands and the National Parks and Wildlife Service in the management of lands recognized for both their cultural significance and conservation values. Key mandates of the New South Wales legislation include:

- (1) return national parks and reserves of Aboriginal cultural significance to Aboriginal peoples (e.g., Mamungari Conservation Park),
- (2) transfer ownership of land to Aboriginal Land Councils on behalf of Aboriginal traditional owners (e.g., Witjira National Park),
- (3) lease back Aboriginal-owned national parks and reserves to the National Parks and Wildlife Service under mutually agreed conditions (e.g., Coongie Lakes National Park),
- (4) establish boards of management (comprising 11-13 members) of majority Aboriginal control with representatives of stakeholder and other interest groups to manage the lands as national parks and reserves.

- ***Native Title and Leaseback:*** All states and territories have now amended their existing legislation regarding conservation and Aboriginal rights to address native title and co-management. There are a variety of co-management arrangements across jurisdictions in Australia. On Commonwealth (federal) lands in the Northern Territory, for example, Uluru-Kata Tjuta National Park was repatriated back to full Aboriginal ownership in 1985, with the title vested in a land trust. Simultaneously, the park was leased back on a 99-year term to the Director of National Parks with annual payments. In New South Wales, Aboriginal lands have been leased back to the Parks Minister for 30 years, with renewal for 30-year term. In other states, grant of ‘Aboriginal title’ is conditioned upon an agreement to manage the land for its existing purpose of conservation (Victoria). Where native title has been extinguished, traditional rights including co-management can still be recognized through Indigenous Land Use Agreements (ILUAs).
- ***Types of Joint Management:*** Again, there is considerable variation across Australia for involvement of Aboriginal people in the management of national parks, conservation parks and wilderness areas (Bauman et al. 2013). In a few areas, the Park is owned by an Aboriginal group and co-managed by a statutory board comprised of 8-12 members with an Aboriginal majority and government staff (the Kakadu-Uluru model). In other cases, the Protected Area is owned by the state and

co-managed by a board with equal representation between Aborigines and government resource staff. Under the ILUA for Witjira National Park in South Australia, the Aborigines received a leasehold (rather than tenure) from the state government; but Aborigines held majority of positions on the co-management board. Finally, there are National and conservation parks owned by the state with an advisory committee that includes Aboriginal representatives. In a few cases, boards include non-Aboriginal members (e.g., representatives of tourism, industry, etc.). Co-management structures appear dynamic, and details may change over time.

- **Management Roles:** Nearly all jurisdictions have established governing Boards, whose primary role is to prepare management plans and make strategic decisions; in some cases, these are subject to approval by the government Minister. In most cases, the majority of Board members are Aboriginal – one of whom is usually the chairperson. Typically, management plans specify the protection and conservation of the Park and its natural and cultural values/sites. In some cases, other stakeholders work in ‘partnership teams’ with the board of management, the broader community and traditional owners and their representative organizations. The Department of Parks (National or State) usually has responsibility for the day-to-day operation. Most parks require cross-cultural awareness training for all staff and Board members.
- **Aboriginal use of Park resources:** In the co-managed national parks, the rights of Aboriginal traditional owners to hunt, fish and gather are recognized and protected as essential to maintenance of their culture and identity. Nonetheless, several provisions balance this right to use resources with the obligation to protect biodiversity and other natural resources. These include (1) application of Aboriginal law and tradition, which imposes certain restrictions on its members; (2) obligations imposed on the board and the conservation agency by legislation, lease agreements and management plans to protect biodiversity and other natural values of the park; and (3) power of boards to regulate Aboriginal hunting, fishing and gathering if required following consultation.
- **Benefits for Aboriginal Communities:** Community benefits are realized through rental payments, employment within the park administration and tourism companies, and through the establishment of various business ventures. In the Commonwealth, annual rent is paid by the Director of National Parks to the local Aboriginal community who also receive a portion of Park entry and camping fees. In the Northern Territory, 50% of Park income is shared with Traditional Owners. Most Parks and other Protected Areas have employment and trainee programs for Aborigines. In Kakadu National Park, for example, Aboriginal people make up approximately 50% of full time and 60% of seasonal employees, and several major Aboriginal-owned tourism ventures have been

established. Aboriginal ownership of national parks, though, has not fundamentally altered chronic levels of Aboriginal poverty and associated social consequences such as poor health, housing and education (Smyth 2001, Smyth and Ward 2009).

As a pioneer in co-management of parks with Aboriginal people, Australia's experience of 'managing co-management' now spans more than three decades. As with most societal shifts, there was inertia and resistance at the beginning ... and it has been difficult political terrain to navigate. Over time, however, more states and territories amended their existing conservation legislation and Aborigine land rights legislation, which has enabled co-management of numerous parks and other protected areas across Australia. Popular sentiment has shifted in recent years, and governments view co-management as a policy solution toward reconciling the competing imperatives of ecosystem protection and Aboriginal cultural heritage (Zurba et al. 2012). The emerging acceptance of co-management suggests that the early fears and hostility towards it by some have been largely allayed (Bauman et al. 2013).

Arrangements for co-management of parks and other protected areas in Australia have been multifaceted, including a strong legal framework, native title or freehold tenure, boards of management with Aboriginals holding majority composition and chair positions, and rent for leaseback. Many international observers have regarded some of these governance structures as models of co-management.

Interestingly, with this rich tableau of experience, some veteran Australian reviewers have concluded that full and formal co-management (with its demands upon finances and time) may not be for everyone – at least not in the beginning (Bauman et al. 2013). They argue that a progressive, step-wise pathway may ultimately lead to more successful co-management. In this approach, indigenous people would take on additional responsibilities and greater decision-making powers at a scale best fitting their interests and capabilities at any given time. Such an approach could provide all parties with the time and opportunity to build and strengthen relationships and gain better understanding of each other's values, priorities, interests and modes of thinking - and for the public to gain confidence in the benefits of co-management. Such progressive pathways, however, should not be used to justify inequitable arrangements.

Bolivia: Partnership between Indigenous People and Conservationists



The Gran Chaco region covers about 390,000 mi² (one million km²) across Bolivia, Argentina, Paraguay and Brazil. Its diverse ecosystems include palm savannas and marshes, semiarid thorn forests, and open grasslands on sand dunes. In Bolivia, the Chaco faces many threats. Some of the surrounding ranches and commercial farms seek to expand by acquiring untitled lands. The Chaco contains several important oil and gas concessions and lies at a critical intersection of a regional gas pipeline network. Commercial hunting for the international pelt and skin trade has affected various wildlife species.

These threats spurred a partnership between the indigenous people of the Bolivian Chaco and a wildlife conservation group (Redford and Painter 2006, Noss and Castillo 2007). The partnership involved the Capitanía de Alto y Bajo Izozog (CABI) and the Wildlife Conservation Society (WCS). CABI is an indigenous organization that represents over 10,000 Guaraní people living in 25 communities along the Parapetí River in the lowland Chaco of Bolivia. Because of their residence in the Isoso area, the people are known as Isoceños. WCS is an international conservation organization recognized for its work in the conservation of wildlife and wild lands.

The threats to biological diversity which concerned WCS were considered by CABI as a threat to the livelihoods and lifeways of Isoceños as well. Independently of WCS, CABI's leadership determined that establishment of a protected area would provide a legal basis for safeguarding their historic homeland from expansion of the agricultural frontier, oil and gas development and highway construction. Conserving biological diversity was deemed important because it characterizes the homeland that Isoceños associate with their own identity as a people. Proposed mega-developments could limit alternative enterprises that might allow them to prosper economically while maintaining their own identity, cultural values and traditional practices.

WCS's was interested to maintain the ecological integrity and full complement of biodiversity across the extraordinary Grand Chaco landscape. CABI's principal interest in conservation was to pre-empt occupation of its homeland by others who were poor stewards. Therefore, WCS and CABI shared a common interest to conserve the landscape. CABI had its indigenous strength of

culture and some political mandate, whereas WCS had notable conservation capacity and international standing. The parties found greater strength to accomplish their goals through a natural alliance for conservation.

In 1995, CABI petitioned the Government of Bolivia for establishment of a National Park in its traditional territory. WCS provided CABI with technical support to prepare the proposal and assisted in shepherding the proposal through the government's review process. By Presidential decree, the government created an enormous park called Kaa-Iya del Gran Chaco National Park that encompassed 13,438 mi² (34,400 km²) – about 4 times the size of Yellowstone National Park. This is the largest protected area in Bolivia, with the largest area of dry tropical forest under protection in the world. It is the only national park in the Americas resulting from the initiative of a Native American people. CABI was named co-administrator of the Park, the first instance of a Native American group to share governance.

CABI also played a leading role in Bolivia's indigenous movement to secure the recognition of the territorial rights of native peoples. This led to the government embracing the legal concept of indigenous territory in Bolivia's new agrarian reform law. CABI presented a claim for 7,422 mi² (19,000 km²) of land bordering the Park as indigenous communal land belonging to the Isoso. Since 2000, much of this area has been titled to the CABI.

Following these impressive political achievements, WCS helped CABI meet the technical and administrative challenges of managing these lands by: (1) strengthening CABI's technical and administrative capacities, (2) conducting participatory wildlife population and ecology research and co-defining appropriate wildlife management practices, (3) land use planning and environmental monitoring, and (4) designing and implementing a permanent environmental education program (Noss and Painter 2004).

CABI and WCS also worked together to ameliorate threats to the Park and the broader Grand Chaco region. With WCS support, CABI led indigenous organizations in negotiating an agreement regarding construction of a gas pipeline that borders the National Park. CABI demonstrated that they had a combination of empirical local knowledge, technical skills, and political weight that made it in the interest of the pipeline sponsors to build an effective partnership with them. The pipeline sponsors provided \$1 million to capitalize a private trust fund as a permanent source of revenue to support the National Park. WCS and CABI worked together to design the organizational structure of the Kaa-Iya Foundation, a non-profit corporation that owns and administers the trust fund.

In this case study from the Bolivian Chaco, indigenous people and a conservation group recognized that they had differing perspectives and interests but found mutual overlap to forge a strong alliance (Brosius and Russell 2003). While WCS supported the efforts of indigenous organizations to secure justice, it remains a conservation organization. It realized that supporting CABI's land-based aspirations offered the best hope for conserving the last large area of the Gran Chaco. CABI embraced environmental conservation to improve the quality of life of the Isoceños and their political identity. Of course, it sought greater access to health care and education, more employment, and better working conditions, too.

In concluding their experiences with CABI in the Bolivian Chaco, WCS conservationists wrote (Redford and Painter 2006):

“The two groups recognized that their interests converged around a land-based conservation strategy ... keeping the forest as forest, rather than have it converted to soybean fields or degraded through mining. In their struggle to conserve both a healthy natural world and healthy human society, they found each other as natural allies. They learned not to gloss over their few differences but to weave them into the fabric of agreement. In fact, explicit recognition of where their respective interests do – and do not – overlap contributed to a relationship of trust.”

“We are now trying to save from the juggernaut of modern civilization not only the Amazon forests, but also ancestral homelands and cultural sites and practices. We are both attempting to valorize natural and cultural communities that have historically been disregarded, destroyed, subjugated, and in other ways denied standing. We must find and strengthen alliances wherever we can before much of what we value is destroyed.”

Canada: Conservancies in British Columbia – a New Relationship with First Nations

Rolf Hicker



Like Indigenous people across the world, First Nation peoples in Canada have struggled for recognition of their Aboriginal rights, title and interests. In 1973, a landmark court case (*Calder v. Attorney General of British Columbia*) ruled in favor of First Nation rights and original title. In the aftermath of the *Calder* ruling, the Canadian constitution was revised in 1982 to “recognize and affirm” Aboriginal and treaty rights in Canada (*Constitution Act 1982*). Subsequent landmark decisions by the Supreme Court of Canada (e.g., the *Delgamuukw* case in 1997) upheld the legally constituted existence of Aboriginal rights, thereby transforming the historical power dynamic between First Nations and federal and provincial governments. These governments now had the legal duty to consult meaningfully with First Nations on land and resource use decisions affecting native peoples and their territories (Dearden and Rollins 2009, Low and Shaw 2011).

For many of the First Nations in the Province of British Columbia (BC), their traditional territories remain un-ceded either historically or under modern day treaties. Aboriginal rights, title, and interests in the province have not been reconciled with the rights, title, and interests of the Crown. Some observers maintain that – until recently – the BC government has rarely chosen to recognize these rights (Dearden and Rollins 2009).

Meanwhile, during the 1980s and 1990s, extensive clear-cut logging of ancient rainforests along the Pacific coast of BC had generated intense conflict between industry, government, First Nations, and environmentalists over the destruction of natural and cultural values. The continuing strain of these conflicts prompted the BC government to seek a “new relationship” with First Nations in their traditional territories (Low and Shaw 2011). First Nations wanted a protected-area designation that recognized Aboriginal rights for traditional uses and cultural values, while allowing for some small-scale local economic enterprise. Conservationists called for ecological protection of the

world-class biological diversity in these temperate rainforests to take precedence over industrial and recreational developments. All concurred that a new kind of protected-area designation was needed (Turning Point 2009, BC 2011).

With these issues and concerns as a guide, in 2006 the Government of British Columbia established *Conservancies* as a new designation of protected area within the BC Parks system. It was the first and only provincial-level designation in Canada to explicitly incorporate First Nations' interests into its legal framework for Protected Areas. This new designation heralded a dramatic shift in relationships between First Nations and the Provincial government.

Four principal pillars/objectives comprise the foundation of the Conservancy designation:

1. protect and maintain biological diversity and natural environments;
2. preserve and maintain social, ceremonial and cultural uses of First Nations;
3. protect and maintain recreational values; and
4. ensure that any development or use of the natural resources occurs in a sustainable manner, consistent with the first three purposes.

The new policy intends that these four purposes complement each other – with each given equal priority in the management of conservancy areas.

Conservancies differ uniquely from other Protected Area designations in two key policy features. First, they explicitly recognize First Nations' social, cultural and ceremonial uses within the protected area. Secondly, commercial logging, mining, or commercial hydro-electricity is prohibited. Local First Nations (and others) may pursue a wide diversity of low-impact economic enterprises – so long as these do not impact biological diversity, natural environments, First Nations cultural values and practices, and recreation. Examples of permissible economic activities include wildlife viewing, guided hiking and fishing, and small-scale run-of-the-river hydro projects for local needs.

Moreover, local First Nations initially identify the areas for Conservancy designation within their traditional territories. Along with the provincial government, the local First Nation community also develops management plans for each conservancy tailored to local environmental conditions. Many First Nations are negotiating 'Collaborative Management Agreements' with the Ministry of Environment to establish a collaborative approach to decision-making and management of conservancies. These agreements are intended to establish a working relationship, improve communication, and promote the collaborative management of conservancies (Turner and Bitonti 2011). Many of the First Nations of coastal BC believe that such conservancies will help protect their historic cultural features, on-going traditional practices, and specific places on the land where there is significant oral history, knowledge and stories (Turning Point 2009).

The new Conservancy designation has been widely implemented since its inception in 2006. As of July 2014, 156 conservancies covering 7,406,312 acres (2,998,507 ha) have been designated in British Columbia to be managed in collaboration with over 30 First Nations (<http://www.env.gov.bc.ca/bcparks/>

aboutBCParks/prk_desig.html). These vary in size from small but intact islands to larger islands and mainland areas, with an average of 47,476 acres. Some 20 Conservancy Management Plans (CMPs) have been formally accepted by both the Province and participating First Nation.

Moksgm'ol/Chapple-Cornwall Conservancy, located in the Great Bear Rainforest, illustrates the four interlocking purposes and uses of a conservancy (BC 2010, Turner and Bitonti 2011). Designated in 2006, it covers 71,917 acres (29,116 ha) of Princess Royal Island within the traditional territories of the Gitga'at and Gitxaala First Nations. This Conservancy provides protection for a vast tract of ancient coastal rainforest, as well as for lakes, rivers, and intertidal zones. It is the home of the unique Kermode or Spirit Bear (white ecotype of black bear that is sacred to coastal First Nations), grizzly bears, bald eagles and several species of salmon. This homeland is of major cultural significance and has been used by local First Nations for millennia. It encompasses many areas important for harvesting, fishing and other traditional uses, as well as numerous archaeological sites now protected. Guided wildlife viewing, guided fishing, and other ecotourism activities are some of the economic ventures being pursued. The Gitga'at are part of this regional tourism economy, through their own tourism operations and seasonal employment at other lodges. Moksgm'ol/Chapple-Cornwall adjoins the Kitsoo Spirit Bear Conservancy and lies near 5 other conservancies within the Gitga'at territory. Thus, it serves to safeguard the larger landscape.

At the outset, conservancies were praised as a break-through model to protect ecological diversity, respect and accommodate First Nation's culture and traditional practices, enable collaborative management, and allow for sustainable resource development. How well has this new model of protection for both ecological and cultural values worked thus far?

Stronghill (2013) concluded that conservancies have largely or partially met various international standards for the governance of protected areas involving Indigenous peoples. On paper at least, conservancies incorporate the rights and interests of First Nations while preserving biodiversity and natural landscapes. While ultimate decision-making authority and financial responsibility for conservancy management still lies with the Province, agreements have recognized First Nations as governments and empowered them with a role in protecting areas important to them (Bird 2011). Even within a collaborative framework, First Nations may not always have the capacity or resources to fully participate in management of conservancies. In several collaborative agreements, the Government of B.C. has committed to provide funding for 3-5 years initially to offset expenses for meetings, retain technical consultants and/or administrative support in the development of Conservancy Management Plans, and initiate conservation and cultural heritage projects within conservancies.

First Nations have been successful in new, local economic ventures that provide local jobs; business plans to identify potential economic opportunities could be helpful. As new opportunities for larger developments present themselves, however, there have also been inevitable conflicts due to the constraints under the legislation on impacts to the other values (Turner and Bitonti 2011).

In the face of tempting development pressure, the ultimate capability of conservancies to preserve biodiversity and ecological integrity remains to be seen (Stronghill 2013).

The Conservancy model has enabled a break-through in the logjam of controversy and divisiveness, thereby facilitating a remarkable expansion of BC protected area system within a very short period of time. This has preserved the unique ecology of many ancient rainforests along the coast of BC. The collaborative management of conservancies may also leverage continued protection going forward, as both governments are invested in a positive outcome and have pledged to uphold the mandate of the conservancies (Turner and Bitonti 2011).

Lessons Learned for Successful Co-Management

Several scholarly books and papers have examined the constructs and practice of co-management across the world (Stevens 1997, Taiepa et al. 1997, Wondolleck and Yaffee 2000, Tsuji and Ho 2002, Borrini-Feyerabend et al. 2004, Carlsson 2005, Armitage et al. 2007, Redford and Fearn 2007, Mills 2009, Plummer et al. 2012, Bauman et al. 2013). From this ‘community of practice’, I have distilled some of the real keys to successful co-management.

- ✓ *Understand the legal basis for rights and management authority:* From a strong base of affirmed legal rights and cultural pride, indigenous people around the world are reaching for more meaningful participation in the stewardship of ancestral lands and resources. Most of these lands, though, have been settled by majority cultures for more than a century. Now there are multiple voices speaking for management of these lands and resources. Court rulings or new legislation have clarified the rights, ownership, and scope of decision-making of both indigenous and majority parties concerning focal lands. To avoid erroneous assumptions and misunderstandings, it’s crucial for respective parties and general public to understand the legal basis and scope of management authority applicable at the time and specific jurisdiction. In many cases, co-management has been a way of achieving a common purpose of land protection while bridging diverse perspectives and interests. Co-management frameworks should align legally with pertinent treaties, Constitutional and Indigenous law, and Federal administrative policy. In some circumstances, devising new co-management frameworks and innovative protective designations may break open long-standing stalemates and facilitate conservation of important values and places.

- ✓ *Be alert to the sociological tension of new societal arrangements for co-management and embrace the benefits of diverse perspectives:* Co-management involving Indigenous and Euro-American people necessarily brings together different world views, societal norms and practices, and ways of gaining knowledge. There may be resistance and resentment to changing the status quo. Cultural-awareness

training that addresses both perspectives may help to engender respect and tolerance. An inclusive and constructive mindset would respect the legitimacy and strengths of each perspective (for example, Traditional Ecological Knowledge and western science) and welcome fresh approaches. Taking advantage of such diverse perspectives may enhance problem-solving ability and perhaps result in greater resiliency to changing environmental conditions. It may be important to explain the impetus and benefits of co-management to the general public, who may be apprehensive about unfamiliar management and degree of participation.

- ✓ ***Develop a shared vision and goals for protection of natural and cultural values:*** Each party will have different interests and constituencies as they enter the co-management arena. Some of these interests may clash, but many will be held in common. Industrial developments and activities can impact both ecological and cultural values; hence, there is much common ground to join in a natural alliance to preserve these important values. The challenge is to discover and articulate a shared vision and goals of protecting ecosystem integrity and indigenous rights and cultural heritage.
- ✓ ***Negotiate equitable roles in decision-making:*** The national government and indigenous people will have different legal standing and constraints as they engage in co-management. The statutory agency, for example, may have a legal mandate and responsibility to manage and protect natural resources for all citizens. It is essential that the parties negotiate a meaningful and equitable role in decisions beyond advisory. Yet, equity does not mean equality ... the sharing of decision authority of the institutional actors can be aligned to the extent of their legal standing or rights. Moreover, it can be anticipated that such negotiation may be contentious due to institutional and individual fear and resistance to losing power/ or not being respected. Skilled facilitation may be critical in helping the parties through the process of building a respectful co-management framework to accomplish their shared vision and goals.
- ✓ ***Build an adaptive structure... and really nurture the relationships:*** No one kind of co-management structure fits all because history, laws, and indigenous capacities and aspirations will vary. The form of co-management framework should be tailored to fit the unique needs and opportunities of each context. And the context is unlikely to remain static ... external conditions may change and learning-by-doing may spark new insights and opportunities. Rigid frameworks can become obstructive to agile management, and successful co-management is adaptive.

But the most consistent and pervasive message emerging from co-management experiences across the world is this: success depends much more upon positive relationships than on ideal structural arrangements.

The key is the commitment, attitudes and capabilities of individuals as team members – both indigenous and non-indigenous – to the common enterprise. The most elaborate administrative structures and legal arrangements can be totally undermined by ‘bad blood’ in relationships. Conversely, a spirit of trust and goodwill can promote success in spite of any shortcomings in management structures or the inevitable conflicts that will arise and need to be managed (if not resolved).

- ✓ *Start smart by taking a progressive path to success:* Full-on co-management may not be for everyone – at least not in the beginning. It can be a difficult process to move beyond historical events, deal with entrenched attitudes and differing perspectives, and contain the transaction costs of more meetings and paperwork. In some cases, indigenous groups have concluded that the trade-offs are not worthwhile – especially if adequate investment in capacity-building (training, funding or equipment) has not been supported.

Some thoughtful observers offer the counsel of starting small and taking progressive steps toward fuller co-management. Such an approach can provide both parties with time and opportunity to build and strengthen relationships and gain better understandings of each other’s values and priorities. Moreover, it may provide a record of success whereby the public gains confidence in the new management arrangement. Co-management for smaller areas or for a smaller subset of management responsibilities can be a smart way to start the new venture.

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5. LEGAL CONTEXT FOR A NATIVE AMERICAN ROLE IN STEWARDSHIP ON USDA FOREST SERVICE LANDS

The selected case studies involving Indigenous people and other governments around the world yielded valuable insights and principles for successful practice of innovative arrangements for co-management. Nonetheless, any framework for joint management between the Blackfoot Tribe and the Lewis and Clark National Forest must adhere to the legal context of the United States. Accordingly, in this chapter, I examined several dimensions of that context. I begin with the most influential court cases addressing interpretation of historic treaties/agreements with Indians – particularly in regard to rights reserved off-reservation. Next, I discuss federal Indian law passed by Congress, as well as Executive Orders on Indian policy issued by different Presidents. I examine the latest policy of the USDA Forest Service on relationships with Tribal governments and provide examples of collaborations with tribes on Forest Service lands across the country. The cumulative weight of the legal and policy context substantiates a strong and important role for the Blackfoot Tribe in stewardship of the Badger-Two Medicine area.

Treaty/Agreement Rights and Court Cases

The Agreement of 1895-96

The Agreement of 1895-96 between the Blackfoot Tribe and the United States is a crucial document for understanding the legal context for the Badger-Two Medicine area to this day. In Article I of the Agreement, Indians of the Blackfoot Reservation

“hereby convey, relinquish, and release to the United States all their right, title, and interest in and to that portion of their present reservation ...[as described, including the Badger-Two Medicine]”

However, the Blackfeet reserved several specific rights to exercise on these ‘ceded lands’:

“*Provided*, That said Indians shall have, and do hereby reserve to themselves, the right to go upon any portion of the lands hereby conveyed so long as the same shall remain public lands of the United States, and to cut and remove there from wood and timber for agency and school purposes, and for their personal uses for houses, fences, and all other domestic purposes: *And provided further*, That the said Indians hereby reserve and retain the right to hunt upon said lands and to fish in the streams thereof so long as the same shall remain public lands of the United States under and in accordance with the provisions of the game and fish laws of the State of Montana.”

Thus, although the Blackfeet Tribe ceded all rights and title to the western portion of their reservation, they reserved several specific rights in the ‘ceded’ area. These reserved rights included hunting, fishing, and cutting timber for administrative and domestic uses. Treaties and ratified agreements are legally binding agreements between two or more sovereign governments, and numerous court cases have upheld tribal exercise of such kinds of reserved *off-reservation* rights (Goodman 2000) – including the specific ceded lands of the Badger-Two Medicine (*United States v. Kipp* 1974).

Judicial Interpretation of Indian Treaties/Agreements

The United States has a long history of treating tribes as independent, sovereign nations through a government-to-government treaty-making process. The recognition of native sovereignty had its foundation in three Supreme Court opinions authored by Chief Justice John Marshall (commonly known as the “Marshall Trilogy”): *Johnson v. M’Intosh* (1823), *Cherokee Nation v. Georgia* (1831) and especially *Worcester v. Georgia* (1832) (Goodman 2000). Marshall opined that tribes had rights based on their original and indigenous sovereignty. In the 1831 ruling, Marshall commented rather paternalistically that tribes were “domestic dependent nations” ... whose “relation to the United States resembles that of a ward to his guardian.” But in the 1832 decision, Marshall recognized the autonomy of tribes within a sovereign trust framework, which in the words of Indian law scholar Mary Woods “provides an appropriate wellspring for the common law trust duty [of the United States] towards tribes” (Wood 2003).

This sovereignty was inherent in the tribes – not a power granted or delegated by the United States. Sovereignty of tribes has become a bedrock doctrine of federal Indian law. Although treaty-making with the United States resulted in the loss of some attributes of sovereignty and rights, tribes fully retained those powers that had not been lost.

In 1855, Commissioner Issac Stevens negotiated several treaties with various tribes across the northwest United States, including with the ‘Flathead’ (Salish-Pend d’Oreille-Kootenai), Nez Perce, and Yakama tribes. Each of these treaties had identical language reserving specific rights, as follows:

“The exclusive right of taking fish in all the streams running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places, in common with citizens of the Territory, and of erecting temporary buildings for curing; together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.”

That all these tribes negotiated to keep such rights suggest that these activities were vital to their well-being and they expected these rights to be protected (Wilkinson 1997).

In 1905, the United States Supreme Court handed down an oft-cited case (*United States v. Winans* 1905) that has become the cornerstone for recognition and protection of off-reservation reserved rights to hunt and fish. In *Winans*, the question was whether Yakama tribal members could exercise their right under the 1855 treaty to fish at traditional off-reservation fishing sites within their traditional territory that had since been transferred to homesteaders by federal patents (Wilkinson 1997).

The Supreme Court ruled in favor of the Yakama Nation. The Court articulated a principle of Indian treaty interpretation that has shaped the course of Indian law ever since: Indian treaties did not involve a grant of rights *from* the United States *to* the Indians, but were rather a grant *from* the Indians.

“[T]he treaty was not a grant of rights to the Indians, but a grant of right from them - a reservation of those not granted. The right to resort to the fishing places in controversy was a part of larger rights possessed by the Indians, upon the exercise of which there was not a shadow of impediment, and which were not much less necessary to the existence of the Indians than the atmosphere they breathed.”

Furthermore, the Court held that the right reserved through the 1855 treaty was more than a right of equal access to the fishery with non-Indians. The Court made it clear that such off-reservation rights are real property rights which attain to the property thereafter: “These reserved rights imposed a servitude upon every piece of land as though described.”

Thus, the *Winans* case established two foundational principles upon which treaties and agreements with Indian tribes would henceforth be interpreted (Wilkinson 1997, Goodman 2000):

- (1) A treaty must be interpreted as the Indians who had agreed to the treaty would have understood it. Any ambiguities in the treaties should be resolved in favor of the Indians. These ‘canons of treaty construction’ are meant to ensure a fair and sympathetic reading of the treaties from the Indians’ perspective. Subsequent cases have affirmed that terms of treaties are to be interpreted “in the sense in which naturally the Indians would understand them” (*United States v. Shoshone Tribe* 1938).
- (2) Second, treaties are not rights granted to the Indians, but rather “a reservation by the Indians of rights already possessed and not granted away by them” (known as the ‘Reserved Rights Doctrine’). Courts

have applied the *Winans* rule consistently to conclude that tribes reserved substantial usufructuary (common-use) rights on public lands off-reservation (Lac Courte Oreilles Band of Lake Superior Chippewa Indians *v.* Wisconsin 1987).

The Supreme Court subsequently held that these principles of construction apply whether the instrument reserving the rights was a treaty, executive order, congressional act, or other legal instrument reflecting an agreement between a tribe and the United States (*Antoine v. Washington* 1975).

But as various human industrial activities (e.g., mining, extraction of oil and gas, and large clearcuts of timber) spread across the land, tribes watched the degradation of the environment and resources underpinning their treaty right to hunt and fish and gather. Tribes contended that excessive harvests and habitat degradation were adversely affecting their ability to exercise hunting and fishing rights reserved by treaty due to the following chain-of-logic (Blumm and Swift 1998, Goodman 2000): in order to exercise reserved rights for hunting and fishing ... there must be fish and wildlife populations of harvestable numbers ... which, in turn, requires adequate habitat to sustain the population. In the famous words of one judge: “The most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken” (*United States v. Washington* 1980). Thus, there was a trinity of rights implicit in treaty clause – a right of access to hunt and fish, a right to a fair share of the harvest, and a right to habitat protection (Lewis 2002). Other law scholars have argued that the trust obligation of the United States should also have application to protection lands and waters relevant to reserved rights in treaties (Wood 2003).

In a landmark case in 1974, the Supreme Court upheld a ruling by District Judge Boldt that treaty-based fishing rights of tribes in Washington included a right to equal share harvest up to one-half the available salmon harvest, subject to conservation needs (*United States v. Washington* 1974). But Judge Boldt deferred ruling on the tribal assertion that their ‘right of taking fish’ included the right to protection of salmon habitat. Subsequently, in 1983, the Ninth Circuit Court panel ruled that the issue of habitat protection should be adjudicated based upon concrete facts which underlie a dispute in a particular case.

Several federal courts have addressed the issue of habitat protection in the context of fishing and hunting rights off-reservation as reserved by tribes. Tribes have claimed in-stream flows sufficient to ensure adequate habitat for fish – especially during mid-summer or drought conditions. For example, in the 1983 *Adair* decision, the Ninth Circuit held that the Klamath Tribes had a reserved water right to sufficient in-stream flow to provide aquatic habitat to support the tribes’ reserved fishing rights (*United States v. Adair* 1983). Interestingly, even though the tribes’ reservation lands had been transferred previously to US Forest Service ownership, the court recognized their right to protection of habitat off-reservation (Blumm and Swift 1998).

The same principles that underlie the protection of off-reservation fishery habitat logically should apply to hunting rights and wildlife habitat, too. In 1996, the Klamath Tribes sued the Forest Service to enjoin eight timber sales on the Tribes’ former reservation. The tribes alleged that the timber sales would

destroy mule deer habitat and thus adversely affect mule deer populations, a species upon which tribal members relied. In an unpublished decision, the Federal District Court for Oregon granted the Tribes' motion to enjoin seven of the eight sales (*Klamath Tribes v. United States* 1996). The court held that the Forest Service had failed to adequately incorporate the Tribes' input into the decisions authorizing these sales. It prohibited the agency from proceeding with logging that affects the "wildlife resources within the Tribes' former reservation, without ensuring, in consultation with the Klamath Tribes on a government-to-government basis, that the resources on which the Tribes' treaty rights depend will be protected to the fullest extent possible." The court noted that the Forest Service – as an agency of the United States government – had both a fiduciary obligation to protect reserved resources and a trust responsibility to consult with the Tribes. Subsequently, the Forest Service set up a Memorandum of Agreement with the Klamath Tribes by which the Klamath Tribes would play a greater role in decision-making regarding former reservation lands on which the Tribes retain the reserved right to hunt, fish, and gather (Goodman 2000, Nie 2008).

A court case in 2007 marked the first time a judge squarely addressed the question of whether habitat is protected by treaty fishing rights based upon the particular facts of a specific situation (Blumm and Steadman 2009). The *Martinez* case (*United States v. Washington* 2007) centered on the impacts of poorly designed/ installed culverts under roads that impede access of salmon to spawning and rearing habitat in the state of Washington. The number of salmon not available for harvest could be estimated based upon the miles of spawning streams where fish access through flawed culverts was blocked. Judge Martinez crafted a narrow declaratory judgment:

“The Court hereby declares that the right of taking fish, secured to the Tribes in the Stevens Treaties, imposes a duty upon the State to refrain from building or operating culverts under State-maintained roads that hinder fish passage and thereby diminish the number of fish that would otherwise be available for Tribal harvest.”

Thus, the *Martinez Decision* affirmed the notion that a corollary right to habitat protection is incorporated within the treaty right of taking fish. Importantly, the judge confined the ruling to a demonstrable and significant impact to a critical habitat (spawning streams) of salmon populations rather than a broad, open-ended 'environmental servitude'. In March 2013, the district court ordered the state of Washington to provide fish passage at several hundred sites over time. This decision is still winding its way through appeals and the exact scope of the habitat right remains undefined. If the *Martinez Decision* survives appeal, it will become significant to the issue of habitat protection for off-reservation rights reserved in treaties/agreements (Blumm and Steadman 2009, M. Blumm, *personal communication*).

Federal Indian Law

Congress has passed several laws over the 50 years to protect the rights of tribes and create a legal framework for collaboration. Here is a brief synopsis of the key Acts presented in chronological order.

National Historic Preservation Act (NHPA) of 1966 – NHPA is the basic charter and method of historic preservation in the United States (see Chapter 3). In the statute, Congress declared that “It shall be the policy of the Federal Government ... in partnership with the States, local governments, Indian tribes ... to administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations.” The Act authorizes the Secretary of Interior to maintain a National Register of Historic Places. All of the Badger-Two Medicine (excluding private lands) has been determined officially as eligible for listing as a *Traditional Cultural District* under the National Historic Preservation Act. This eligibility requires the federal agency to consult “with any Indian tribe that attaches religious and cultural significance” to an historic property that would be affected by a proposed federal undertaking. Furthermore, the agency must “take into account” the effect a project may have on historic properties and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

American Indian Religious Freedom Act of 1978 – AIRFA was enacted to protect and preserve the traditional religious rights and cultural practices of Indians – including access to sacred sites, freedom to worship through ceremonial and traditional rights, and use and possession of objects considered sacred. Though symbolically important, the law is largely unenforceable and ineffective for its purpose. It contravenes the ‘Establishment Clause’ in the first amendment to the U.S. Constitution which stated that “Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof”. The Supreme Court has held that the Government must “pursue a course of neutrality toward religion, favoring neither one religion over others nor religious believers over nonbelievers.”

Accommodation of particular religious practices and protection of sacred sites, however, is permissible – particularly if the Government action also serves a secular purpose and does not result in ‘excessive Government entanglement’ with religion (see *Lemon v. Kurtzman* 1971). Several studies have examined laws and regulations regarding Indian religious and cultural activities on public lands (e.g., Zelmer 2002). The essential conclusion is that federal land managers are well within their authority when they base protection of Native American cultural practices and sites upon the cultural or secular value of the property, rather than its religious value (Bluemel 2005).

An example of U.S. Forest Service management discretion occurred in the Badger-Two Medicine. In 1997, the Lewis and Clark National Forest Supervisor decided not to lease areas along the Rocky Mountain Front for oil & gas development on the basis of environmental laws and a “value of place” articulated by the Blackfeet Tribe and in public comments (Grimm 1997). Upon challenge, the Ninth Circuit court upheld that the no-lease decision had a *secular* purpose and did not advance or endorse religious beliefs nor foster excessive entanglement with religion. Moreover, the court ruled an accommodation of religious practices by government would be consistent with the Establishment Clause of the U.S. Constitution (*Rocky Mountain Oil & Gas Ass’n v. U.S. Forest Service* 2001).

Archeological Resources Protection Act of 1979 – ARPA requires notice to and consultation with tribes concerning permits issued on federal lands for the excavation of archaeological sites that may be of cultural or religious significance to an Indian tribe. The implementing regulations for ARPA contain specific provisions requiring substantial tribal participation in granting permits and imposing conditions on such permits (Goodman 2000).

Native American Grave Protection and Repatriation Act of 1990 – NAGPRA is the primary federal law that enables the repatriation of Native American remains and objects with particular cultural significance. It expressly affirms a tribal role as sovereigns in making decisions regarding ownership and disposition of aboriginal remains and associated cultural objects found on off-reservation lands. NAGPRA grew out of a concerted effort by Indian tribes to recover human remains of affiliated deceased ones in possession of various governmental agencies, museums, and educational institutions. According to Trope and Echo-Hawk (1992), legal rationale for the decision-making and ownership authority set out in NAGPRA is derived in part from existing federal Indian law doctrine – including inherent tribal sovereignty and the canons of Indian treaty construction.

Tribal Self-Governance Act of 1994 – The TSGA is cited as an example of co-management because it authorizes agencies within the Department of the Interior to delegate functions that are not “inherently federal” to participating tribes. Tribes can petition bureaus within the Interior Department to manage federal programs that are of “special geographical, historical, or cultural significance” to the tribe. A local example involves the petition by the Confederated Salish and Kootenai Tribes (CSKT) to manage certain programs on the National Bison Range, a federal wildlife refuge located within the boundaries of the Flathead Indian Reservation and managed by the U.S. Fish & Wildlife Service.

The “inherently federal” provision has been subject to some debate regarding the constitutional issue of delegating powers to non-federal agencies (Nie 2008). The Solicitor for Interior Department concluded such limitations on del-

egation “are relaxed where the delegation is to a tribe in an area where the tribe exercises sovereign authority” (based upon *United States v. Mazurie* 1975). He noted that while *Mazurie* concerned congressional delegation to tribes, it has also been relied upon to support executive branch delegations of a governmental function to a tribe.

Note: While the Tribal Self-Governance Act does not apply to the Forest Service in the U.S. Department of Agriculture (King 2007), it nonetheless demonstrates an interest by Congress in facilitating self-determination of tribes in areas of significance to tribes (seemingly, ceded areas where tribes reserved rights suggest a logical extension of TSGA to National Forest lands).

Tribal Forest Protection Act of 2004 – TFPA was passed in 2004 in response to devastating wildfires that crossed from Federal lands onto Tribal lands the prior summer. It seeks to protect tribal forest assets by authorizing tribes to enter into agreements and contracts with the U.S. Forest Service to reduce threats to tribal lands posed by fire on federal land. The law requires tribal proposals to focus on Forest Service land that (1) borders tribal land, (2) poses a fire, disease, or other threat to Indian trust land or community or is in need of restoration, and (3) involves a “feature or circumstance unique to that Indian tribe (including treaty rights or biological, archeological, historical, or cultural circumstances)”. The Forest Service utilizes stewardship contracts for reducing hazardous fuels, restoring forest and rangeland health and water quality, improving fish and wildlife habitat, and re-establishing native plant species.

To summarize: These various laws underscore Congress’ continuing commitment to ensuring a tribal role in decision-making and management concerning resources of critical importance to the tribes. They indicate strong Congressional support for the exercise of tribal sovereign authority concerning matters, persons, and property of tribal significance beyond tribal reservations (Goodman 2000).

Presidential Executive Orders

Over the past 30 years, Presidents of both parties have issued Executive Orders to strengthen and protect Indian tribal sovereignty. In the main, these orders have focused on procedural obligations of federal agencies to consult in meaningful fashion with tribal governments on pertinent issues. Here, I highlight recent Executive Orders relevant to Indian policy (in chronological order).

Executive Order 12401 – Promulgated in 1983 (48 Fed. Reg. 2309 - January 14, 1983) by President Reagan. This order established the Presidential Commission on Indian Reservation Economies. Key principles embodied in this order were (1) the government-to-government relationship between tribes and the United States, and (2) the established Federal policy of [tribal] self-determination.

Executive Order 13007 – Promulgated in 1996 (61 Fed. Reg. 26,771 - May 24, 1996) by President Clinton. E.O. 13007 is entitled PROTECTION AND ACCOMMODATION OF ACCESS TO INDIAN SACRED SITES. It requires agencies responsible for federal lands “to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.”

This order is the clearest federal policy on sacred sites. A key feature of this definition is that it is Tribes who identify which sites are sacred to them, *not* the Federal Government. “Sacred sites” are defined rather narrowly “as any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe (or Indian representative) as sacred by virtue of its established religious significance or ceremonial use by an Indian religion. Provided, that the Tribe has informed the agency of the existence of such a site.”

Executive Order 13175 - Promulgated in 2000 (65 Fed. Reg. 67,249 - November 9, 2000) by President Clinton. E.O. 13175 is entitled CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS. The purpose of this order was to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications and to strengthen the United States government-to-government relationships with Indian tribes. Notably, it began with this preamble:

“The United States has a unique legal relationship with Indian tribal governments as set forth in the Constitution of the United States, treaties, statutes, Executive Orders, and court decisions. Since the formation of the Union, the United States has recognized Indian tribes as domestic dependent nations under its protection. The Federal Government has enacted numerous statutes and promulgated numerous regulations that establish and define a trust relationship with Indian tribes.”

The Executive Order directed that federal agencies “shall respect Indian tribal self-government and sovereignty, honor tribal treaty and other rights, and strive to meet the responsibilities that arise from the unique legal relationship between the Federal Government and Indian tribal governments.” In January 2013, the USDA incorporated this directive into its regulations, and uniform standards have been proposed to promote meaningful consultation (Eitner 2013).

Executive Order 13647 - Promulgated in 2013 (65 Fed. Reg. - June 26, 2013) by President Obama. E.O. 13647 is entitled ESTABLISHING THE WHITE HOUSE COUNCIL ON NATIVE AMERICAN AFFAIRS. It established a White House Council comprised of various Departments and agencies to improve coordination of Federal programs and the use of resources available to tribal communities. Interestingly, it contained a preamble almost identical to the Clinton Executive Order 13175 in 2000.

USDA Forest Service Policy and Collaborations with Tribes

Numerous court cases on Treaty rights, several laws passed by Congress, and executive orders by different Presidents have recognized (1) inherent sovereignty of Tribes, (2) certain reserved rights to use off-reservation resources, (3) a mandate for meaningful consultation on a government-to-government basis, and (4) a trust obligation of the United States for Tribal interests, which should be viewed as a compact between nations stemming from historic treaties and agreements rather than in a paternalistic manner (Tsosie 2003).

The USDA Forest Service ('Forest Service') is charged with managing the National Forest System across the United States for a multiplicity of values and uses for all citizens – including lands and resources that are of historical and cultural significance to many American Indian tribes. According to the Forest Service, it “recognizes the importance of a meaningful tribal relations program to preserve cultural and spiritual significance to American Indian tribes, while also promoting sustainable resource management for United States citizens.” In recent years, the Forest Service has developed progressive policies regarding tribal relations and engaged in numerous collaborations across the country.

Office of Tribal Relations

In 2004, the Forest Service established an Office of Tribal Relations (OTR) within its State and Private Forestry division. The Tribal Relations Program endorses nine core values for fulfilling agency treaty and trust obligations (<http://www.fs.fed.us/spf/tribalrelations>):

- recognize the inherent sovereign status and reserved rights of tribes,
- honor the federal trust responsibility,
- excel at conducting substantive consultative processes,
- support tribal rights to pursue vitality of their tribal cultures, economies, and land,
- promote collaborative natural and cultural resource management,
- use traditional knowledge in combination with the best western science and technology,
- advance American Indians and Alaska Natives in the workforce,
- respect tribal connections to traditional landscapes, and
- seek to enhance and maintain important relationships with tribes and communities.

New Forest Service Policy on Sacred Lands

At the request of the Secretary of Agriculture, a team of senior executives in the USDA Forest Service engaged in dialogue with American Indian and Alaska Native Tribal leaders during 2010-11. Their charge was to determine how the agency could do a “better job of accommodating and protecting American Indian sacred sites while simultaneously pursuing the Forest Service’s multiple-use mission”. In the report, the team noted: “Although laws, regulations, policies, and court decisions currently exist that enable land managers to protect sacred sites, we heard that the Forest Service does not always use its discretion under these authorities to do so” (USDA Forest Service 2012:28). It made several recommendations to: (1) provide awareness training on tribal relations and enhance consultation skills, (2) manage Forest Service lands of tribal importance to protect cultural resources in revisions of Forest Plans, and (3) increase protection of sacred sites and historic properties, accommodate cultural practices by Tribal members and encourage partnerships in land management.

The review team heard from the Indian community that the definition of sacred sites as “specific, discrete, narrowly delineated locations” of “religious significance” may be too narrow and inconsistent with the Native American view of sacredness. In response, the policy review suggested an additional and broader concept of “sacred places” – larger cultural landscapes that would include specific sacred sites at discrete locations. The Traditional Cultural District within the Badger-Two Medicine is consistent with this notion.

Forest Service Engagement with Tribes on National Forest Plans under New Planning Rule

Under the National Forest Management Act, National Forests develop Forest Plans that provide strategic management direction across the Forest. These Forest Plans are revised every 10-15 years. On April 9, 2012, the USDA published its final rule for land management planning in the *Federal Register* (Vol. 77, No.68, 21258). According to the Forest Service, this rule was developed following extensive consultation and collaboration with tribes. For example, in May 2010, the Forest Service initiated a National Tribal Conference Call (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5188541.pdf). The Forest Service heard many recommendations, including: “provide for tribal co-management of sacred sites” and “analyze the effects of any proposed federal action on the exercise and continued protection of tribes’ reserved treaty rights”. Tribal participants emphasized the importance of early ‘face-to-face’ communications between Forest Service staff and tribal representatives, especially elders. A designated contact person for both the agency and the tribe can facilitate efficient and successful communication. Of course, government-to-government consultation with elected tribal leaders must still occur.

Under this new rule, new or revised Forest Plans must provide for protection of cultural and historic resources and management of areas of Tribal importance. The new rule requires National Forests to:

- “work with federally recognized Indian Tribes, government-to-government, as provided in treaties and laws and consistent with Executive orders when developing, amending, or revising plans”;

- “consult with Federally Recognized Tribes to request information about native knowledge, land ethics, cultural issues, and sacred and culturally significant sites during consultation and opportunities for Tribal participation (Section 219.4 [a] [2-3]) ... consult early with Tribal governments and to work cooperatively with them where planning issues affect Tribal interests”;
- “identify and evaluate information about cultural conditions and cultural and historic resources and uses” (Section 219.6 [b]); **note:** tribal concerns about the confidentiality of sacred sites has been addressed through a provision in the 2008 farm bill (Public Law 110-234) that gives USDA Forest Service power to legally protect sensitive cultural information (i.e. exempt it from being subject to Freedom of Information Act requirements).
- “take cultural and historic resources and uses into account when designing plan components to guide contributions to social and economic sustainability” (Section 219.8); and
- “provide for protection of cultural and historic resources and management of areas of Tribal importance” (Section 219.10 [b] [1] [ii]).

A Forest Plan must seek to balance various issues related to management of Forest Service lands through an open process with all citizens (USDA Forest Service 2012). Revision of the Forest Plan for the Lewis and Clark National Forest provides a real strategic opportunity for the Blackfeet Tribal government to speak for protection of the Badger-Two Medicine as a Special Historic/Cultural Area or recommend it for Wilderness designation by Congress. Moreover, it is a process whereby the Tribe may articulate goals, standards and desired conditions that would help protect their reserved rights and cultural interests.

Forest Service Initiatives

In recent years, the Forest Service has taken dramatic strides toward improving relations with tribes. Here are a few examples gleaned from the agency’s latest report (USDA Forest Service 2013).

- ❖ *Educate Forest Service employees on Indian law and treaty rights:* The Forest Service has embedded education on tribal relations in the core training curricula for all employees. For instance, the Forest Service has made the “Working Successfully with Tribal Governments” training course available to all employees through the agency’s integrated online training module. In 2013, the Rocky Mountain Region hosted a 3-day workshop on federal Indian law, treaty rights, and religious freedoms. Prominent Indian scholars such as Walter Echo-Hawk provided background and guidance which raised awareness of tribal issues for employees.

- ❖ *Engage in substantive and meaningful consultation with Tribal governments:* In January 2013, USDA Secretary Vilsack signed a departmental regulation establishing guidance on consulting and coordinating with American Indian tribes. Presently, National Forests must consult with tribes where tribal rights are reserved by treaty, spiritual and cultural values and practices exist, public lands lie adjacent to tribal or trust lands, or tribal water rights may be affected (Donoghue et al. 2010). The Superior National Forest entered into a Memoranda of Understanding (MOU) with the Lake Superior Chippewa to ensure tribal exercise of usufructuary rights on the Forest. The Forest Supervisor joined the Tribal Chairmen at an annual meeting on the 1854 Treaty to sign an MOU acknowledging tribal treaty rights to use Superior National Forest campgrounds without fees.

- ❖ *Increase capacity of tribes to engage with Forest Service:* The Tribal Forest Protection Act (TFPA) provides American Indian tribes the opportunity to enter into stewardship contracts to protect tribal forest land bordering or adjacent to NFS Lands from encroachment of fires. A report in 2013, however, found that tribes often may be unable to engage in restoring neighboring NFS lands due to tribal staff and funding limitations. In conjunction with the Intertribal Timber Council and the Bureau of Indian Affairs, the Forest Service is taking steps to advance these opportunities.

- ❖ *Encourage integration of traditional knowledge, wisdom, and practices in Forest Service land management:* In Washington, elders of the Muckleshoot Indian Tribe expressed concerns for declining berry yields on the Mt. Baker-Snoqualmie National Forest. The Forest Service entered into a partnership with the Tribe to enhance the production of big huckleberries on the Snoqualmie Ranger District. In another example, the Karuk Tribe, the University of California-Berkeley, and Forest Service scientists began research in northern California on how traditional land management techniques impact the productivity and availability of traditional Karuk foods.

- ❖ *Advance opportunities for American Indians within the Forest Service workforce:* The Superior National Forest in Minnesota is developing a tribal internship program through outreach to recent graduates from high schools in the 1854 Ceded Territory with an interest in history and archaeology. In northern California, the Forest Service promoted environmental education, outreach, and recruitment of youth from the Mechoopda Maidu Indians. As part of the summer program, Maidu students participated in Youth Conservation Corps (YCC) programs on the Mendocino National Forest. The program includes two weeks of professional development and training followed by six weeks of project work. In Wisconsin, the Forest Service entered an MOU with the College of

the Menominee Nation to promote and facilitate interaction between students and various Forest Service programs and people in research, management, and interpretation. The President of the College said: “Dozens of students have benefitted academically from internships and other experiences brought to us by the Forest Service, and several have found career directions they might otherwise have not considered.”

The current contact for tribal matters in the Northern Region of the Forest Service (for the Lewis & Clark National Forest) is:

Cheryl Vanderburg
USDA Forest Service - Northern Region
Federal Building, 200 E. Broadway
Missoula, MT 59802
cvanderburg@fs.fed.us; O: (406) 329-3348

Forest Service Collaborations with Tribes on National Forests

In considering a tribal role in aspects of land management on National Forest lands, it is essential to recognize that the Forest Service cannot legally divest itself of its federal decision-making authority (Laitos et al. 2014). For example, the Forest Service must approve a natural resource management action (e.g., timber sale) or a revised Forest Plan through a ‘Record of Decision’ or ‘Decision Notice’ under the National Environmental Policy Act (NEPA). It must retain that authority and cannot delegate ‘inherently federal powers’ to any party. This is different than for other federal agencies, whereby the Tribal Self-Governance Act of 1994 (TSGA) permits tribes to petition land-management federal agencies to manage programs that are of “special geographical, historical, or cultural significance” to the tribe. Such delegation of authority, however, only extends to agencies in the Department of the Interior – and not to the Forest Service, which is in the Department of Agriculture. Congress, however, could authorize shared authority by the Forest Service through new legislation.

Nonetheless, the Forest Service can and has collaborated with tribes in various ways, while retaining its final decision-making power to conform to its legal charge (Comer 2004, Nie 2008, Donoghue et al. 2010, Keeney 2013). Collaborative projects involving the Forest Service and American Indian tribes have increased due to: 1) greater recognition of American Indian rights, institutionalization of consultation processes, and a general movement of Indian self-determination; and 2) benefits of collaborative approaches for cost-effective projects with more diverse viewpoints and access to different funding sources.

These tribal–federal collaborative arrangements vary considerably in structure and function (Donoghue et al. 2010). Shared management responsibilities have been appropriate in some cases, whereas other arrangements (e.g., contracts) can have certain legal provisions that tribes may find desirable. In these collaborations, the Tribes and Forest Service often negotiate a Memorandum of Agreement (MOA) or Memorandum of Understanding (MOU) on a government-to-government basis, which can provide important structure and validity to the effort. The number and extent of such collaborations between Tribes and the Forest Service have grown across the country in recent years; here are but a few examples (Donoghue et al. 2010, USDA Forest Service 2013).

- ❖ In northern California, the Forest Service entered into a pilot project in 1998 with the Maidu Cultural and Development Group. The project objective was to restore 2100 acres with significant cultural resources using Maidu traditional ecological knowledge and practices (USDA Forest Service 2004). The Maidu had authority to determine which stewardship practices would be implemented in the forest restoration project. Thus, the tribe and the Forest Service shared joint decision-making authority and implementation at a project level. This arrangement enabled the Maidu to demonstrate their abilities as natural resource managers while building cultural identity and pride (Donoghue et al. 2010).
- ❖ The Confederated Tribes of the Grand Ronde and the Forest Service worked together to manage 6,600 acres of the Siuslaw National Forest in Oregon. The Forest contracted the Tribes to survey for threatened and endangered species and to inventory forest stands for timber and downed woody debris. Under this contractual arrangement, the Forest Service provided funds for a tribe to conduct specified work, but retained ultimate decision-making authority.
- ❖ The Nez Perce Tribe has developed an exemplary fisheries management program for its aboriginal homeland which spanned more than 13 million acres across 6 National Forests in Idaho, Oregon, and Washington (Nez Perce Tribe 2013a). The Plan states that

Nimiipúu [Nez Perce] culture revolved around fish – especially salmon – and water. The Nimiipúu practiced sound fishery resource decision-making that resembles contemporary concepts or practices commonly associated with conservation and sustainability of a natural resource. This stewardship of the resource was upheld so that future generations would have the same opportunity to enjoy the natural resources and continue with the Nimiipúu way of life.

But salmon populations throughout the Nez Perce homeland declined due to dams, excessive harvests, and habitat degradation. The management plan articulates an overarching philosophy, which includes a statement of vision, management goals, and guiding principles that have cultural, biological, social and legal components. The plan also calls for full and equal natural resource co-management responsibility to support treaty-reserved fishing rights.

In Idaho, the Nez Perce Tribe and Nez Perce-Clearwater National Forest have developed a watershed restoration partnership that is significant in terms of its scope, inter-governmental relations, and achievements (Nez Perce Tribe and Nez Perce-Clearwater National Forest 2013b). The foundational agreement was part of Congressional legislation in 1994 (Public Law 94-148), supplemented by various MOUs with 4 National Forests in Idaho in collaboration with several other Federal, state, and local partners. The respective parties make decisions on aspects pertaining specifically to them; thus, the Tribe has an equitable role in making decisions on habitat restoration.

The partners have carried out a number of joint restoration activities:

- restoring wetlands, riparian zones, and natural meanders in floodplains;
- improving fish passage with better culverts and small bridges,
- de-commissioning of roads,
- controlling noxious weeds, and
- maintaining trails.

These activities have been accomplished using a “holistic approach, which encompasses entire watersheds, ridge-top to ridge-top, emphasizing all cultural aspects.” This Watershed Restoration Partnership has received multiple awards.

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6. VITAL LANDS, SACRED LANDS: A PATH FORWARD FOR BADGER – TWO MEDICINE

New Currents: Co-Stewardship of the Badger-Two Medicine

Earlier political efforts to safeguard the Badger-Two Medicine area through Wilderness designation by Congress did not succeed back in the 1980s and 1990s. But could there be a new and different path? The pursuit of conservation around the world indicates that sometimes new information or understanding ... a new kind of protective designation or management framework ... new leadership ... can break open a ‘log-jam’ in controversy and divisiveness and trigger a dramatic shift in relationships between people and governments of diverse interests. Such new currents can re-freshen the dialogue, re-configure alliances and brighten prospects for conservation of important values and places.

The Badger-Two Medicine area comprises both vital lands for wildlife and sacred lands for the Blackfeet people. Scientific studies over the past 20 years document that the B2M has regional and national significance for its healthy populations of native fish and wildlife, as well as strategic connectivity to other iconic landscapes such as Glacier National Park and the Bob Marshall Wilderness complex. Indeed, the Badger-Two Medicine one of the last, best places for several fish and wildlife species that have been vanquished or diminished in most other areas across the western United States. Some of the last genetically-pure populations of native westslope cutthroat trout in the Missouri River basin swim in the cold, clean headwaters of both Badger Creek and the South Fork of the Two Medicine River. Diverse and dynamic habitats from the prairie foothills through aspen and coniferous forests to alpine peaks support healthy populations of grizzly bears in their wide-ranging movements through the seasons. Here the rare wolverine lopes across a snowy-filled subalpine basin in its undaunted ramblings along the ragged edge of Nature’s food web. In the Badger Creek basin, mountain goats clamber about the dizzying cliffs that

cleave the sky. The wild challenge of a bull elk trumpets across a September sunrise. And – someday – the thunder of the buffalo could return to the tawny plains and foothills of the Badger-Two Medicine. Protecting this diverse landscape and connecting it with other protected areas would be a smart strategy for resiliency as climatic conditions change going forward.

The Badger-Two Medicine is an area of great importance to the Blackfeet people for its historic, cultural, and spiritual values. Ethnographic studies over the past 25 years have documented these cultural values and resulted in the official determination in 2014 of the entire Badger-Two Medicine being eligible for listing on the National Register of Historic Places as a *Traditional Cultural District* (Keeper of the National Register 2014):

“The remote wilderness area of the Badger-Two Medicine Traditional Cultural District is associated with the significant oral traditions and cultural practices of the Blackfoot people, who have used the lands for traditional purposes for generations and continue to value the area as important to maintaining their community’s continuing cultural identity. The area is directly associated with cultural important spirits, heroes, and historic figures central to Blackfoot religion, traditional practices, and tribal lifeways. The Traditional Cultural District area represents a place of extreme power for the Blackfoot tribal community, providing tribal members a place to conduct important prayer, hunting, and plant and paint gathering activities. Particularly as life on the reservation changed, the expanded Badger-Two Medicine area became a significant region of refuge for many tribal members.”

In a larger context, such historic and cultural values for Blackfeet people are part of the common heritage of all citizens of the United States. Thus, the entire Badger-Two Medicine represents a unique confluence of significant wildlife and cultural values ... a *vital* land, a *sacred* land.

In recent decades, there has been a steady stream of judicial decisions reaffirming the inherent sovereignty of Native Americans and upholding certain rights reserved under historic treaties and agreements of the 1800s on lands now under jurisdiction of the U.S. Forest Service. Congress has passed several laws to safeguard objects and sites of historic and cultural significance to Indian people and to promote tribal self-governance. In recent years, Presidents have signed Executive Orders to mandate regular and meaningful consultation with tribal officials on pertinent matters and to strengthen the United States government-to-government relationship with Indian tribes. In the past decade, the Forest Service has developed progressive policies regarding tribal relations and engaged in numerous collaborations with tribes on National Forests across the country. These actions across the judicial, legislative and executive branches of government have established a new legal context for relations with Native American tribes.

Indigenous people all around the world are concerned about threats to places and resources essential to the exercise of their rights and traditional culture – for both present and generations to follow. From a strong base of affirmed treaty rights and cultural pride, indigenous people are reaching for more meaningful participation in the stewardship of ancestral lands and resources.

In the United States, many of these places are off-reservation public lands, which have been under the jurisdiction of the U.S. Forest Service for more than a century. Over time, a new culture and constituency of people have come to cherish these same lands for many values and uses. The Forest Service is charged with managing the National Forest System across the United States for a multiplicity of values and uses for all citizens. Through the years, the agency has built up considerable management capacity and technical expertise. Understandably, Forest Service personnel have pride in their competence as land stewards.

Some tribes have called for repatriation or return of historic lands to their ownership, with management funds provided by the federal government. Such a scenario seems problematic, however, due to broader public perceptions about dysfunctional aspects of governance in some tribes, concerns about public access, dim prospects for adequate budget, etc. In any case, tribes maintain that decisions on ceded lands of critical importance to them should not be made unilaterally by the United States – but rather on a government-to-government basis through a process of mutual consideration, analysis, and respect.

Collectively, these new actions have re-configured the context and prospects for devising a fresh and innovative approach to protecting the natural and cultural values of the Badger-Two Medicine. Elsewhere around the world, indigenous people and majority governments have turned to co-management as a way of achieving a common purpose while bridging diverse perspectives and interests.

The term ‘co-management or participatory management’ has been used commonly but loosely to describe a broad continuum of management arrangements between a government agency and social actors of variable standing, decision authority and responsibilities. But it connotes an imperative to *manage* ... sometimes with a heavy hand and a lighter head. Instead of the word ‘management’, I prefer the term ‘stewardship’ – which comes from *stig* [meaning *house*] and *weard* [meaning *guardian* or *keeper*] (Oxford Online Dictionary). It has affinities with the word ‘ecology’, which means the study of the house or home. According to the Merriam-Webster Dictionary, stewardship means ‘protecting and being responsible for something entrusted to one’s care’.

The inherent sovereignty, legal rights, and government-to-government stature of native people in the United States has been recognized through law, court ruling and executive policy. Hence, the relation of a government agency such as the Forest Service with Indian tribes is legally different than with other ‘stakeholders’. It follows that the term ‘co-stewardship’ could be reserved to recognize and distinguish this unique relationship from other kinds of collaborations. Thus, co-stewardship connotes that native people have some meaningful and equitable role in decisions beyond advisory. Yet, equitable does not mean equal ... the responsibility of the respective parties can be aligned to the extent of their legal standing or rights. For purposes of this report, I define the term **co-stewardship** as follows: ‘equitable sharing of responsibilities and decisions as appropriate for a given area or set of natural or cultural resources between a national/state government and Indigenous sovereigns’. It’s not exclusionary of other voices in the general public but rather a nod of respect to a native people. What might co-stewardship look like for the Badger-Two Medicine?

Key Steps Toward Successful Co-Stewardship for the Badger-Two Medicine

Co-stewardship can be difficult terrain to navigate, as recent experiences on the National Bison Range in Montana have illustrated. But the case studies and other literature provide numerous examples where the efforts have been successful – despite different world views, difficult histories, and a field far from level. These experiences and lessons can inform a possible framework for co-stewardship of the Badger-Two Medicine on the path to its enduring protection. Here, I suggest some key steps.

- ✓ *Understand the legal and social context for co-stewardship:* The framework for co-stewardship should align properly with Blackfeet rights as reserved in the Agreement of 1895-96, Constitutional and Indian law, Executive Orders on consultation, and U.S. Forest Service administrative policy and latest planning rules for Forest Plans. To avoid mis-understandings, it is essential to acknowledge at the outset that the Forest Service does not have the legal authority to delegate its ultimate decision-making authority. Nonetheless, there is ample space for the Blackfeet Tribe to have a meaningful role in stewardship of cultural and natural resources pertinent to their reserved rights. At the same time, the myriad voices of the public must be heard as well because the Forest Service is charged with managing these public lands for all citizens.

- ✓ *Develop a shared vision and goals for protection of natural and cultural values:* The entire Badger-Two Medicine area has significant natural value for vulnerable fish and wildlife, as well as being an intact and connected landscape. The entire Badger-Two Medicine area is of significant cultural importance to the Blackfeet people, and all of it (and more) is eligible for listing as a Traditional Cultural District on the National Register of Historic Places. Thus, it will be essential to manage the B2M as one integrated unit. It will be important for the Blackfeet Tribe and the Forest Service to articulate a shared vision and goals of protecting its ecosystem integrity and roadless character (*Vital Land*) and native rights and cultural heritage (*Sacred Land*) from industrial developments. For example, following the Conservancy designation in British Columbia, goals might include:
 - protect ecosystem integrity and natural processes;
 - safeguard cultural landscape, ceremonial uses, and reserved rights of Blackfeet Tribe;
 - provide for non-motorized recreational use (per 2009 Travel Plan); and
 - prohibit commercial logging, mining, or other industrial activities.

- ✓ ***Establish a Co-Stewardship Board to Complete a Stewardship Plan:*** A Co-Stewardship Board could be composed of several members (6-8 ?) with equal representation of the Blackfeet Tribe and the Forest Service. Its primary role would be to prepare a Stewardship Plan, which would set objectives, standards, and desired environmental conditions in the Badger-Two Medicine. Other stakeholders might engage in an advisory capacity. The Stewardship Plan could be a NEPA document with standard opportunity for full public involvement; the Forest Service would be responsible (and liable) for the ultimate decision. The plan could be integrated into any of the protective designations discussed later in this chapter.

- ✓ ***Respective roles in decision-making:*** In a co-stewardship arrangement, both parties would have a full voice and role in shaping decisions, But there may (will) be occasions when the parties differ on a decision. Perhaps one approach would be for the Forest Service to justify ('burden-of-explanation') any decisions that are inconsistent with the tribe's recommendations or priorities. This would be rather analogous to the Forest Service role in Section 7 consultations with the U.S. Fish and Wildlife Service on projects that 'may affect' a species listed under the Endangered Species Act. In this approach, the Forest Service would consult with Indian tribes whenever a project might impact populations or habitat of species harvested under reserved rights. In reviewing a proposed Forest Service project/activity, the tribe may recommend certain 'reasonable and prudent' modifications or alternatives such that the revised project would not 'jeopardize' the population size needed to sustain harvest of the species. The process would include early and constructive exchanges of technical and local expertise in a mutual, participatory framework. The Forest Service would give substantial weight to the tribal position as a respected partner but could challenge it based on best available science. Tribal input might influence and shape decisions affecting their treaty rights in ceded areas, but they would not have veto power. The ultimate authority (and liability) for all decisions remain with the Forest Service.

- ✓ ***Engage in Co-Stewardship Projects:*** The Blackfeet Tribe's reserved rights include hunting, fishing, and cutting timber for administrative and domestic uses. Accordingly, the Tribe might serve as (1) custodians of the cultural landscape and sacred sites, and (2) stewards of wildlife populations (such as elk) along with the state wildlife agency. Specific stewardship projects might include • restoration of wetlands, riparian zones, and natural meanders in floodplains; • improving fish passage with better culverts and small bridges, • de-commissioning of roads, • controlling noxious weeds, and • maintaining trails. Because Native American tribes can tap different sources of funding than the Forest Service, the co-stewardship team may accomplish more projects on-the-ground due to the synergy of expanded funding and greater efficiency.

- ✓ ***Build and Nurture the Relationship:*** Native and majority people/institutions will have different perspectives, interests and constituencies as they enter the co-stewardship arena. Some of these interests may clash, but many values will be held in common as a foundation for a natural partnership. Taking advantage of such diverse perspectives could enhance problem-solving ability and perhaps result in greater resiliency to changing environmental conditions. Success in co-stewardship depends much more upon respectful attitudes and positive relationships than on perfect structural arrangements. Cultural-awareness training that addresses both perspectives may engender respect and constructive relations.

- ✓ ***Start smart by taking a progressive path to success:*** Some thoughtful observers offer the counsel of starting small and taking progressive steps toward fuller co-stewardship. In this approach, native people would take on additional responsibilities and a greater decision-making role at a pace and scale best fitting their interests and capabilities at any given time. Such a step-wise approach can provide both parties with time and opportunity to build and strengthen relationships and gain better understanding of each other's perspective and priorities. Moreover, it may build a record of success whereby the public gains confidence in the new management arrangement.

Let's examine recent actions and options for protecting the Badger-Two Medicine in concert with the theme of co-stewardship.

Badger-Two Medicine Travel Management Plan: Shifting the Vision

By the mid-2000s, there was increasing conflict between motorized and non-motorized use of the Badger-Two Medicine area. The Rocky Mountain Ranger District re-visited the existing Travel Management Plan (adopted in 1988) and evaluated an array of 5 alternatives in an Environmental Impact Statement under NEPA. In reviewing the public comments, the Forest Service stated in its Record of Decision (USDA Forest Service 2009):

“One recurring theme of public comment was the value people placed on the wild, remote setting offered by the front country of the Rocky Mountain Ranger District. The Blackfeet Tribal Business Council provided a resolution emphasizing the cultural and spiritual significance of the Badger-Two Medicine area to them and requested the area be non-motorized. Many commenters emphasized the diversity of wildlife species, the presence of the grizzly bear and wolf, and asked that my decision maintain the undeveloped character of the Badger-Two Medicine area.”

“After consultation with the Blackfeet Tribal Business Council, the Blackfeet Badger-Two Medicine Committee, reviewing the information contained in the analysis and reviewing public comments, my conclusion is that area is very significant culturally and spiritually to the Blackfeet

Tribe; it provides high quality and diverse wildlife habitat and provides excellent opportunities for non-motorized types of outdoor recreation.”

In 2009, the Forest Service selected Alternative 5 (with slight modification) to emphasize non-motorized uses in the Badger-Two Medicine area in recognition of its natural and cultural values and opportunities for recreation and solitude. All trails (approx 182 miles) would allow hiking, stock, and bicycle travel yearlong. Motorized wheeled vehicles would be restricted yearlong on all of these trails. To provide access to trailheads, wood cutting and for tribal members to exercise their treaty rights, the agency kept 6 miles open for licensed road vehicles and another 2 miles seasonally (generally starting May or July to November) for motorized use. In addition, approximately 1.6 miles of roads would be decommissioned and 4.8 miles of roads converted to trail. The entire Badger-Two Medicine area was closed yearlong to snowmobiles (USDA Forest Service 2009).

In reporting the decision, the Forest Service noted that the Badger-Two Medicine area was once part of the Blackfeet Reservation and remains very important spiritually and culturally to the tribe. At the time, much (>70%) of the Badger-Two Medicine area had been determined eligible for listing in the National Register of Historic Places as a Traditional Cultural District (subsequently 100%). The Forest Service stated that the decision to restrict motorized use was heavily influenced by public comments and consultation with the Blackfeet Tribe and the significance of the area to their culture. The Blackfeet Tribal Historic Preservation Office formally concurred with the Forest Service decision.

Motorized user groups and individual recreationists sued, claiming the decision unduly favored American Indian religion in violation of the Constitution’s Establishment Clause. Using the test set forth in *Lemon v. Kurtzmann*, the District Court held that the plan did not violate the Constitution because the prohibition was entered for a secular purpose, its principal effect neither advanced nor inhibited religion, and there was no “excessive entanglement” with religion resulting from enactment of the travel plan. The Court emphasized that the travel plan set forth “a host of secular purposes, including benefits to air quality, water quality, soil quality, wildlife habitat, and fish habitat” (*Fortune v. Thompson* 2011).

This updated Travel Management Plan was a significant decision in the continuing saga of the Badger-Two Medicine because:

- An Environmental Impact Statement examined a range of alternatives and assessed public comment under the National Environmental Policy Act (NEPA).
- Most of the public comment supported protection of the B2M to maintain its wild and undeveloped character, diversity of wildlife and habitats, and non-motorized recreation.
- Forest Service recognized the spiritual and cultural value of the area for the Blackfeet people.
- Forest Service consulted with the Blackfeet Tribe, which endorsed the decision.

- In response to a lawsuit, a court ruled in favor of the Forest Service decision.

All of this shifted the vision and set the stage for considering options for more durable protection of the Badger-Two Medicine.

Enduring Options for Protecting the Badger-Two Medicine

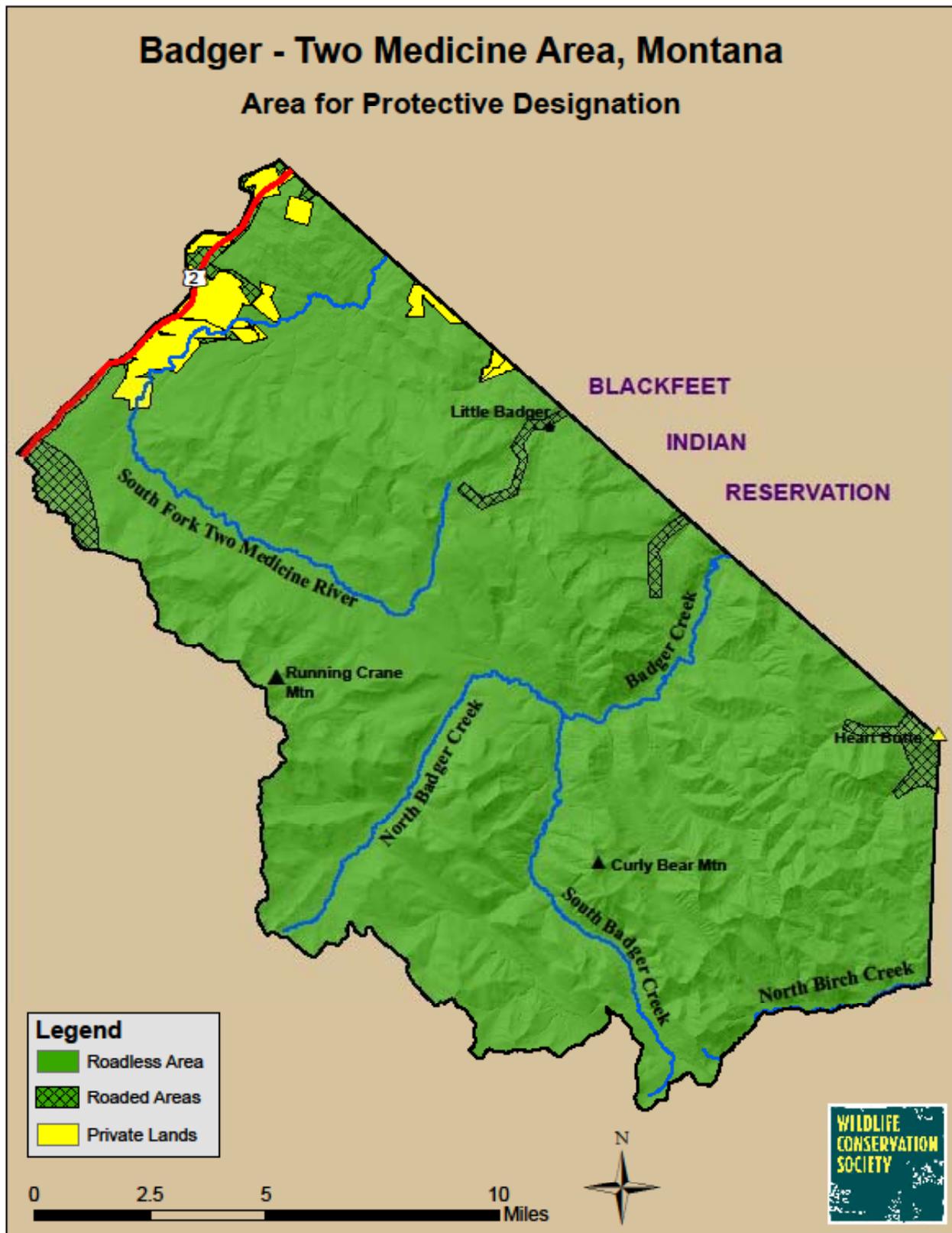
Due to its significant conservation and cultural values, the Badger-Two Medicine merits more enduring protection. The B2M has regional and national importance for its healthy populations of native and rare fish and wildlife, as well as for its connectivity to other iconic landscapes such as Glacier National Park and the Bob Marshall Wilderness complex. It constitutes a powerful cultural landscape for the Blackfeet people today and for future generations. In this section, I examine a series of options for protecting the Badger-Two Medicine that range from administrative designation to legislative or executive actions.

It's of critical importance to realize that the *entirety* of the Badger-Two Medicine comprises the minimum area necessary to satisfy various historical/legal, cultural and conservation considerations.

- Historically, the Agreement of 1895-96 pertains to the entire area, not just portions thereof.
- As a corollary, various judicial rulings, Indian laws, and Executive Orders on Indian policy applicable to off-reservation rights logically would bear on the entire area.
- The entire Badger-Two Medicine area (and more) was determined eligible for listing in the National Register of Historic Places as an integrated cultural landscape.
- From a conservation perspective, the entire area is important to account for key habitats and seasonal ranges of the suite of fish and wildlife species, and to provide room to roam in response to future changes in climate.
- Finally, the entire Badger-Two Medicine was considered as a single, coherent management unit in the 2009 Travel Plan.

Accordingly, each of the following options would essentially encompass all of the public lands in the Badger-Two Medicine area (~130,000 ac). Therefore, I have provided one map to illustrate the extent of these protective options and displayed the small roaded areas that would be excluded from the Wilderness option (Figure 17). These options are not necessarily or completely exclusive. For example, the administrative option of designating Special Historic or Cultural Area for the B2M could set the stage for more enduring options. A Wilderness could comprise nearly all of a 'Conservation and Cultural Area' established by Congress.

Figure 17. General extent of the Badger-Two Medicine protected area, Montana. The entire area of public lands (no private lands) would be included in a Special Area designation by Forest Service or in a National Monument proclamation by President. Roaded areas would be excluded from Wilderness designated by Congress.



Option I: Administrative Designation of USDA Forest Service Special Historic or Cultural Area Special Management Areas

The steady roll-out of Indian laws from Congress, Presidential Executive Orders on consultation with tribes, and judicial decisions about treaty rights has led to new tribal policy directives by the USDA Forest Service. While it is important to note that the Forest Service must seek to balance all issues related to management of Forest Service lands, a land management plan necessarily must allocate different management direction to different areas across the Forest. On January 30, 2015, the Forest Service finalized its new policy directives for land management planning (following publication of the revised planning rule in 2012). The Forest Service Land Management Planning Handbook has a separate section on ‘Areas of Tribal Importance’ (FSH 1909.12, chapter 20: 23.22i). Identification of such areas of tribal importance is based upon an assessment of the cultural and historic importance to tribes, existing tribal rights, condition and trends of cultural resources, and how they contribute to social and economic sustainability. Provisions for the specific protection, management, or use of these areas are developed in consultation and collaboration with Indian tribes and the Forest Supervisor and/or Regional Forester. Options include (1) formal designation of **Special Areas**, or (2) specification of purpose for different *Management Areas* and/or *Geographic Areas* in the Forest Plan.

The Forest Service has long had authority to administratively designate and manage specific areas on National Forests for emphasis of certain values, uses and desired future condition (authority found in the principal acts from 1897 to the present that authorize multiple-use management). It is Forest Service policy to administratively designate or recommend designation of special areas with outstanding natural characteristics or unique recreation or cultural values (36 CFR 294.1 and FSM 2372.2). Moreover, the Forest Service recognizes that designation of such Special Areas on individual National Forests may comprise a distinctive and significant contribution to the broader regional or national context.

The kinds of Special Areas that can be designated administratively include Scenic Area, Geological Area, Botanical Area, Zoological Area, Paleontological Area, Historical Area, and Recreational Area (FSM 2372.05). Each type of designated area has its own unique special character, purposes and authorities. For example, a Historical Area is defined as “a unit of land possessing a significant site or a concentration of sites, buildings, structures, or objects united historically or prehistorically by plan or physical development.” A ‘Traditional Cultural District’ eligible for listing under the National Historic Preservation Act would be consistent with this definition.

Identifying an area of tribal importance as a Management Area and/or Geographic Area in the Forest Plan would comprise an important but lesser degree of recognition. Management areas are usually based on purpose, whereas Geographic areas are based on place. A *Management Area* designation would connote a certain management or thematic purpose such as ‘timber production’ or ‘backcountry recreation’ and could be applied at different locales across the

National Forest. A *Geographic Area* is a spatially-contiguous area and provides management direction tailored to the particular values and uses in that area. In some areas, a combination of management and geographic designation makes the most sense.

An interesting case involving ‘Areas of Tribal Importance’ comes from the roadless areas on National Forests in central Idaho. The Idaho Roadless Rule (73 FR 61489, Oct. 16, 2008) is pertinent to the Badger-Two Medicine situation because one of 5 area ‘management themes’ was *Special Areas of Historic or Tribal Significance* (SAHTS). The Nez Perce Tribe and others expressed the desire to protect these areas specifically based on their historic or tribal significance. On the Clearwater National Forest, 6 SAHTS were designated in roadless areas proximal to the Nez Perce National Historic Trail (Nimiipúu) and one on the Nez Perce National Forest. Altogether, these special areas totaled about 48,600 acres. The desired condition stated for these roadless areas was: “relatively undisturbed by human management activities in order to maintain their unique Tribal or historic characteristics ... natural conditions and processes are predominant.”

Under the Idaho Roadless Rule, the following activities were prohibited in those Idaho roadless areas designated as *Special Areas of Historic or Tribal Significance*: road construction and reconstruction, cutting or removal of timber (except for personal use), and road construction, road reconstruction, or surface occupancy associated with new mineral or energy leases subsequent to this rulemaking. It is the intent of the Nez Perce-Clearwater National Forest to bring the Idaho Roadless Rule unaltered into the revised Forest Plan for the Forests (J. Thompson, Planner for Nez Perce-Clearwater National Forest, *personal communication*). Thus, the areas and management standards for those areas listed as SAHTS will be carried forward into the revised Forest Plan.

Badger-Two Medicine Cultural or Historic Area

Under administrative authority, the Forest Service could (1) formally designate the ‘Badger-Two Medicine Cultural [or Historic] Area’, or (2) simply recognize the ‘Badger-Two Medicine Area’ in the Forest Plan with specific management direction to protect its distinctive cultural and wildlife values. The latter direction would only be in effect for the duration of that land management plan (typically 10-15 years). The Regional Forester can designate Special Areas <100,000 acres, whereas areas of >100,000 acres require authorization by the Secretary of Agriculture. The portion of the TCD within the Badger-Two Medicine covers approximately 130,000 acres.

The Lewis and Clark National Forest would consult closely with the Blackfeet Nation as co-stewardship partners in devising management direction and objectives appropriate to the protection of cultural and conservation values for which the area was designated. It would recognize (a) specific rights reserved under the 1895-96 Agreement, and (b) the Traditional Cultural District as sacred lands. The plan would include any specific desired future conditions for the designated area (e.g., protection of cultural sites and wildlife habitats). A key component would be specific standards (which are enforceable) and guide-

lines that would apply to projects or activities that may adversely affect areas of tribal importance (e.g., protection and confidentiality of sacred sites, privacy for traditional cultural practices) (see Nie and Schembra 2014 for pertinent discussion). Such enforceable standards could provide more protection than formal designation of the B2M as a Traditional Cultural District on the National Register of Historic Places, which is limited to a procedural requirement of consultation and does not necessarily protect a property from disturbance or damage (Parker and King 1998).

Any administrative designation or recommendation of the Badger-Two Medicine as a Cultural or Historic Area would necessarily be an integral part of the Forest planning process subject to full public participation and review under the National Environmental Policy Act (NEPA). It must be described in the Record of Decision for the revised Forest Plan for the Lewis and Clark National Forest. This process would provide a beneficial record of public input on designation of the Badger-Two Medicine as a Special Area or any other designation.

The USDA Forest Service commonly enters into a Memorandum of Understanding (MOU) with various entities to provide explicit guidance on substantive and procedural aspects of inter-jurisdictional collaborations (see Stewart 2011 for examples). A recent MOU between the USDA Forest Service and Tribes of Lake Superior Chippewa Indians in the Great Lakes region provides an exemplary model or template for a MOU for the Badger-Two Medicine. This MOU addressed Forest Service-Tribal relations on National Forests in Michigan (Ottawa, Hiawatha and Huron-Manistee) and Wisconsin (Chequamegon-Nicolet) within areas ceded by tribes in treaties during 1836-1842 (USDA Forest Service 2012). The MOU from the Great Lakes example can be downloaded from the following link: <http://www.fs.fed.us/spf/tribalrelations/documents/agreements/cededterritoryNFMOUamendMarch2012.pdf>.

Though not writing in his official capacity as an attorney for the legal department of the Blackfeet Tribe, John Harrison stated the following (Harrison 2006):

“Tribes should not overlook the authority of the Forest Service to administratively designate and manage specific landscapes on the Forest. Special use areas, special interest areas, experimental areas, and wild-life management areas are all administratively designated by the Forest Service. These designations can be utilized to protect resources that are of concern to tribes. Tribes should familiarize themselves with the range of management options available to the Forest Service and should be ready to propose and justify specific management options during consultation.”

Administrative designation of such special or management areas represents an important decision because it explicitly recognizes the values of the area and assigns an appropriate purpose. The action, however, is not necessarily legally binding on the agency and conceivably could be rescinded at the discretion of future administrations. Thus, some tribes have sought more lasting protec-

tion for lands of tribal cultural importance through stronger legislation. Such actions can make it clear that sacred sites, cultural values, and reserved treaty rights *shall* be protected (Nie 2008). Let's examine the option of Congressional legislation of the Badger-Two Medicine as a Wilderness or perhaps some other innovative designation.

Option II: Congressional Designation of Wilderness or Conservation and Cultural Area

Another and more durable option for protection of the Badger-Two Medicine would be through Congressional designation as a Wilderness under the Wilderness Act. The notion of big 'W'-wilderness (and/or National Parks) - carries baggage, however, for some Indian people for both philosophical and historical reasons (Krahe 2005, Nie 2008). Some Indians do not ascribe to the concept of 'wilderness' as expressed in the Wilderness Act of 1964. They construe that the statutory language defining *wilderness* as "untrammelled by man, where man himself is a visitor" and "retaining its primeval influence" implies that Native Americans did not live in these areas or did not influence the ecological dynamics (Cronon 1995). Or that there was even such a thing as *wilderness* separate from their ancestral homeland. But, the Wilderness Act also may be viewed as a resistance movement to the pervasive developments of the industrial juggernaut that has so altered the natural landscapes of this country over the past 100+ years. Howard Zahnizer, the chief author of the Wilderness Act, wrote: "In the wilderness, it is thus possible to sense most keenly our human membership in the whole community of life on earth" (Harvey 2005). Is that not a spiritual sentiment that accords with those of Native Americans?

Other tribes view wilderness designation as an effective way to protect cultural resources and sacred places against development pressures. For example, the Confederated Salish and Kootenai Tribes (CSKT) established the first-ever *Tribal Wilderness* in 1982 encompassing nearly 92,000 acres of the Mission Mountains on their Flathead Indian Reservation in western Montana.

The CSKT clearly linked the preservation of their religion and culture to the preservation of the Mission Mountains as wilderness (CSKT 2005):

"In writing the ordinance, the authors reflected upon and borrowed from the federal wilderness language but they also consulted cultural and spiritual leaders in the Tribal community. Although there was a strong belief that traditional Indian culture was and is part of the natural world, the consensus among those leaders was that the value of the Mission Mountains for future Tribal cultural and religious purposes would be substantially diminished if human use was allowed to degrade the area's exceptional natural qualities. They were especially concerned about the impacts of non-Indian use and the potential damaging impacts of twentieth-century technologies. In the end, they decided preservation of the areas as wilderness had to take precedence over human use."

The Tribes emphasized the importance of wilderness in terms of cultural importance. The Tribal Wilderness Ordinance (79A) states:

“Wilderness has played a paramount role in shaping the character of the people and the culture of the Salish and Kootenai Tribes; it is the essence of traditional Indian religion and has served the Indian people of these Tribes as a place to hunt, as a place to gather medicinal herbs and roots, as a vision seeking ground, as a sanctuary, and in countless other ways for thousands of years. Because maintaining an enduring resource of wilderness is vitally important to the people of the Confederated Salish and Kootenai Tribes and the perpetuation of their culture, there is hereby established a Mission Mountains Tribal Wilderness Area and this Area, described herein, shall be administered to protect and preserve wilderness values.”

The CSKT definition of ‘wilderness’ is quite similar to that of the 1964 Wilderness Act, thereby representing an interesting ‘confluence of sovereignty and conformity’ (Krahe 1995). The Ordinance defines it as thus:

“A wilderness is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined as an area of undeveloped tribal land, retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions. It is the principal objective of this Ordinance to protect and preserve an area of land in its natural conditions in perpetuity. This Wilderness shall be devoted to the purposes of recreational, scenic, scientific, educational, conservation, cultural, religious and historical use only insofar as these uses are consistent with the spirit and provisions of this Ordinance. Human uses of this area must not interfere with the preservation of the area as wilderness.”

From a practical standpoint, some tribes fear that treaty rights will need to be modified to comport with wilderness direction – assurances to the contrary notwithstanding. Professor Nie (2008) reviewed several cases that illustrate how various laws establishing specific Wildernesses on Federal lands have recognized and protected tribal cultural and traditional values. Typically, these laws have included a standard stipulation providing that ‘nothing in this title shall be construed to diminish the rights of any Indian tribe nor to diminish tribal rights regarding access to Federal lands for tribal activities, including spiritual, cultural, and traditional food gathering activities’.

For example, in 1987 Congress used a collage of different designations to protect the *el malpais* (“badlands” in Spanish) region of New Mexico – a place of historical, religious, and cultural importance to the Acoma and Zuni Pueblo tribes. This law created the (1) El Malpais National Monument (~114,000 acres) managed by the National Park Service, and (2) El Malpais National Conservation Area (~263,000 acres) managed by the Bureau of Land Management, which included the West Malpais and Cebolla Wildernesses (98,000 acres). To accommodate traditional cultural and religious practices, the

Management Plan allows non-exclusive motor vehicle access to the perimeter of each wilderness, with vehicle use inside the wilderness prohibited.

In a more recent example, the Northern California Coastal Wild Heritage Act of 2006 recognizes

“the past use of wilderness areas designated by this Act by members of Indian tribes for traditional cultural and religious purposes,” and provides “the Secretary shall ensure that Indian tribes have access to the wilderness areas for traditional cultural and religious purposes.”

Nie (2008) concluded from his review that protected land legislation could and has been designed to meet tribal needs and treaty obligations.

“This history illustrates the flexibility of wilderness law, and how tribal provisions could be incorporated into future legislation. And certainly, making accommodations for tribal sacred places and reserved rights in wilderness should prove less controversial than allowing extractive uses to occur in these areas.”

Badger-Two Medicine Wilderness or Conservation and Cultural Area

In the revised Forest Plan for the Lewis and Clark National Forest, the Forest Service could recommend that a ‘Badger-Two Medicine Wilderness’ be designated by Congress. Like previous legislative efforts, a bill establishing the B2M Wilderness could include a number of provisions unique to the historic and cultural context of the area. For example, it could:

- recognize the importance of a trinity of wilderness, wildlife, and cultural values;
- recognize certain existing rights reserved by the Blackfeet in the ceded area under the 1895-96 Agreement, as well as any other valid existing rights;
- stipulate that nothing shall be construed to diminish, prejudice, add to, or otherwise affect the treaty rights of the Blackfeet Tribe or the rights of the United States;
- establish a committee – with representation of the Blackfeet Business Council and perhaps tribal traditionalists – to develop a wilderness management plan which would give special consideration to the cultural, wilderness, and wildlife values of the B2M; and
- direct a government-to-government agreement between the Forest Service and the Blackfeet Nation for co-operative management of the Badger-Two Medicine Wilderness.

Another variant would be for Congress to designate a ‘Badger-Two Medicine Conservation and Traditional Cultural Area’ rather than a Wilderness. A quite

relevant example of innovative law-making by Congress, of course, occurred in December 2014 with passage of the Rocky Mountain Front Heritage Act. Congress protected nearly all of the remaining roadless federal lands along the Rocky Mountain Front immediately south of the Badger-Two Medicine through a combination of additions to the Bob Marshall Wilderness (67,000 ac) and a 'Conservation Management Area' (208,000 ac). The CMA recognized existing rights and capped the miles and location of open motorized routes established in the updated Lewis and Clark National Forest Travel Plan for the 'Birch Creek South' area (USDA Forest Service 2007). This kept nearly all the area as non-motorized but allowed some other mechanized activities not acceptable under a Wilderness designation. The proposal had garnered broad support in Montana ... disagreement from some quarters notwithstanding.

In conclusion, there are numerous examples of Congressional laws which have established specific Protected Areas (Wilderness/ Conservation Areas) on Federal lands to protect cultural and traditional values and practices of Indian tribes, as well as wildlife and wildlands. In contrast to administrative designations by a federal agency, Congressional legislation would provide more enduring protection.

The downside, of course, is that such a course may be especially problematic at certain times - and may take many years to secure passage.

Option III: Presidential Proclamation of National Monument

A third option for protecting the unique natural, historic and cultural values of the Badger-Two Medicine area could be Presidential Proclamation as a National Monument. With passage of the Antiquities Act in 1906, Congress gave the President authority to create national monuments on federal lands to protect historic landmarks, historic and prehistoric structures, or other objects of historic or scientific interest. Since enactment of the Antiquities Act, 16 of 19 Presidents from both parties have proclaimed over 100 National Monuments all across America. Congress also has the power to declare national monuments and has established 40 of them.

The overall purpose of National Monument designation is preservation of natural and cultural features, and many of these monuments protect places of traditional cultural, historic, and spiritual significance to Indian tribes. Typically, a Proclamation charges the responsible federal agency to develop a Management Plan within a specified time frame, which may address any special natural or cultural features noted in the Proclamation. These management plans are developed in accordance with the National Environmental Policy Act (NEPA).

In general, existing land uses may continue but limitations may be included in the proclamations themselves or in subsequent management plans developed by an agency for the monument. Contemporary proclamations typically have protected valid *existing* rights for land uses, but most have barred *new* mineral leases/mining claims, prospecting or exploration activities, and oil & gas leases. This has been accomplished by language to withdraw the lands within the monuments from entry, leasing, or other disposition under public land laws, mining

laws, and mineral leasing laws. Use of motorized and sometimes mechanized vehicles is addressed typically in an accompanying management plan but can be specified in the Proclamation.

The use of Presidential power to proclaim National Monuments – as authorized by Congress in the Antiquity Act – has sparked controversy through the years (Vincent and Alexander 2010). Concerns in some quarters have centered on two principal issues: (1) size of the monument, and (2) lack of public involvement in the designation.

In establishing a national monument, the President is required by the Antiquities Act (Sec. 2) to reserve “the smallest area compatible with the proper care and management of the objects to be protected.” Critics charge that ‘large’ monuments violate the Antiquities Act; supporters observe that the Antiquities Act gives the President discretion to determine the size needed to protect the features of interest. For example, in proclaiming the Grand Canyon as a national monument in 1908 encompassing 800,000 acres, President Theodore Roosevelt determined that this large size was necessary to protect the ‘object’ in question – the *canyon*. Interestingly, President George W. Bush proclaimed both the smallest National Monument at 0.3 acres (African Burial Ground National Monument in New York City) and the largest at 89 million acres (Papahānaumokuākea Marine Reserve of waters and islands around Hawaii) Further, the courts have deferred to the President’s judgment as to the proper size for a monument.

Critics also note that monuments have been proclaimed without environmental assessments and/or opportunity for public participation as required under the National Environmental Policy Act (NEPA) of 1969 and the Federal Land Policy and Management Act (FLPMA) of 1976. These requirements, however, apply only to the action of an agency – not to proclamations by a President (*Alaska v. Carter* 1978). Supporters point out that subsequent management plans are developed with full public participation in accordance with NEPA. Nevertheless, this aspect of National Monument by proclamation continues to be a bone of contention.

Interestingly, on February 14, 2000, President Clinton announced that his administration was convening a team of resource specialists to complete a 60-day feasibility study regarding a possible national monument to protect many of the last stands of giant sequoias in California. This marked perhaps the first time that a national monument proposal has been announced for study and public input *prior* to establishment. On April 15, the President visited the Sequoia National Forest where he proclaimed the Giant Sequoia National Monument. The new monument covered 328,000 acres and protected more than 70 groves of giant sequoia (Williams 2003).

Courts – including the U.S. Supreme Court – have upheld the President’s authority to create monuments under the Antiquities Act, as well as designation of particular monuments (Vincent and Alexander 2010). In a decision in 1920 addressing the proclamation of the Grand Canyon as a National Monument, the Supreme Court upheld the President’s authority under Antiquities Act

(*Cameron v. United States* 1920). The Court found that the act gave the President the authority to preserve lands with cultural or scientific interest. Ever since that ruling, courts have given considerable deference to this presidential authority by proclamation – provided that it states the natural or historic interests and that the area is the minimum amount needed to protect those features (*Tulare County v. Bush* 2002). The courts also have ruled that the act may protect natural wonders and wilderness values (*Mountain States Legal Foundation v. Bush* 2002).

Historically, many national monuments have been managed by the National Park Service. More recently, monuments have been established on BLM or Forest Service lands and these agencies have retained management jurisdiction. Eight national monuments occur on National Forest lands and are managed by the United States Forest Service. Six of these occur in the western states of California (3), Colorado, Oregon, and Washington; they range in size from 55,000 acres to 346,177 acres. In several cases, management of the new monument is not much different than the existing and compatible land uses (Williams 2003).

The Santa Rosa and San Jacinto Mountains National Monument in southern California provides a relevant example of a national monument that also has areas of significance to an Indian tribe. Established by an act of Congress in 2000 (*Santa Rosa and San Jacinto Mountains National Monument Act* 2000), the National Monument's boundary encompasses about 271,400 acres – including 89,500 acres of BLM lands; 67,000 acres within the San Bernardino National Forest; and 19,800 acres belonging to the Agua Caliente Band of Cahuilla Indians. The National Monument includes two wilderness areas on Forest Service and BLM lands – the Santa Rosa Wilderness and the San Jacinto Wilderness. Legislation creating the National Monument stated its purpose as follows:

“preserve the nationally significant biological, cultural, recreational, geological, educational, and scientific values found in the Santa Rosa and San Jacinto Mountains and to secure now and for future generations the opportunity to experience and enjoy the magnificent vistas, wildlife, land forms, and natural and cultural resources in these mountains.”

The Act recognized that these mountains have “special cultural value” for the Agua Caliente Band –including significant cultural sites such as historic trails and petroglyphs. Accordingly, it mandated that Secretaries of Interior and Agriculture shall make a special effort to consult with representatives of the [Tribe] regarding preparation and implementation of the management plan. The Tribe owns a site called Tahquitz Canyon, which it has restored into an important nature park with unique environmental and cultural resources. The Tribe's success in managing its own parklands won the respect of the BLM and Forest Service, whose representatives signed a historic cooperative agreement with the Tribe regarding management of this canyon, as well as the Santa Rosa and San Jacinto Mountains National Monument (Tsosie 2003).

The Act established a local advisory committee (which included one tribal representative along with other interested parties) and charged it to prepare and implement a Management Plan. The BLM and Forest Service conducted government-to-government consultation with the Indian tribes during preparation of the Management Plan (BLM and USFS 2004). The Management Plan contained numerous provisions regarding tribal involvement in management of the National Monument:

- Ensure the opportunity for government-to-government consultation with each tribe regarding archaeological research, interpretative programs, and resource management for the National Monument.
- Develop cooperative agreements and Memorandums of Understanding (MOUs) with the Tribes to establish relationships and protocols for management of cultural and other resources within the National Monument.
- Assist the Agua Caliente Band of Cahuilla Indians in its efforts to develop and promote its role as a conduit in encouraging Cahuilla involvement with the National Monument and the sharing of information and resources between the Tribes.

The Tribes have undertaken various on-the-ground management tasks through cooperative and assistance agreements with the BLM and Forest Service. Rebecca Tsosie, an Indian law scholar and professor at the University of Arizona, believes the cooperative agreements used to manage the Santa Rosa and San Jacinto Monument provided a way to

“manage traditional areas located on public lands in the exercise of cultural sovereignty. This approach provides a favorable comparison to the standard approach used by federal land managers, which considers tribal interests as part of the many interests advanced by stakeholders and accommodated through the ‘multiple-use’ policy applicable to public lands.” (Tsosie 2003)

Badger-Two Medicine National Monument

If Congress did not enact legislation to protect the Badger-Two Medicine as Wilderness, the President could proclaim the ‘Badger-Two Medicine National Monument’. The historic, cultural and spiritual importance of the area for the Blackfeet people has been thoroughly documented through a series of cultural assessments over the past 25 years (see chapter 3). In 2014, all of the area (except private lands along the edge) was declared eligible for listing on the National Register of Historic Places (Keeper of the National Register 2014). Such a listing – along with the scientific value of the area for wildlife – makes a compelling case for designation as a National Monument. Consistent with this purpose, the “smallest area compatible with the proper care and management of the objects to be protected” would coincide with the boundaries of the

Traditional Cultural District within the B2M - approximately 130,000 acres – which excludes private lands. This size would also be commensurate with the wide-ranging movements of grizzly bears, wolverines, and elk in the area. The purpose would be to protect the unique cultural and scientific features of the Badger-Two Medicine area. The Proclamation could recognize existing rights reserved by the Blackfeet in the ceded area under the 1895-96 Agreement, as well as any other valid existing rights. It could direct preparation of a management plan with public participation under NEPA for co-stewardship between the Forest Service and the Blackfeet Nation of the Badger-Two Medicine National Monument.

The Badger-Two Medicine situation is much different than the controversial Upper Missouri River Breaks National Monument proclaimed by President Clinton in 2001. The Upper Missouri River Breaks NM consists of 377,000 acres of public land, but there are nearly 82,000 acres of private in-holdings and 39,000 acres of state land *intermingled* with the BLM lands. Much of the public land was leased for livestock grazing by nearby ranchers with base operations on their private lands, who were concerned that the new monument status might affect or complicate their livelihood. In contrast, the Badger-Two Medicine is (1) much smaller in size, (2) a discrete, bounded area of public Forest Service land with <3300 acres of private land clustered at the north boundary, (3) area with a few livestock leases, and (4) an area of significant cultural importance to the Blackfeet Tribe and of conservation interest to many other citizens, who have called for its protection.

In conclusion:

- with new scientific information about the national significance of the Badger-Two Medicine for wildlife conservation ...
- with formal recognition of its national significance as a historic and cultural area for the Blackfeet people ...
- with innovative options for land protection and a new framework of co-stewardship that encompasses diverse perspectives in a common purpose ...
- with new leadership at various levels ...

Now is the time to chart a new path for enduring protection of the wildlife and cultural values of the place called the Badger-Two Medicine.

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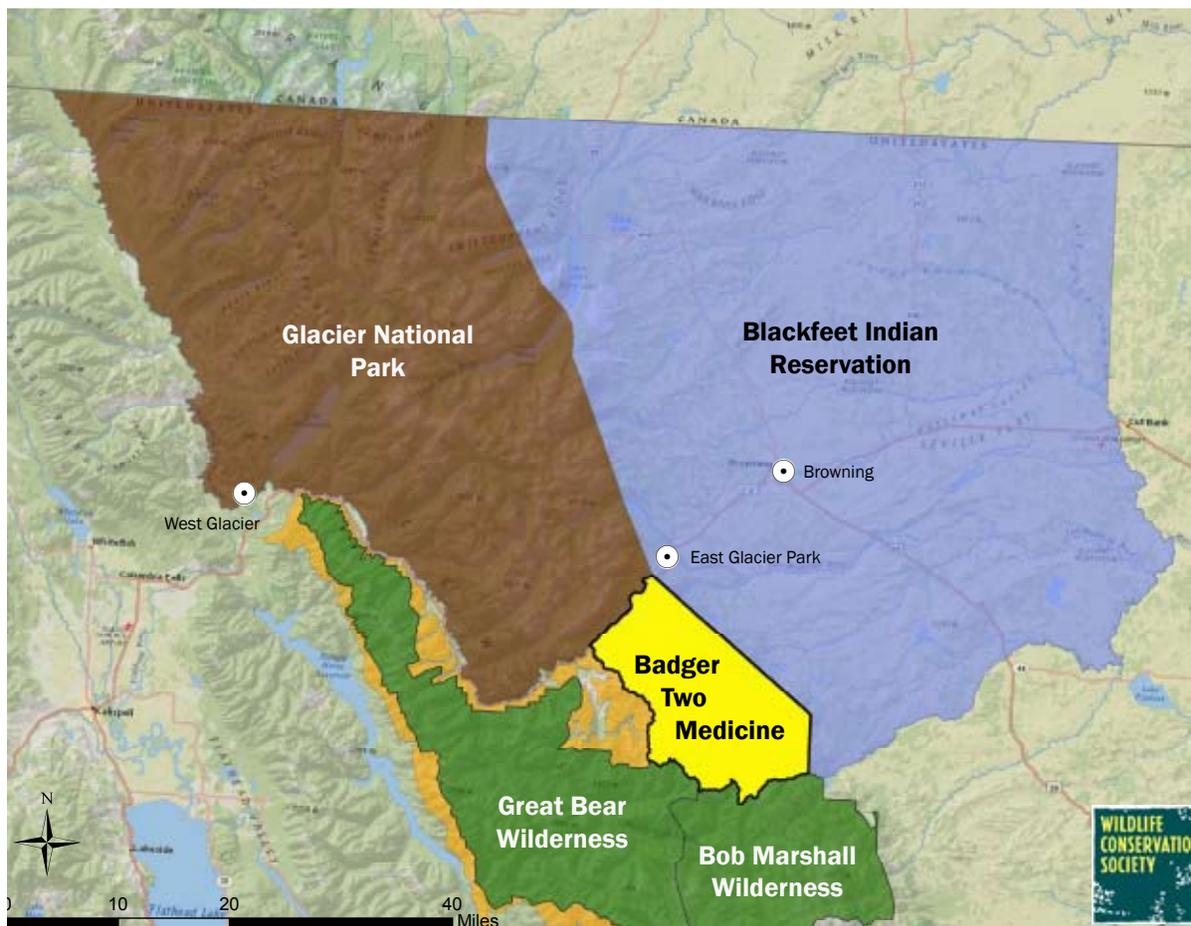
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Badger-Two Medicine Area, Montana

Protecting Wildlife and Cultural Values



The Badger-Two Medicine (B2M) area occupies a strategic position immediately south of Glacier National Park in Montana, where the Great Plains first meets the dramatic uplift of the Rocky Mountains. The B2M is part of the traditional homeland of the Blackfoot Indians, who sold the area to the U.S. government in 1895-96 but reserved certain sovereign rights such as hunting and fishing. Now part of the Lewis and Clark National Forest, the Badger-Two Medicine is one of the last, best places for rare and vulnerable fish and wildlife species – including native cutthroat trout, grizzly bear, wolverine, and mountain goat. And someday the thunder of the buffalo or *Iinnii* could return to the plains and foothills of B2M country. The Badger-Two Medicine holds historic, cultural, and spiritual values for the Blackfoot people. But these natural and cultural values are threatened by potential development of several oil & gas leases issued in the past. From this convergence of historic and recent currents comes a new vision for co-stewardship of these *vital lands, sacred lands* by diverse cultures with a shared purpose. There are several options for enduring protection of the B2M. Now is the time to complete the legacy by charting a new path based upon greater mutual understanding, innovation and leadership ... and so the future awaits those who walk into the circle of co-stewardship for the Badger-Two Medicine.



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