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Winter 2010

### Crown of the Continent Magazine - Winter 2009-2010

University of Montana, Missoula

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# CROWN OF THE CONTINENT

MAGAZINE



WINTER  
2009 – 2010

THE UNIVERSITY OF MONTANA CROWN OF THE CONTINENT INITIATIVE

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ISSUE 2 — WINTER 2009

CROWN OF THE CONTINENT  
MAGAZINE

The University of Montana

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CROWN OF THE CONTINENT  
INITIATIVE

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Cover photo by  
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# PROVOST'S MESSAGE

The first edition of the Crown of the Continent "E-Magazine" was a great success, exposing readers to the grandeur and history of the region. The stories and photographs captured the special nature of the Crown, communicating not only its beauty, but the importance of protecting it as one of our nation's treasures. The electronic format of the magazine is especially effective since it can be so readily shared with interested people in the region and around the world.

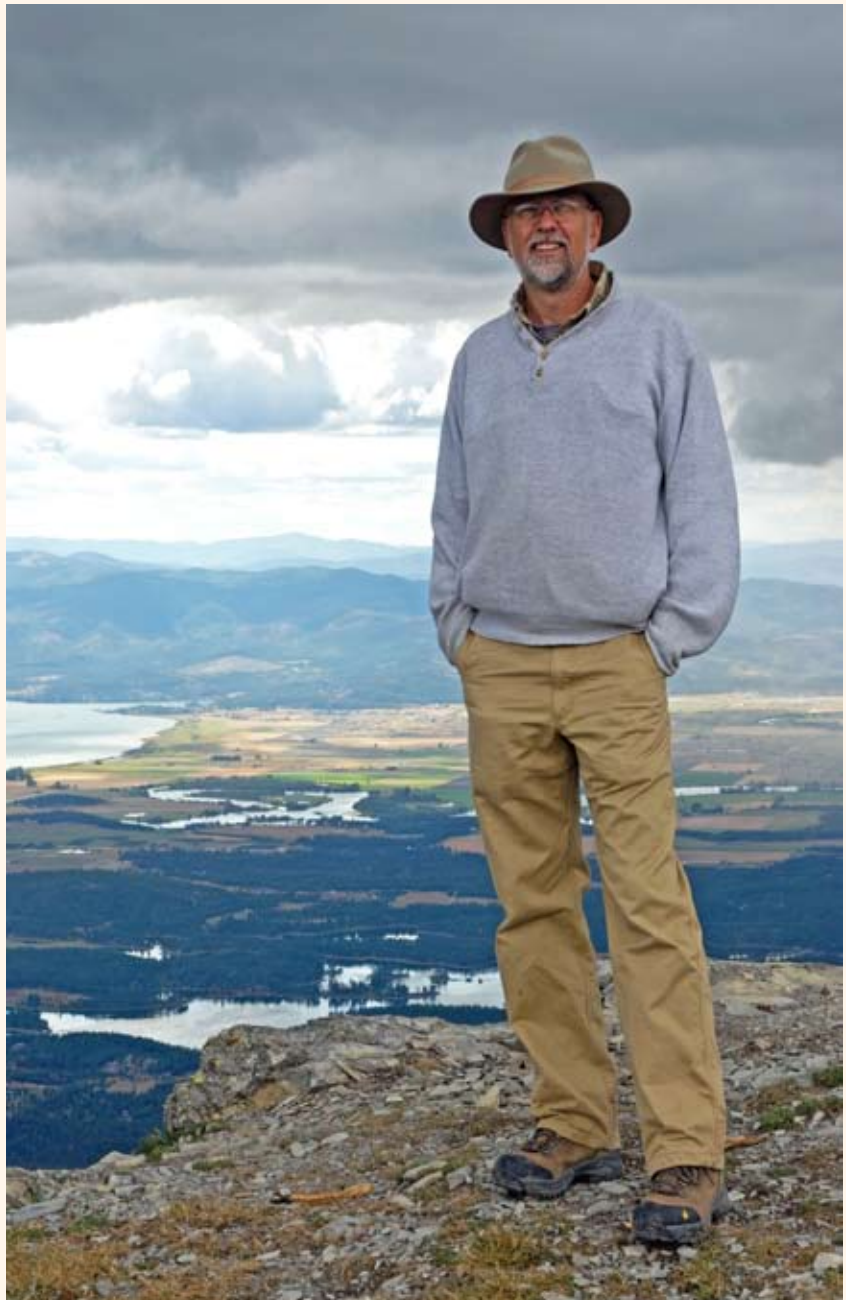
After living in this area for just a little over two years, it became immediately apparent to me what a distinctive ecosystem the Crown represents. It is also apparent that one could spend a lifetime exploring it. I have made a point to see as much of it as possible by foot, ski, or canoe, but I am grateful that so many others have spent time exploring, writing, and photographing the Crown so that those too-infrequent visits are supplemented by the information in the e-magazine.

The Crown of the Continent Initiative is important to the education of students of all ages. Whether it is through formal coursework, through creativity inspired by the Crown, or through experience in recreation, we have the responsibility to expose our students to the challenges facing the Crown and to the role it plays in our continental ecosystem.

The challenges are scientific, political, cultural and economic, and a student of any discipline can learn from the Crown and contribute to protecting it. The Crown presents an ideal interdisciplinary study subject, as indicated by the wide range of people and organizations that hold an interest in it. We must ensure that current and future generations are able to learn from and about the Crown and to that end, this e-magazine is an important educational tool. Congratulations and thank you to those involved in the Crown of the Continent project!

*Royce C. Engstrom*  
Provost, Vice President for Academic Affairs  
The University of Montana

*"The Crown of the Continent Initiative is important to the education of students of all ages...we have the responsibility to expose our students to the challenges facing the Crown and to the role it plays in our continental ecosystem."*



Provost Engstrom hikes Mount Aeneas in Jewel Basin.

RICK GRAETZ



# CO-DIRECTORS' NOTE

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*For those new to our mission and work, and as a brief review to our continuing readers, the following is intended to provide a succinct description of what the University of Montana's Crown of the Continent Initiative is all about.*

## WHAT DO WE UNDERSTAND BY THE TERM CROWN OF THE CONTINENT?

In concert with many others who study this region, we regard the "Crown" as encompassing the 250-mile-long run of country straddling the Continental Divide from Crow's Nest Pass and the Elk River headwaters in Canada south to Rogers Pass Montana and the Blackfoot River drainage—bordered on the east by the Rocky Mountain Front of British Columbia and Montana and on the west by the Jocko, Mission and Flathead valleys, north through Eureka and the Tobacco Valley, all the way to Fernie, British Columbia.

The Crown is one of the most intact and pristine ecosystems remaining in the United States. This unique land is a microcosm of almost all of what the undisturbed landscape of the interior American west once was; every type of landform found west of the Great Plains and east of the West Coast is gathered here. And virtually all of the wildland population—big game animals, birds of prey, and small creatures are found within its confines. It is among other things a first-class natural laboratory for research scientists and scholars of many kinds. It is also a fertile source of stories that are worth telling, again and for the first time.

## SO WHY DO WE STUDY THE CROWN OF THE CONTINENT?

One can respond simply: because it is special and because it is here. Other important reasons, however, are far more specific and far more extensive.

The Crown is a place where, in many of its regions, people of all political persuasions and interests have learned to work together for the sake of greater understanding, appreciation and conservation. Not much good can result from individual efforts or interests without considering the concerns and perspectives of many others.

We've learned this well in the Crown.

This region of mountains and valleys reaching to the prairie in the east is one of the most important areas in North America to study the interactions among the great Nations

## WHAT HAS THIS "CROWN OF THE CONTINENT INITIATIVE" ACCOMPLISHED SO FAR?

With the University of Montana serving as the hub of a "Crown" collaboration that includes many other organizations and institutions within the region, we have brought you the first Crown of the Continent E-publication in the form of our Crown E-Magazine No. 1 in May 2009. Three other communications were promised in a year's time. This second issue of the Crown E-Magazine that you have before you follows our first issue of the Crown E-Notes, which appeared in Fall 2009. Another issue of the latter is in the works and will appear in May and on time to celebrate Glacier National Park's 100th birthday. These publications, with their collection of photographs, stories, articles, reviews, and updates, are a major way in which we are attempting to fulfill our mission and contribute to a much better understanding of this complex and fascinating region in which we live, work and play.

For those of you who may have missed the two previous publications, links are provided at the end of this note. Our next major efforts include the imminent "going live" of our Crown of the Continent website (see facing page) and the publication of a printed book on the Crown of the Continent, estimated to appear in Spring 2011. That book will be a collection of articles, stories, photographs, and maps, written and contributed by researchers, scholars, authors, and artists representing the very best and most important work being carried out in and about the Crown.

who lived in this landscape long before whites crossed the Mississippi River as well as the history of interactions between the Native peoples and the Europeans who came here and, often, stayed.

The Waterton-Glacier International Peace Park segment at the center of the Crown of the Continent offers a living laboratory for climate change study of the highest order.

Although most of the Crown is pristine and protected, certain areas accentuate the urban/wildland interface issues and growth dilemmas and provide opportunities for important studies that can help solve some of them. (Continued)

## AS WE CONTINUE THIS WORK, WE DO ASK FOR YOUR HELP.

We bring this E-Magazine and other online publications to you free of charge. Yet, we certainly won't reject any donations as large or small as you might consider sending our way to support this important Initiative.

**\$5, \$10, \$25 or whatever amount you feel you can afford will be put to good use as we seek to expand our collaborative efforts.**

You may send such donations to the  
University of Montana Foundation,  
Brantley Hall, Missoula, MT 59812, USA,  
with a notation of "Crown of the Continent Initiative" on your checks.

### FURTHER:

The Crown is an integral part of a proposed Y-to-Y corridor that will allow wildlife migration from the Yellowstone to the Yukon and, as such, habitat and connectivity can be studied up close and productively in the Crown of the Continent.

Its loftier reaches, such as the Missions and the mountains of Glacier National Park, are living laboratories for studying the work of glaciers and the impact of climate change.

Because of the accessibility to the Crown's "big waters," such as the Flathead River system, the Sun, Teton and Blackfoot Rivers, as well as Flathead Lake, research in areas such as the impact of climate change and human activity on rivers, lakes, and their fisheries and habitats can be and is readily carried out.

Finally, the stories, art work, and photography of and about the Crown provide us all with the chance to get closer to this marvelous place, discover new things about it, reflect upon our relationship with nature, wilderness, the outdoors in general, be both awed and inspired, and perhaps moved to explore it and ourselves even further.

In future issues of the Crown E-Magazine, the Crown E-Notes, and on our new Crown website, we will continue to look at these and other aspects of the Crown more in detail.

*Rick Graetz and Jerry Fetz, Co-Directors*

The University of Montana Crown of the Continent Initiative  
Department of Geography, The University of Montana

### E-MAGAZINE, SPRING 2009

[http://issuu.com/crown\\_of\\_the\\_continent/docs/spring2009](http://issuu.com/crown_of_the_continent/docs/spring2009)

### E-NOTES, NO. 1

[http://issuu.com/crown\\_of\\_the\\_continent/docs/e-notes1](http://issuu.com/crown_of_the_continent/docs/e-notes1)

### WEB SITE

<http://www.crown.umt.edu>

# The Swan



# Range

By Rick and Susie Graetz

Photo by JOHN LAMBING

*They are what mountains should look like —*

a formidable barrier, whose sheer west face climbs above the Swan Valley. Dense timber colors their lower ramparts. Soon, exhausted by altitude, the verdant green gives away to pale gray limestone rock. During much of the year a glistening mantle of snow crowns the upper reaches.





Fall causes the larches of the Swan Range to go from green to gold looking toward the Mission Mountains.

JOHN LAMBING

*Twice a year, these peaks of the Northern Rocky Mountains celebrate the seasons in special dress —*

in autumn, framed by a deep blue sky, the stately larch trees that dominate the forests turn from brilliant gold to orange, contrasting sharply with newly fallen snow. Later, after a winter respite, the promise of the spring signals the larch to bring forth their needles. Their delicate mint and lime green colors stand out among the dark conifers and snowy summits. Certainly this massif would have to be considered one of the most beautiful in Montana.

In geologic-speak the Swan Range crops up on the western edge of Montana's Overthrust Belt, where older rocks slid east over younger layers. Stone here is the oldest found: pre Cambrian sediments. Various ice ages carved out cirques, tarns and arêtes, and a few hardy glaciers still cling to north facing walls and depressions.

This splendor provides a grandiose western boundary for the revered and legendary Bob Marshall Wilderness that extends from the Swan crest for more than 60 miles east toward the Rocky Mountain Front. And while the west face of the range is not part of the designated wilderness, it is a wild

country—free of roads—deserving of such status and indeed part of this entire wilderness eco-system.

Within Bob Marshall Country, the Swan Range stretches 130 miles from the 7,234-foot Columbia Mountain on the north, a peak just south of Columbia Falls, to the 8,062-foot Danaher Mountain near Highway 200 at Clearwater Junction. This distance is measured along the apex of the range.

The northern 50 miles of the Swan Range lie outside the wilderness area. Many parts of it, especially the east slopes coming out of Hungry Horse Lake, have been heavily logged. But, out of Columbia Falls, trails run south along the top of the range and reach some fun backcountry.

A 15,349-acre island of wild country, the Jewel Basin Hiking Area, lies near Big Fork—and what a gem it is. Accessible from the Echo Lake region, or from the Hungry Horse Lake side, there are at least 28 beautiful lakes to explore within the high mountain country. A specially designated Backcountry Use Area—foot traffic only—Jewel Basin's elevations range from the very climbable 7,530-foot Mount Aeneas, to a low point of 4,240 feet at Graves Creek.

Here is an example of vertically challenged mountains with great relief making up for a relatively low altitude. From the floor of the Flathead Valley, 2,945 feet, it seems as if one were viewing gigantic peaks; the rise is upwards of 4,500 feet, a respectable gain.

## *From the southern end of Swan Lake*

at Swan Village, a trail leads to the 7,406-foot Sixmile Mountain on the Swan Divide and follows the crest south to Inspiration Point and Pass, the western border of the Bob Marshall Wilderness and a major route into its northern sectors. Other roads, visible on Forest Service maps, also lead to paths that eventually reach this divide route. From Inspiration Point south, the range becomes more spectacular and much wilder. The canyons are extremely steep and restricted with torrents of water flowing through them in the spring. Just south of Inspiration Pass, the 9,289-foot Swan Peak, a major sentinel of the Swan Range, rises. Swan is one of the few summits in Bob Marshall Country holding an active glacier. This field of ice—Sunburst Glacier, found along the east and north sides of the peak, is kept alive by intense, heavy winter snowfall. Nestled far below the peak and glacier is Sunburst Lake, a comely, high cirque treasure.

South of Swan Peak, Lion Creek Pass offers another important entrance into the Bob by way of Palisades and Little Salmon creeks. The route up the Swan-face side goes through some beautiful stands of giant cedars. Farther down-range, Smith Creek Pass is another course to the Swan summits and eventually into the South Fork country. The trail joins up with the one coming over Lions Creek Pass to Little Salmon Creek.

Just east of Condon, 9,356-foot Holland Peak, the highest pinnacle in the Bob Marshall, reaches to the clouds.

Considered by many to be the most spectacular Swan Range summit, Holland Peak sits amid a jumble of other towering mountains and is characterized by two huge waterfalls from the Upper and Lower Rumble Creek lakes just below its west face.

The east side of this massif features several active glaciers; however, Forest Service maps depict more than actually exist.

For example, those shown in Albino Basin, just to the north of Holland Peak, are no more than persistent snowfields that disappear some years.

Holland Peak, like many other points along the rise of the Swan, requires one to earn the privilege of summiting it. The relief here ranges upwards of 5,500 feet, and much of it is difficult and nearly vertical.

South of Holland Peak, extending for many miles, sculpted basins hold high cirque lakes such as Terrace, Woodward, Lick, Pendant, Upper Holland, Koessler, Doctor, George, and Necklace, to name a few. To the people of the Swan Valley this is Montana at its best.

Trails out of Holland Lake are steep and get one into the backcountry in a hurry, but due to distance, most trekkers use horses. Most packers take Gordon Pass from Upper Holland Lake down Gordon Creek into the South Fork of the Flathead or trace the Pendant or Necklace lakes to Big Salmon Creek and Big Salmon Lake. Despite Holland Lake's place as a starting point for many trails, we prefer to hike the Bob Marshall and prefer from east to west, ending at Holland Lake.

South of Holland Lake many more trails climb through the range into "The Bob," and Forest Service maps outline them well.

Because of the terrain, the eastern flank of the Bob Marshall offers more road access to the wilderness boundary than does the Swan side. In general, the west side of the Swan has few roads because of its steepness and unstable soils. For the most part, those that do approach the face lead to trails that climb through gaps into the wilder-

ness. However, there is ample access in the lower reaches of the Swan Valley that allow motorized-vehicle enthusiasts to get a closer look at some of the steep slopes and high peaks of the Swan Range. Loop-logging roads off of the Swan Highway rise to elevated ridgelines that open to excellent views.

The Swan Range, then, just like the Rocky Mountain Front on the Bob's other side, offers something for everyone.



Google™ Maps

130 miles long – 75 mountain lakes – home to 9,356



# 15,349-foot Holland Peak and 15,349-acre Jewel Basin Hiking Area



## *All of the Bob Marshall Country—*

the contiguous 1.5 million acres of the Bob Marshall, Scapegoat and Great Bear wilderness areas, plus about 1 million acres of de-facto wilderness—has been “sacred ground” to backcountry travelers since at least the first years of the 18th century. Trails were initially blazed by the great Native American nations as they crossed the Swan Range on their way to the prairie to hunt bison. Later, trappers, hunters and early-day Forest Rangers followed these initial wilderness “highways” and created some of their own.

In the cathedral hush of this now protected wild land, the spirits of the earliest mountain travelers are felt. Entering it through the historic passages below the pinnacles of the Swan Range is an appropriate ritual.

This grand gathering of mountains, creeks, rivers, lakes and valleys was special to so many that long before wilderness designation was on the public mind, the US Forest Service set aside three primitive areas—The South Fork (Flathead) in 1931, The Pentagon (the Big River, Middle Fork of the Flathead) 1933, and the Sun River in 1934. And in August 1940, the agency linked them together, added some additional land and established the 950,000-acre wildernesses.

Before you ascend into the forests climbing east of the Bob, give thanks to those who came before you and who assured that the country you are about to trek would remain forever wild.



# The Grave Creek Trail

By Darris Flanagan

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## ◆◆ EDITOR'S NOTE ◆◆

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In all of North America, no other landscape outside the Crown of the Continent can boast of more contact with its original owners—the American Indian nations.

One of those interactions with the landscape was travel. Trails used by tribes living in the forests and mountains of the western Crown regions were constantly used as thoroughfares. The annual “Going to Buffalo” ritual stands as one of the more evident uses of the mountain trails. The “western tribes”—the Gros Ventres, Kootenai, Salish and others—sought the bison that roamed the prairies stretching east of the Northern Rockies. This custom necessitated crossing the Continental Divide through difficult terrain and high passes.

Numerous routes crossed the Divide, but the two main paths frame the Crown of the Continent. The first follows the northern-most realm of the Crown in British Columbia above Crow’s Nest Pass, and the more well-known “Road to the Buffalo” traces the Crown’s south perimeter along the Blackfoot Valley.

The following article traces a trail used primarily by the Kootenai (Kutenai in Canada) that began near present-day Eureka, Montana, in the Tobacco Valley or Tobacco Plains on the Crown’s northwest edge. The path, dubbed the Graves Creek Trail, leads across some of the Crown’s most spectacular scenery to the prairie near Chief Mountain, where the heights of the Northern Rockies rapidly descend to the grasslands and the Crown’s eastern rampart.

This article is a chapter excerpted from a great book—*Indian Trails of the Northern Rockies*, by Darris Flanagan, originally from northwest Montana. Flanagan, a former history teacher, was raised on a ranch near the “Tobacco Plains” and in the heart of Kootenai Nation lands.

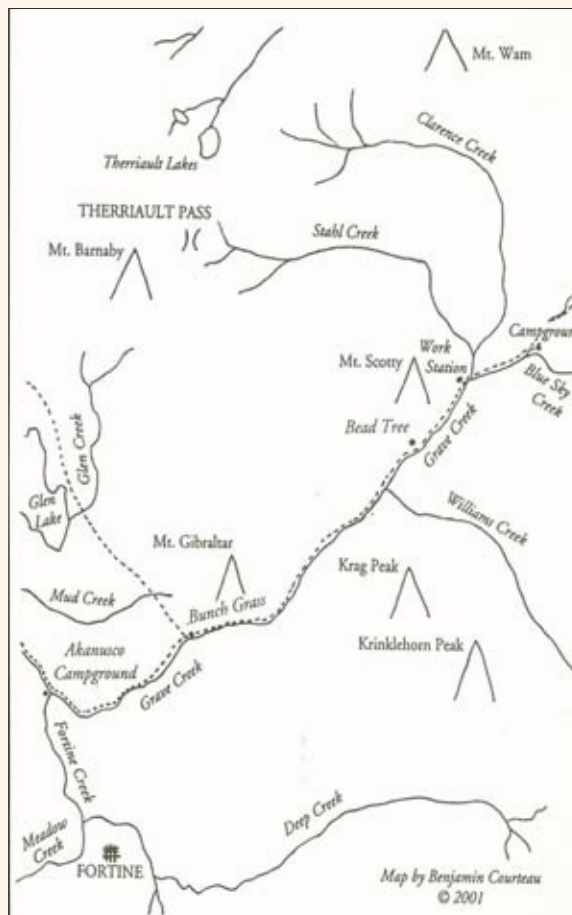
What follows is reprinted exactly as it was written. See endnotes for how to obtain the entire book.

The South Kootenay Pass Trail was a narrow, rugged, and in many places rocky, mountainous passage used by the Kutenai Indians as a thoroughfare to the plains. The journey necessitated the crossing on two passes, numerous rivers, creeks, and streams, two mountain chains, the Continental Divide, and in the end invading enemy territory.

Like many routes the trail had several names; most related to the mountains it crossed. The most common names are Boundary Pass, South Kootenay Pass, and the Grave Creek Trail. To the Kutenai, the trail was simply the “Buffalo Cow Trail” because it connected their Tobacco Plains homeland to their buffalo hunting range. One would assume the trail started at the camping site at the mouth of Grave Creek where it joins with Fortine Creek to form the Tobacco River. It didn't. That campsite, the original ancient Kutenai home before they moved north to the Tobacco Plains, was for later Kutenai a wintering campsite. Both the campsite near the mouth of Grave Creek and Grave Creek itself were called “Akanusco” which means Swift Current or Flying. The first accurate maps from the Boundary Survey in 1860 use the spelling Ak-O-NO-HO.

A winter camp was a place of work. Kutenai braves fished and hunted and artifacts, like hammerheads and scrapers, confirm that women prepared meat for storage at the camp. Hammerheads were made by tying a wood handle with sinew around a groove notched near the center of a pounder rock, and then wrapping it with green hide which would shrink and hold tight. The women used hammerheads to pulverize meat.

Tools made from flint from several quarries are found including a reddish tone from an unknown quarry located to the south of the Flathead Valley maybe in the Blackfoot River drainage. The actual site has not been located, but flint was a trade item along the Fort Steele Trail. More numerous, is flint from the Top of the World Quarry near Fernie, British Columbia, at the head of the Bull River. This quarry is the most important tool for dating the Kutenai; a legend recorded by Chamberlain and Boas in the middle of the 1880's explains the switch from use of other sites to Top of the World. After this date, about 3,000 years ago, the Kutenai used little other flint. Sixteen hundred years ago with the advent of the bow and



arrow, all tools and points were made from this quarry rock. Archeologists use Top of the World flint to trace original Kutenai territory. Flint does not appear to be abundant at the location, maybe, because the earliest Kutenai used wooden points according to Turney-High.

Early Grave Creek resident Charlie Holly recalled further evidence of ancient habitation. Tipi rings were located on top of the hill on the east side of the river a hundred yards down-creek from the Tobacco River Bridge of today. In early spring the Kutenai departed Akanusco for spring fishing and berry picking campsites; left behind were the hammerheads, scrapers, and other stone implements for the next campers. The same band or families did not routinely use the same wintering site.

When longer days and spring warmth caused the snow to disappear, grass to emerge from its winter dormancy, and flowers to

bloom, the Kutenai made preparations for the spring buffalo hunt. Preparations included repairing or making new parfleches to carry the few supplies needed and for packing the buffalo meat on the return trip. A store of dried roots and berries and a small quantity of dried meat were stored in a parfleche.

June, the Moon of Strawberries Ripening, signaled time to assemble at the campsite “Akinnu Lamqanwock” or snake willows. The campsite was near a pond on the west side of upper Indian Creek north of Eureka. The heads of households came together in a “smoking party” to decide future movements and activities with the chief. Leaders from Flathead Lake, Libby-Jennings, and Cranbrook or Joseph Prairie bands would often gather in the chief's lodge. At the meeting, the Chief set the departure date and the route. The warmer climate of Snake Willows and its rich soil supplied abundant grazing, which was important because the mountain passage afforded few locations with grazing for such a large number of horses. Feed determined the location of stops. Even as the days lengthened



The North Fork from near Kintla Lake, where the Kutenai set camp on the Grave Creek Trail.

and warmed, the Kutenai patiently waited, knowing that snowdrifts would block their path through the higher snow capped mountains. According to Chief Paul David, runners would ride into Grave Creek Canyon to the first mountain; if a large rockslide on top was snow free, the mountain passes would be passable. Usually by mid June, the chief would order the assembled mass to begin their journey.

As many as eighty lodges of Upper Kutenai, including the elderly and children (this would be between four and five hundred people), would depart for the plains. For safety, the few who stayed behind journeyed southward to the Jennings

or Bonners Ferry bands to fish and avoid the raiding Blackfeet. The traveling camp required many horses. Early Canadian explorer Blakiston reported that the Kutenai possessed more horses than tribes of the east side, a “camp of only six tents, having about 150 old and young” horses. Early Tobacco Valley forest worker, Bert Wilke, estimated that 500 to 600 horses were needed for 80 lodges to take on the endeavor of the mountain crossing.

After leaving the Indian Creek campsite, the Kutenai traveled south along the foothills of the Whitefish Range on the Fort Steele Trail. Soon after Sinclair Creek, the Kutenai



RICK AND SUSIE GRAETZ

“As many as eighty lodges of Upper Kutenai, including the elderly and children...between four and five hundred people...would depart for the plains.”

swinging mostly above and in a few places below the road. The swings were wide, often staying about the same contour. One of the first of these swings was towards Box Canyon on Gibraltar Mountain. The trail then drifted back towards the creek above the Grave Creek rock quarry. A section of the trail is still visible above the quarry. From the quarry, the trail made a gradual descent to the western edge of the Birch Creek Campground of today. Much of this area is prone to slides. Pioneer forest worker Joe Eastland (Johnson 1950:174) noted that “in some places the tramping of the Indians and their ponies and pack trains has worn the Grave Creek Trail down the mountain from the first trail bank as much as forty feet. In places where the trail has been changed on account of snow slides blocking the way with down timber, there are trees growing in the abandon trail that were at least one hundred years old in 1900.”

Northeast of Birch Creek Campground the trail passed the “Bead Tree.” The tree guarded the grave of an Indian papoose (baby). The date of death is uncertain, but the grave was important to late nineteenth century Kutenai. The trail passed near the grave that was under the protective branches of the large larch tree. A small square 2.5-inch long nail had been driven into the tree on which passing Kutenai hung ropes of beads and trinkets as a memorial. Early Tobacco Valley settlers in turn took them home to their own children.

Next the trail followed a ridge toward the river. Where the path would have crossed the Grave Creek Road of today, the Forest Service erected a sign. The trail continued to fluctuate above and below the road as it paralleled the river to a spring below Cat Creek. Here the Kutenai watered their many horses as it was, apparently, the first water encountered on the route after leaving Bunch Grass Flats. A short distance after Cat Creek the trail made its first of four crossings of the river. The trail remained on the south side of Grave Creek. Just down river from the Clarence Creek outlet was the second and third crossing of the river. On the flat bench terrace above the junction was a possible campsite.

Fording the water for a third time, the trail then paralleled the river on the north to a campsite at Blue Sky Creek where it crossed the creek to a campsite. All four requirements for a camping spot were nearby: wood for fuel, brush for smoking meat, a water supply, and grazing for their horses. When brush was too dense the Kutenai set fires to keep campsites clear or to open meadows for grazing. Few campgrounds were needed

followed the Grave Creek spur. It continued in a southeasterly direction to Bunch Grass Flats at the mouth of the Grave Creek canyon. This beautiful park-like clearing was a deep unbroken carpet of bunch grass under the spaced pillars of yellow pines. The openness of the flat provided a chance to reorganize before heading into the narrow canyon. A stone monument once marked the spot where the last of a Blackfoot raiding party was slain. The 1700s battle occurred when the raiding party found their escape blocked.

Beyond Bunch Grass, the trail ascended into the canyon, the first 20 to 25 miles parallel the Grave Creek Road of today,



for the four-day trip to the plains by horseback, but snowshoe groups required ten. Winter camps were much smaller and it was probably a winter site that Thibodo described “Saw a number of Indian tipis poles near our camp very bad place to camp.” Unfortunately, no other campsites have been recorded along the Grave Creek Trail and we can only guess at a location’s value to the Kutenai. Early forest ranger Shorty Young reported he found a horse bell at Blue Sky used by the Kutenai to locate their horses just as settlers hung a bell on a milk cow to locate her. (Vukonich) Olga Johnson noted that the Northwest Boundary Commission also camped at Blue Sky Creek.

Leaving Blue Sky the trail follows Grave Creek to Mountain Meadows, now the Sons of Rest Slide Area. An acre in size, the meadow was a possible camping spot, but how the Kutenai used this opening is unknown as no artifacts were found by a 1971 survey. The meadow is now divided by the road and is not in a natural state. It may have been too small to be useful except for the winter trip.

The number of horses on the journey probably obligated the Indians to travel on to the larger meadows on the North Fork of the Flathead side of the Bald Mountain Pass. In later years the meadow was important for many of the white explorers along the route.

A short distance beyond Mountain Meadow the trail turned eastward, crossed the creek, and departed the friendly banks of Grave Creek. The trail paralleled Lewis Creek on the north as it climbed to the summit of the divide between Grave Creek and the North Fork of the Flathead drainages. This pass

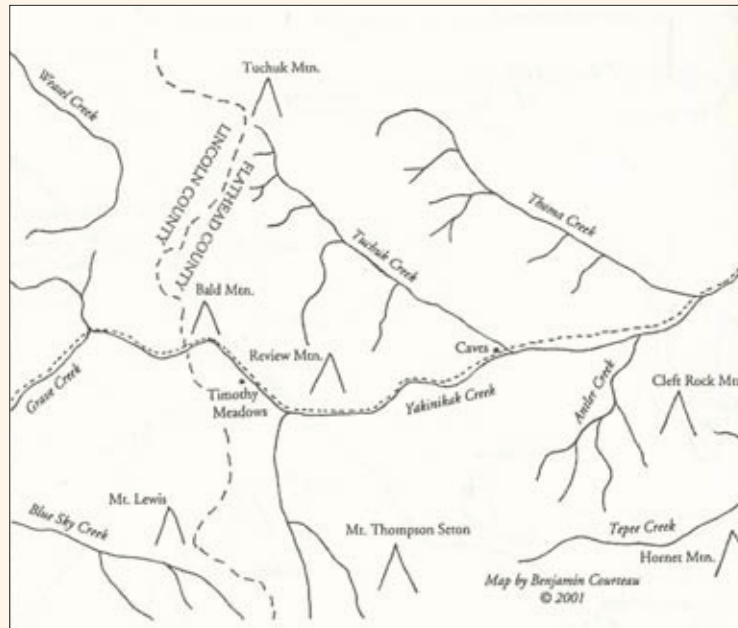
is listed on maps as Boundary Pass, Grave Creek Pass, South Kootenie Pass (notice the spelling to distinguish from South Kootenay Pass), and Bald Mountain Pass. At the summit the trail crossed rockslide after rockslide. Early pioneer and Forest Service packer Bert Wilke noted “... where the trail crosses the summit, you can see the scars of three old trails, one above the other, where the course of the trail has been changed on account of obstructions.” (Story of Tobacco Plains) A likely camping location was just east of the Bald Mountain Pass. The trail descended quickly into Timothy Meadows just a half-mile from the pass. This five-acre meadow is the first opening of any size when coming from the west. No in-depth archaeological study has been done on the meadow. Where the trail paralleled Lewis Creek, crossed Bald Mountain, and descended to the North Fork, it traversed a major avalanche area. Snow-

mobilers of today avoid the area because the danger of a snow slide is too great. The Kutenai could not avoid the area. Their January departure helped because that was before the greatest accumulation of snow and their late return was after many avalanches would have slid out. Quiet morning travel also help to avoid many avalanches, but death by avalanches was common.

After Timothy Meadow the trail descended Nokio Creek to the north bank of Yakinikak Creek. Yakinikak is Kutenai for “Trail of the Moose.” Near Tuchuck Campground (Tuchuck is Kutenai for “thumb”) the trail passed near three caves. Their historical significance for the Kutenai is unknown, but early trappers, like Bert Wilke, would stay in the caves. Smoke on the cave wall indicates use, but did the Kutenai also use them for shelter? No archaeological sites have been discovered between Bunch Grass Flats and Bald Mountain, but several exist in North Fork of the Flathead drainage. Near the Tuchuck caves is a small rock shelter that contains a single Indian

pictograph or painting of a bird-like figure. Just a few miles further another small shelter was discovered with a faded painting of a geometric shape.

A short distance east of the caves Yakinikak Creek flows underground and is lost except during spring runoff. When the river re-surfaces it has a new name, Trail Creek. Residents of the North Fork report there was a purification site on the banks of Trail Creek that the Kutenai used to ready themselves for the buffalo hunt. (Wilson) The route follows Trail Creek to the North Fork of the Flathead, Akinesahtl or “Wolf Tail” to



the Kutenai. A river crossing was always perilous and the high water of June made a crossing even more dangerous. Old-timers mentioned a method used to check an unknown creek or a flood-swollen river. An old Indian woman was placed on the least valuable horse and sent across the river. If she made it, it was safe, the theory being that the loss of either was not harmful to the tribe. (Johns) Although cruel by today’s standards, in times of peril the tribe’s welfare was placed above an individual’s welfare.

On the return trip the ford, near the mouth of Kintla Creek, was dangerous with loaded pack animals. Here and at other large streams too dangerous to cross with their heavily burdened horses, the Kutenai used a lodgecover raft to float the meat, equipment and supplies across. The raft was a skin hide from the tepee cover that was spread open. The supplies were



An eastern view from one of the American Indian trails from the Whitefish Range.

RICK AND SUSIE GRAETZ

placed inside and then the hide was rolled up and tied with a leather strap. Only a bison hide was suitable, as elk lodgecovers would become water soaked. This raft was called “bundle pulled through the water” because a brave towed it from the back of his horse.

The North Fork of the Flathead does not appear to have many camping locations. The valley itself is relatively wide, brush-choked, and marshy, according to Fredlund’s 1971 study. The valley is “generally an unlikely and uncomfortable place to camp.” Every likely location along the immediate river terrace was checked and only miscellaneous artifacts were found. Lateral drainages from the west were examined with negative results, but to the east drainages from the larger lakes all had artifacts. The Kutenai probably chose campsites further east, although the possibility exists that river campsites were destroyed, washout, or covered by brush. It would not be surprising if the Kutenai camped further east considering the number of large lakes available within a few miles.

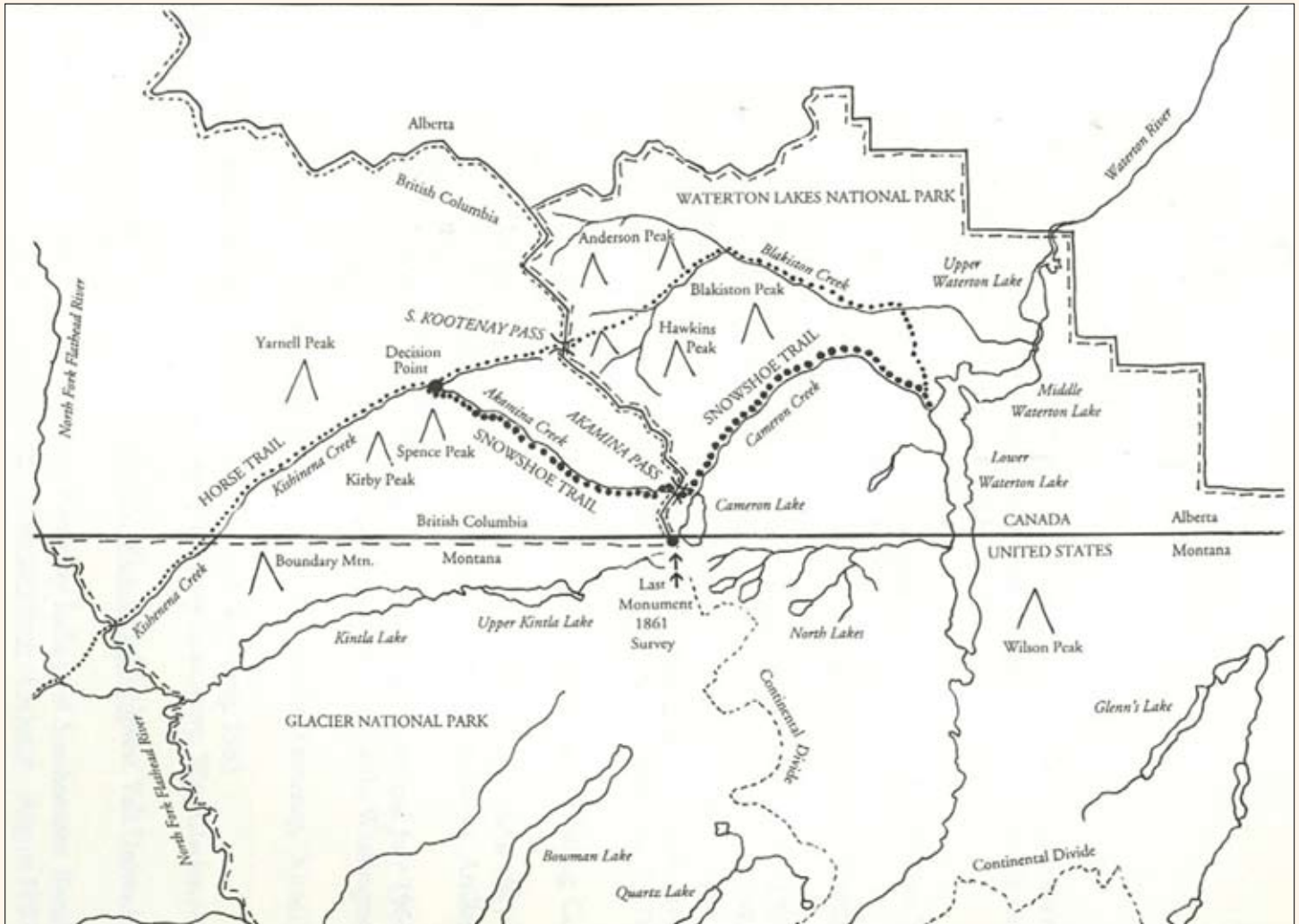
Once the river was forded, the trail traced the North Fork of the Flathead northward for a few miles. In this locale Fredlund reported there were two Indian burial sites, but time restrains prevented him from locating the graves. He could not have found them anyway. Larry Wilson reports that a 1948 flood eroded the bank and destroyed the two graves. The trail then turned eastward to follow Kishenehn Creek northeast to the

present border between the United States and Canada. This isolated northwest corner of Glacier National Park may be the most natural and least disturbed part of the Grave Creek Trail as very few visitors ever hike into this corner of the Park. Kishenehn is a Kutenai word meaning “no good.” Olga Johnson related the story of a Piegan boy, Kishenehn, who was adopted by the Kutenai and raised to manhood. During a time of peace between the two tribes the young man returned to his people and began to harass his benefactors by stealing from them when they encountered each other. Two Kutenai youths, one of whom was Unknown Bear, decided to end this nuisance. While going to the buffalo they met Kishenehn on this creek that now bears his name. When he tried to bully the Kootenai youths they told him to knock it off. Kishenehn laughed as he thought he was superhuman and arrows would bounce off him. Unknown Bear’s didn’t. Unknown Bear later became chief and took very good care of his people. Kishenehn gave his name to the creek. Hence the meaning “no good.”

The Kishenehn has a name change after crossing the border. On Canadian soil the creek is spelled differently, with a different meaning—Kishinena meaning “balsam” or “white fir.” Kishinena Creek heads high into the mountains towards the peak of the same name. The path crossed and re-crossed the stream making this section one of the most miserable for travelers. The trail north of the boundary skirted the edge of the

“For centuries this trail was the domain  
of the Kutenai.

Thousands of people traversed it  
to whatever adventure awaited them.”



Akamina-Kishinena Provincial Park of today in southeastern British Columbia. Kishinena Creek was followed to its meeting with Akamina Creek. This junction was a significant point. The horse trail diverted northward. The snowshoe parties turned southeast to follow Akamina Creek to Akamina Pass. Akamina means “Low Ravine Pass” and was less steep than the horse route. Horses could not use this route because the pass was boggy and muddy in the summer. Once through the pass, the snowshoe parties descended the Atlantic side of the pass to Cameron Creek, which was followed to Waterton Lakes.

This horse trail departed Kishinena and diverted northward. After winding up the mountainside the trail snaked through the South Kootenai Pass on the Continental Divide. The Black-

foot name for the pass is “Kutenai ozita'miso” meaning “where the Kutenai go up west.” No obvious Blackfoot sentry post has been discovered at South Kootenay Pass, but this favorite Kutenai pass was presumably carefully observed.

As the trail descended, it followed waters flowing into the Atlantic Ocean. The first of these Atlantic waters was encountered after a mile descent, it was the brook Lone Creek. The trail followed Lone Creek to Blakiston Creek, which descends through a valley lying between two picturesque mountains, Mount Blakiston, the tallest in Waterton Park, and Anderson Peak. The path passed Blakiston Falls and a short distance later had a junction with the Red Rock Creek Trail. The Red Rock Trail was a spur off the Grave Creek Trail that instead

of passing through South Kootenay Pass tracked about ten miles north to go through Sage Pass and descended Bauerman Creek to a meeting with Red Rock Trail. This detour was used little by the Kutenai, but became increasingly important to white settlers.

Very gentle is a way to describe the sixteen-mile descent along the scenic Blakiston Valley. The valley was called Izit-awakozihp meaning in Blackfeet language “where we fought the Kutenai” referring to a skirmish about 1810. Abel Gravelle, Chief Two Feathers, told his son Ambrose about the battle. After traveling through South Kootenay Pass a party of Kutenai and Flathead met to trade with the Blackfeet.

Stopping to trade was very common, but unfortunately so was the end result. The Blackfeet started taking objects belonging to the Kutenai. Previously warned not to fire until a certain old man did, the Kutenai endured the abuse until the old man raised his gun into the air when his blanket and cartridge belt was being taken. The old man yelled “You fools! Don’t you think I can pull the trigger!” He fired. The Blackfeet

were short of ammunition, as the trader had failed to supply them, but the Tobacco Plains trader had heard of the Kutenai plans to ambush the Blackfeet and supplied them with all that was needed. The Kutenai chief, Not-A-Grizzly, understood the Blackfeet language and commands and gave his fellow warriors the information so they could anticipate the Blackfeet tactics. Thirty Blackfeet warriors were killed, but the Kutenai suffered only four wounded. A few years later Not-A-Grizzly was not so lucky and was killed in a battle with the Blackfeet.

The trail followed the Blakiston River to Waterton Lakes. This was generally recognized as the end or start of the trail. The pebble beach on the shores of Upper Waterton Lake was the preferred Kutenai campsite; seldom did they camp at Lower Waterton Lake. Upper Waterton Lake was called the “Long Lake,” until the international boundary survey in 1878 when it was named “Lake Cut in Two.” The trail from McDonald Creek over Kootenai Pass followed the west shore of Waterton Lake to connect with the South Kootenay Pass Trail at the Kutenai campsite.

## Spurs and Intersecting Trails

A network of intersecting trails passed through the North Fork of the Flathead River bottoms from the Wigwam Valley south of Fernie, British Columbia, to the Swan River and South Fork of the Flathead areas of Montana. Trails led to Logging and Quartz Lakes in Glacier National Park, but were not used to cross the Continental Divide. Bowman and Kintla Lakes were also campsites. There were other spurs like the Sage Pass route that ended at Waterton Lake. One of these was a trail that turned eastward and followed Kintla Creek instead of turning north to Kishenehn Creek. This route traversed Boulder and Brown’s pass giving the traveler access to the southern end of Waterton Lakes. This very difficult route was little used except by mountain goat hunters as it meant crossing Boulder Pass, the highest in Glacier Park at 7,910 feet or 2,397 meters. The Bowman Lake through Brown Pass spur was easier traveling, but little used except for small Kutenai hunting parties in the fall.

For centuries this trail was the domain of the Kutenai. Thousands of people traversed it to whatever adventure awaited them. What stories they could tell! Little remains from the Indian voyages into this beautiful area. An early Tobacco Plains resident, John Vukonich, reported that Kutenai ponies grazed in the many bare spots filled with bunch grass on the face of Gibraltar Mountain at the entrance of the Grave Creek Canyon. The bunch grass has disappeared; although locals still refer to the opening at the entrance to Grave Creek as Bunch Grass Flat. The old larch tree guarding the papoose grave was bulldozed over during a Forest Service logging operation. The spike and some beads were rescued. The trail is basically obliterated from logging, brush, road building, slides, trail construction and nature. Occasional remains of the trail can be located for those who search. The easiest and most accessible site is on Bald Mountain Pass where the trail can easily be followed for a few hundred yards. Another easily accessible section is above the road in the Tuchuck Campground area. Many parts of Waterton-Glacier Trails followed the ancient path although they have been widened, smoothed, and leveled. The peace and solitude of the trail ended suddenly in 1858 when Thomas Blakiston “discovered” the trail.

*The publisher of Indian Trails of the Northern Rockies is Stoneydale Press Publishing Co. of Stevensville, Montana. Visit their web site at <http://www.stoneydale.com>. To order, call 1-800-735-7006 or e-mail [stoneydale@montana.com](mailto:stoneydale@montana.com).*





# VIEWS OF THE CROWN:

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## JOHN LAMBING

This issue features the work of photographer John Lambing of Helena, Montana. John conducted water-quality studies as a U.S. Geological Survey hydrologist until his retirement in 2009. Since moving to Montana in 1981, he has photographed almost every corner of the state. In 1990 he began using a Hasselblad medium-format film camera that he continues to use to this day. To keep up with publishers' demands, he is now digitizing all of his work.

Lambing's work has appeared in several magazines and conservation-oriented publications. His images also are showcased in three Montana photography books published by Farcountry Press of Helena.

To request prints of the photos appearing in this E-Magazine or for special requests and projects, e-mail John at [jlambing@bresnan.net](mailto:jlambing@bresnan.net).

See additional photos of Lambing on pages six and eight.

LEFT: Spring sunrise on Ear Mountain.





Fall on Lake Alva,  
the Swan Range.





ABOVE: View of Mount Jackson  
from Preston Park, Glacier  
National Park.

RIGHT: Waterfalls on the trail to  
Avalanche Lake, Glacier  
National Park.









ABOVE: Garden Wall,  
Glacier National Park.

LEFT: Chief Mountain,  
Glacier National Park.





North Fork  
of the Blackfoot River.



ABOVE: Middle Fork of the Flathead River, near Essex, Montana.

RIGHT: Badger Creek, Rocky Mountain Front.







# PERMANENT PROTECTION

*for the*

# North Fork

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## IN THE NEWS

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By Rob Chaney of the Missoulian

With an exchange of bolo ties and Olympic mittens, Gov. Brian Schweitzer and British Columbia Premier Gordon Campbell signed an agreement in Vancouver to ban mineral and energy extraction in the cross-border Flathead River Basin on February 18.

“I’m not taking credit for this,” Schweitzer said after the ceremony. “There are people who’ve spent their lifetime working on this goal. I’ve run one lap. And now I’m handing the baton along to the congressional delegation. They have a tall order to convince their colleagues this is the right thing and the right time to do it.”

The two-page agreement commits the province and state to “prohibit the exploration for and development of mining, oil and gas, and coal in the British Columbia Flathead and the Montana North Fork Flathead River Basin, such action to be completed by July 2010.”

It covers nearly 5.7 million acres of river basin running along the western border of Glacier National Park and north nearly to Fernie, B.C.

It also covers more than two decades of negotiations over the fate of a mineral-rich and environmentally sensitive region. Schweitzer apologized during the ceremony for not being “open and transparent in all these discussions,” adding “quiet diplomacy often works.”

The negotiations include retiring existing oil and gas exploration leases in Montana and investments in gold and coal operations in British Columbia. The agreement calls for both sides to reimburse existing mining and coal interests.

“The costs are greater on the Canadian side,” Schweitzer said. “We want the U.S. government to help contribute to British Columbia’s sunk costs. We hope to be partners in that compensation.”

While most Montana mineral rights are owned privately or by the federal government, the province of British Columbia controls its natural resources. So British Columbia has more independence from its Canadian federal government to carry out the mining prohibition and reimbursement.

Montana Sens. Max Baucus and Jon Tester have already said they’re drafting legislation to back up the deal.

“I just received this agreement and will take a hard look at everything in it,” Tester said on Thursday. “But I’m always encouraged by good-faith efforts to work together to do right by Montanans - and the clean water, wildlife and mountains that make our state famous. We’re all tightening our belts and cutting costs. But I look forward to working with Brian to see that Montana lives up to its end of the bargain.”

Campbell said the agreement would boost both jobs and the environment



in the region.

“Through this agreement, we are partnering with Montana on adapting to the effects of climate change, reducing greenhouse gases and creating jobs and clean power for the West,” Campbell said. “Our natural environmental surroundings are a critical component of our quality of life.”

The deal retains existing logging and timber operations in both the state and province. And it stops short of declaring any part of the area a new national park or world heritage site.

“This preserves the long-term traditional uses in the Flathead,” Campbell said, “including ongoing sustainable forestry, hunting and trapping. This is a way we can move ahead and protect the important values of the Flathead, and maintain



The North Fork meanders from the Canadian border near Polebridge, Montana.

RICK and SUSIE GRAETZ

the quality of life for that region. People need work, and that's an important part of sustainable management."

Last year, the U.N. Education, Scientific and Cultural Organization sent a monitoring team to inspect the river drainage and neighboring Waterton-Glacier International Peace Park. Both U.S. and Canadian park advocates have been calling for an expansion of Waterton's boundaries to protect more of the Flathead drainage.

The Elk Valley drainage just to the west in British Columbia has been the site of major Canadian energy mining work for years. Campbell said that would continue.

"There are still substantial coal deposits that can be exploited, just not in the Flathead," he told a questioner after the signing.

The deal also commits the two regional governments to cooperate on wildlife protection, environmental improvements and new wood construction initiatives. During his Vancouver visit, Schweitzer said he was particularly impressed with

Canadian construction strategies.

"Last night, we watched the speedskating in the Richmond Olympic Oval," he said. "It was built with pine beetle-killed wood. The roof truss work and ceiling is remarkable, and it's all made from wood. They've got millions of acres of pine beetle kill like we do, and they've found ways of using the wood. They're encouraging using wood in all their construction."

Schweitzer and Campbell were joined by leaders of the Confederated Salish and Kootenai Tribes of Montana and the Ktunaxa Nation of British Columbia, who co-signed the agreement as witnesses. Both Canadian and American Indian tribes are considered partners in the agreement.

During the signing ceremony, CSKT council member Mike Kenmille took off his jacket to show a shirt with crossed American and Canadian flags. Schweitzer gave Campbell and his lead staff his trademark bolo ties, while Campbell shared some pairs of official Olympic Games mittens.



# Is the Canadian North Fork Finally Safe?

By Jack Stanford

Twenty-eight years ago in an article for a magazine called the *George Wright Forum*, I described Glacier National Park as “an island in a sea of development.”

The Livingston Range rises in western Glacier National Park.

RICK and SUSIE GRAETZ

By Jack Sanford

The context was the rapidly increasing population of the Flathead Valley and very heavy-handed logging activities of the “managed” forest lands around the Park, especially in the Whitefish Range and headwaters of the North Fork of the Flathead River in British Columbia. Moreover, construction of haul roads and footprint plans were completed for huge coal strip mines that would remove entire mountains of the Flathead Basin in B.C.

The North Fork of the Flathead River is the western boundary of Glacier National Park and it is designated a National Wild and Scenic River. The virgin flow of the river in the U.S. is permanently protected as a Park resource by a Federal Reserve water right. In contrast, the headwaters of the North Fork are in British Columbia (38 percent of the drainage is in B.C.), where no protection whatsoever is accorded.

This priceless headwaters landscape is commonly called the Canadian North

Fork. It is a beautiful, quiet cove of forest lands and pristine streams that has all the attributes of Glacier-Waterton country and is critical range for Crown wildlife, including elk, bull trout, wolverines, lynx and grizzly bears. But, owing to a quirk in the regional geology, the Canadian North Fork also has massive strata of high grade coal, some 8 billion tons, that is entrained with methane gas. Gold and other minerals are present in the area as well. International mining companies have long sought to extract and export these non-renewable resources, no matter what the associated damage may be to the land, water and wildlife.

In the time since my article was published, people have moved into the Crown at a rate of 2.1 percent per year. The U.S. median growth rate is 0.6 percent. The population of Flathead County alone grew 26 percent from 1990 to 2000 and rapid growth continues in spite of the recession. Visitation to GNP currently is just under 2 million people annually, most

of them following the spectacular Going-to-the-Sun Road in midsummer. People want to live and recreate in the Crown of the Continent region, with its spectacular scenery, great hunting and fishing, native cultures, clean water and open space.

In spite of the population growth, the back country of GNP and the adjacent wilderness areas overall are not crowded, wolves have returned and a recent study showed that grizzly bears are thriving. The forest products industry in the U.S. has developed lower impact-logging machines and implemented rigorous “best management practices” that have substantially reduced logging impacts. Moreover, the massive clear cuts of the 1970s and 80s around the park have reforested naturally or were planted and the new forests mix with remaining old ones, creating a mosaic of stands that is very beneficial to wildlife. The same result is true of the 1988 Red Bench Fire on the North Fork and more recent wildfires around the region. The US Forest Service

currently is reclaiming many miles of logging roads that are no longer needed, and they are installing culverts that allow fish passage—practices that simply did not exist at the time of my article. The Crown of the Continent region is, of course, as startlingly beautiful as ever and for most folks on both sides of the border the quality of life is as good or better as anywhere in the world.

One huge problem for the Crown just cannot seem to be solved: the powerful push to mine the Canadian North Fork into oblivion. The initial mine to be built at Cabin Creek was stopped in the 1980s by an International Joint Commission inquiry that concluded the impacts of the mine would be so pervasive that wildlife, fisheries and water quality would be seriously impacted in GNP and on down to Flathead Lake.

We thought that was it, no mines in the Flathead—not then, not ever. But, no, the British Columbia government simply allowed new mining tenures to be pursued by multi-national mining companies, just shelving the old Cabin Creek site for the time being. In the last decade B.C. not only opened up new areas of the North Fork to their mine approval process, they added coalbed methane and gold mining to their rationale that energy and mineral values trump wildlife and water quality in a pristine landscape.

Never mind that these massive mining developments will be within the watershed, air-shed and view-shed of an International Peace Park, International Biosphere Reserve and World Heritage Site. Owing to the impending mines, in January 2010 the UN World Heritage Committee released a report stating that the Canadian mines would forever desecrate the Crown of the Continent ecoregion and substantially violate the World Heritage and other international designations.

The B.C. mining rationale is driven in part by the fact that huge coal strip mines already exist in the Elk River Valley, north of the Flathead, near Fernie, B.C. Why not a few more over the hill in the Flathead? Never mind that selenium and other pollutants from the mines have bioamplified to levels that pose serious health risks in the Elk River food chain.

The mines themselves are mountain landscapes turned up side down. Pollutants such as nitrates and sulfates are 10 to 15 times more concentrated in the Elk River than in the Canadian North Fork.

I have spent my entire career researching and teaching that nitrates, phosphates and sulfates from human activities are the harbingers of poor water quality. In most cases, these pollutants can be controlled and impacts limited by wise management, but wise management simply is not in the cards when it comes to strip mines that remove entire mountains.

With special funding obtained by Senator Max Baucus, the Flathead Lake Biological Station is working with the National Park Service, Montana Fish, Wildlife & Parks and the U.S. Geological Survey to continue water quality monitoring at the border and in B.C. These data augment similar data gathered during the Cabin Creek inquiry. None of the Elk River pollutants are present in significant amounts in Flathead waters. Indeed, the Flathead River in Canada and the U.S. ranks among the cleanest waters on the planet.

But, there is no question that mining will ruin the phenomenal environmental attributes of the Canadian North Fork and on downstream. Many people in B.C. and throughout Canada understand this and are opposed to the Flathead mines. Indeed, most people, including Canadian First Nations and American Indian tribes are fiercely against any activity that threatens the integrity of not just the Waterton-Glacier International Peace Park, but the entire Crown of the Continent region. They recognize that the intrinsic value of the Crown far outweighs short term profits of mines.

The Flathead Basin Commission, U.S. and Canadian conservation groups, tribes, Governor Schweitzer and Senator Tester joined Baucus in pressuring B. C. to drop the mine plans and legislate protection for the Canadian North Fork. But, the B.C. government remained resolute on pressing forward with the mines.

Then, suddenly after the World Heritage Committee released its report giving B.C. a very bad international image in its year hosting the Winter Olympic Games,

B.C. announced that mining would not occur in the Canadian North Fork. In early February 2010, Governor Schweitzer and his Canadian counterpart, Premier Gordon Campbell, signed a very public memo of understanding to work toward protection for this vital piece of the Crown.

Of course all that is well and good, long overdue and certainly important. But, the stark fact is that B.C. has never said no to a mine of any kind, and their environmental laws are no better than what existed in the U.S. in the 1950s. So, all the talk and agreements are mostly window dressing unless and until full protection from mining is accorded by legislation. And, we can expect that conservation legislation will be a tough sell in B.C. because it will empower opposition to many other environmentally unsound mining plans elsewhere in the province. Two such schemes are for coalbed methane development in the Sacred Headwaters area of northern B.C. and the Enbridge pipeline expansion project that intends to cut a swath from the Alberta tar sands clear through the B.C. mountain ranges and into the coastal fjords in order to facilitate supertanker transport of dense crude oil through the fjords and across the Pacific Ocean to China.

The only way that I (and many others) can see to silence Flathead coal, methane and gold mining in perpetuity is to include the Canadian North Fork, all of it, in the Waterton-Glacier International Peace Park or in a new conservancy with similar protection provisions. This must be done, no matter what the cost may be. The U.S. and Canada are the best neighbors in the world, and policymakers have finally broken the ice over the Canadian North Fork.

B.C. says it wants to do the right thing. Now is the time to really put on the pressure to get conservation legislation passed and protect this vital ground in the Crown of the Continent. Let's help our Canadian friends push back the sea of development around this priceless landscape.

For more information about the Canadian North Fork and how to add your voice to the conservation effort, go to <http://www.headwatersmontana.org>.



By C.W. Guthrie

*Editors Note: Reprinted from Glacier National Park: The First 100 Years, by C. W. Guthrie with permission of the publisher Farcountry Press of Helena, Montana. This beautiful book from which this chapter was excerpted, is one of the finest works ever published on GNP and is used as a required book in the Crown of the Continent and related classes taught at The University of Montana. For more information on the author and the book see notes at the end of this article.*

THE 1800S HAD BEEN A TIME OF RAPID CHANGE FOR THE NATION. By 1900 the great western wildernesses had been explored, mapped, and partially settled. The Union had grown from sixteen states to forty-five. Nearly seventy-six million people occupied the United States, five transcontinental railroads stretched from coast to coast, and the fledgling nation has become the world's largest industrial power.

The turn of the twentieth century brought more landmark events: President William McKinley was assassinated, and the cowboy Vice President Theodore Roosevelt took the oath of office in 1901. San Francisco rose from the ashes of the 1906 earthquake. Henry Ford introduced the Model T, Orville and Wilbur Wright launched the era of mechanized flight, and the telephone came into widespread use.

Amid the prosperity, renowned naturalist John Muir warned that "Thousands of tired, nerve-shaken, over-civilized people are beginning to find out that...wilderness is a necessity." He was right. The trickle of conservation initiatives begun in the last half of the 1800s turned into a flood in the early 1900s. The public was gripped with enthusiasm for the outdoors, and the voices of conservationists echoed in the halls of the U.S. Congress.

These changing attitudes set the stage for a series of events that ultimately led to the creation of Glacier National Park.



## THE CEDED STRIP

“My eyes were long ago opened to the purposes of the Government. No other reservation has as valuable land as that which you come to buy,” said White Calf, the war-weary leader of the Piikáni to the U.S. commissioners sent in 1895 to negotiate the purchase of what would one day become the eastern half of Glacier, including some land south of the park.

White Calf, the warrior Big Nose, and thirty-three other Piikáni (Blackfeet) leaders faced William C. Pollock of the Bureau of Indian Affairs, George Bird Grinnell, and Georgia attorney Walter M. Clements, who were there to negotiate the sale of the Blackfeet Reservation land from the reservation’s western border at the Continental Divide to Birch Creek along the front range of the Rocky Mountains.

Since 1870 there had been a steady clamor from miners and homesteaders to open up this land for public use. The Great Northern Railway had laid track through the reservation and along the southern border of what would one day become Glacier National Park. Great Northern Railway agents had begun to realize the potential of the glaciated landscape just north of the railroad for attracting passengers.

THE POWERFUL INFLUENCE OF THE RAILROAD  
COMBINED WITH THAT OF MINERS AND HOME-  
STEADERS SPAWNED A MOVEMENT TO REDUCE THE  
SIZE OF THE BLACKFEET RESERVATION AND MAKE  
THE LAND AVAILABLE TO THE AMERICAN PUBLIC.

The Blackfeet had been struggling to protect their borders from outsiders for years. Now, largely dependent on government subsidy, they had neither the numbers nor the political power to defend their territory from these new powerful pressures. Acting Indian agent Capt. Lorenzo W. Cooke told the Blackfeet leaders that the best way to be rid of their problem with trespassers was to sell the land.

During the council the normally conciliatory White Calf asked \$3 million for the land. Big Nose, who had always taken a position of keeping their lands, reversed his position and announced, “We are to sell some land that is of little use to us . . . If you wish to give a good price we will be pleased.” After a few more days of talk, the Piikáni leaders accepted \$1.5 million for the land.

Eight months later, on June 10, 1896, Congress ratified the treaty to re-draw the boundaries of the Blackfeet Reservation. Fourteen years later this “ceded strip” would become the eastern part of Glacier National Park.

## WHISPERS OF PRESERVATION

Americans have been vigorous consumers of timber since the first colonists arrived. They cut down trees to build houses, cleared fields for crops, chopped firewood for cooking and heat, and quickly learned to exploit the great forests of the continent for profit.

By the 1700s Americans were shipping lumber to Europe and throughout the world. In the 1860s, when the first transcontinental railroads were being built, the lumber trade boomed. The logging industry moved from forest to forest, leaving a graveyard of stumps in its wake.

As the nation was gobbling up its forests, it reluctantly began to recognize the importance of preserving some natural resources for the future. Congress established Yellowstone National Park—the first national park in the world—in 1872, followed by Yosemite and Sequoia national parks eighteen years later. In 1891 Congress established the first “forest reserves” to protect watersheds from erosion and flooding and to preserve the nation’s timber supply from over harvesting. Six years later, in 1897, President Grover Cleveland issued proclamations establishing the Flathead and Lewis and Clark forest reserves in northern Montana. The Flathead Forest Reserve included the land that later would become Glacier National Park.



## THE FIRST FOREST RANGERS

In the early days of the forest reserves, the rangers were known as “forest range riders.” They were saloon keepers, ranchers, waiters, blacksmiths, Indian scouts, and cowboys who kept their day jobs and moonlighted as range riders. Jack Reuter, a settler at Belton, and C. F. Van Allen at Essex both had brief appointments in 1901. Frank Liebig is considered the first official forest ranger in Glacier. But before Reuter, Van Allen, and Liebig, there was the colorful Fred Herrig.

Herrig was a wrangler and hunting guide for Theodore Roosevelt in the badlands of North Dakota and later was one of Roosevelt’s Rough Riders during the Spanish-American War. When the war was over, Herrig returned to Montana. He was trying to decide what new adventure to tackle when he heard the government was looking for range riders. Herrig, not one to go the long way when a shortcut would do, wrote to Theodore Roosevelt, then governor of New York, and asked for a job recommendation.

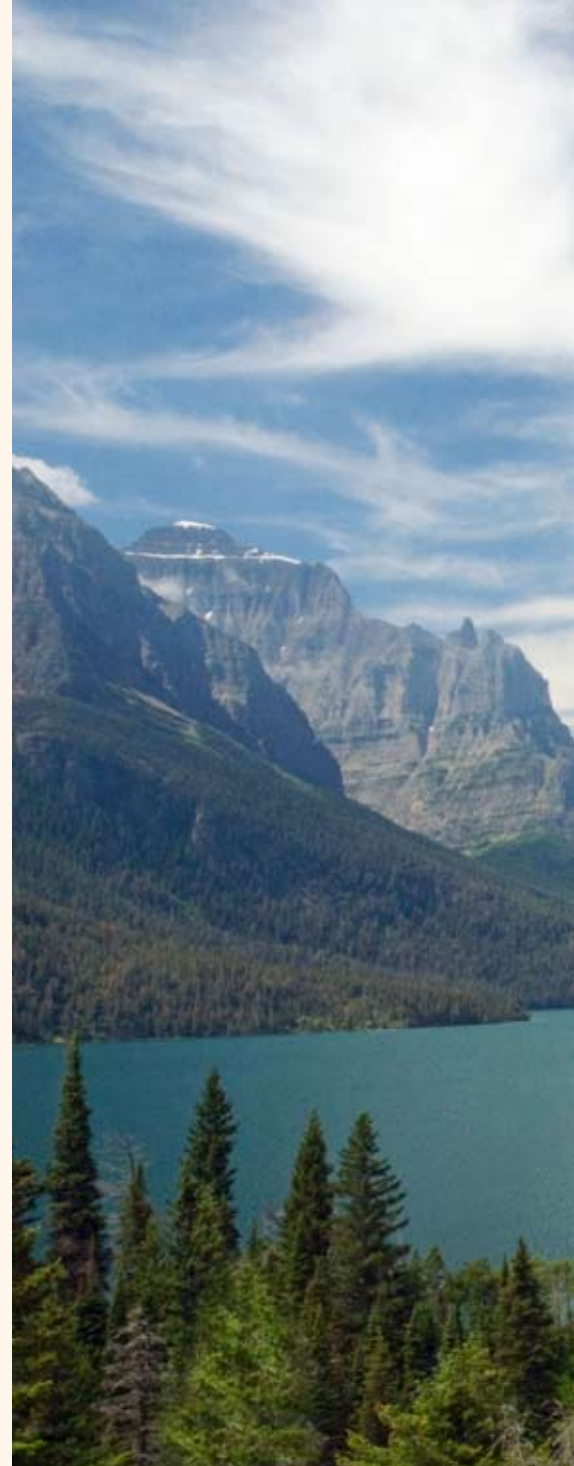
Roosevelt sent a personal note to U.S. Senator Thomas Carter of Montana recommending Herrig for the job, and he was hired.

A colorful adventurer, Herrig was an imposing figure, described by fellow adventurer Frank Liebig as “a big man, not extra tall, but broad, with powerful shoulders. He generally rode a dark bay horse, decked up with a silver-studded bridle and martingale. He wore mostly high-top boots, a big 44 strapped on his belt and he carried a 45-70 rifle in a scabbard on his saddle. He wore the rangers badge in plain sight, and Bruno, a big Russian wolfhound, was his steady companion.”

In 1902 the range riders were renamed “forest rangers,” and in addition to enforcing the laws, fighting fires, and keeping trails open, they were charged with surveying, estimating, and scaling timber—and knowing a few things about forestry and the livestock business.

When Flathead Forest Reserve supervisor F. N. Haines went looking for a man to fit the description, he discovered it was no easy task. Fate and Fred Herrig came to his rescue. Herrig said such a man lived at the foot of Lake McDonald: Frank Liebig.

Liebig came to Glacier in 1900, just as the mining booms reached their pitiful peak before being abandoned and replaced by a ho-hum oil boom near Kintla. He built a cabin on the north shore of Lake McDonald and worked staking claims and writing up the paperwork for oil investors for \$50 a month. He quickly grew tired of this work and took up oil claims of his own on the Belly River.



TOP LEFT: Early forest rangers. On the far right is Frank Liebig, considered the first forest ranger in what is now Glacier National Park. Photo Courtesy of Glacier National Park Archives

ABOVE: St. Mary Lake. RICK and SUSIE GRAETZ



In a letter to Liebig, Haines wrote, "I'm looking for a good man to work as a ranger for Uncle Sam. I've heard a lot about you, Mr. Liebig. I heard you don't drink or get on a spree but the main thing is you know this country and are not afraid of anything." He continued, "Would you like to tackle the job? It pays sixty a month. You board yourself and furnish your own horses."

Liebig accepted the job and took the train from Belton to Kalispell to be sworn in. Haines handed him a notebook, a silver badge, a double-bitted ax, a one-man crosscut saw, a box of ammunition for his 45-70 rifle, and two big sheets of paper on which he was to write what he did each day to send in at the end of the month. "The whole country is yours, from Belton to Canada and across the Rockies to the prairie between Waterton Lake and the foot of St. Mary Lake," Haines told him. "You're to look for fires, timber thieves, squatters, and game violators. Go to it and good luck."

Liebig did just that. He built a cabin at the head of Lake McDonald, flew the flag of the U.S. Bureau of Forestry from the rooftop, and began his job as the first official forest ranger patrolling a half million acres in the area now known as Glacier National Park.



## CRUSADE TO CREATE A PARK

FOR THE GROWING NUMBER OF NATURALISTS CONCERNED WITH THE AREA, THE PROTECTIONS GUARANTEED UNDER FOREST RESERVE DESIGNATION WERE NOT ENOUGH. MINING, SETTLEMENT, AND OTHER FORMS OF DEVELOPMENT WERE ALLOWED IN FOREST RESERVES. THE ONLY DESIGNATION THAT WOULD ADEQUATELY PROTECT THIS UNIQUE PIECE OF THE AMERICAN LANDSCAPE WAS THAT OF NATIONAL PARK.

The first person to pursue this plan was U.S. Army Lt. John T. Van Orsdale, who sent a letter to the Fort Benton River Press in 1883 suggesting that “publicity now being given to that portion of Montana will result in drawing attention to the scenery which surpasses anything in Montana or adjacent territories. A great benefit would result to Montana if this section could be set aside as a national park.”

When George Bird Grinnell began visiting the area in 1885, he took up the cause, coining the term Crown of the Continent and bringing national attention to the notion of creating another national park. Grinnell enlisted the help of other frequent visitors to the glaciated mountains: noted author Emerson Hough, college professor and lecturer Dr. Lyman Sperry, and attorney L. O. Vaught.

Among the voices thundering to preserve the wilderness was Theodore Roosevelt. “I hate the man who would skin the land!” roared Teddy, and when he became president in 1901, he set out to save as much land as he could from timber barons, miners, cattle kings, and dam builders.

The long campaign to make the area a national park had garnered enough support by 1907 to get the attention of the U.S. Congress. U.S. Senator Thomas Carter of Montana introduced a bill to the Senate on December 11. It failed. Carter revised it and again presented it to the Senate in 1908. It was passed by the Senate and sent to the House of Representatives on May 16, where hard-working Congressman Charles N. Pray, Montana’s only member of the House, ushered the bill through the Committee on Public Lands. The committee recommended approval, but no action was taken and the bill died.



Naturalist and conservationist George Bird Grinnell surveys the remarkable scenery from the glacier named for him. Glaciers like this one lured explorers and naturalists to the area—and gave the park its name. (Photo Courtesy of Montana Historical Society, Helena, Montana.)

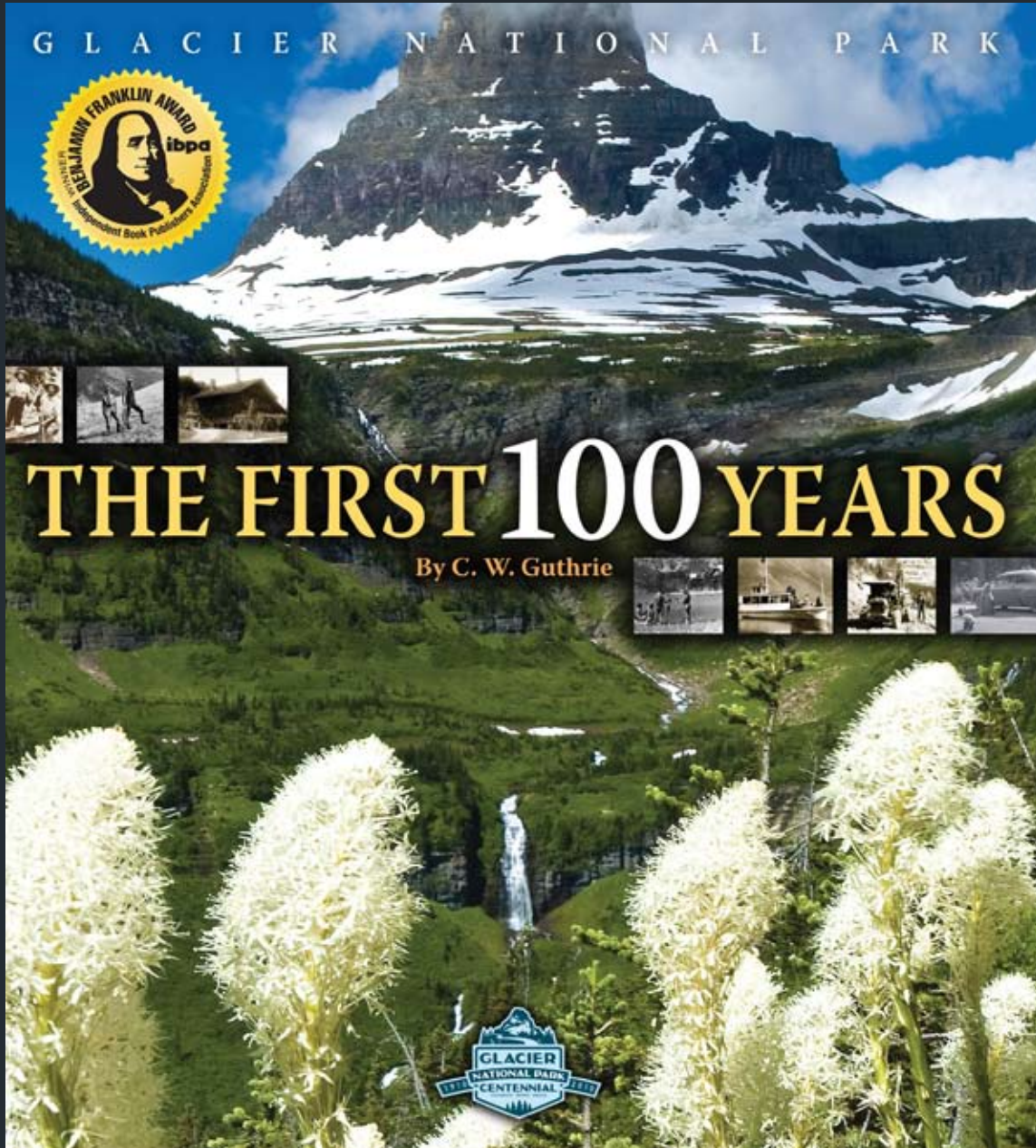
A determined Senator Carter introduced the bill to the Senate for the third time on June 26, 1909. This time it sat dormant in the Public Lands committee until January 15, 1910. While the bill languished in committee, Louis W. Hill, president of the Great Northern Railway, and other notables urged Congress to pass the bill.

Unfortunately, the first decade of the twentieth century came to a close without a decision on this hard-fought-for national park.

*C. W. Guthrie is a freelance writer who lives in the Nine-mile Valley west of Missoula, Montana, with her husband, retired test-pilot Joe Guthrie. She is the author of four other books on Glacier National Park. This work has won numerous awards for its publisher.*

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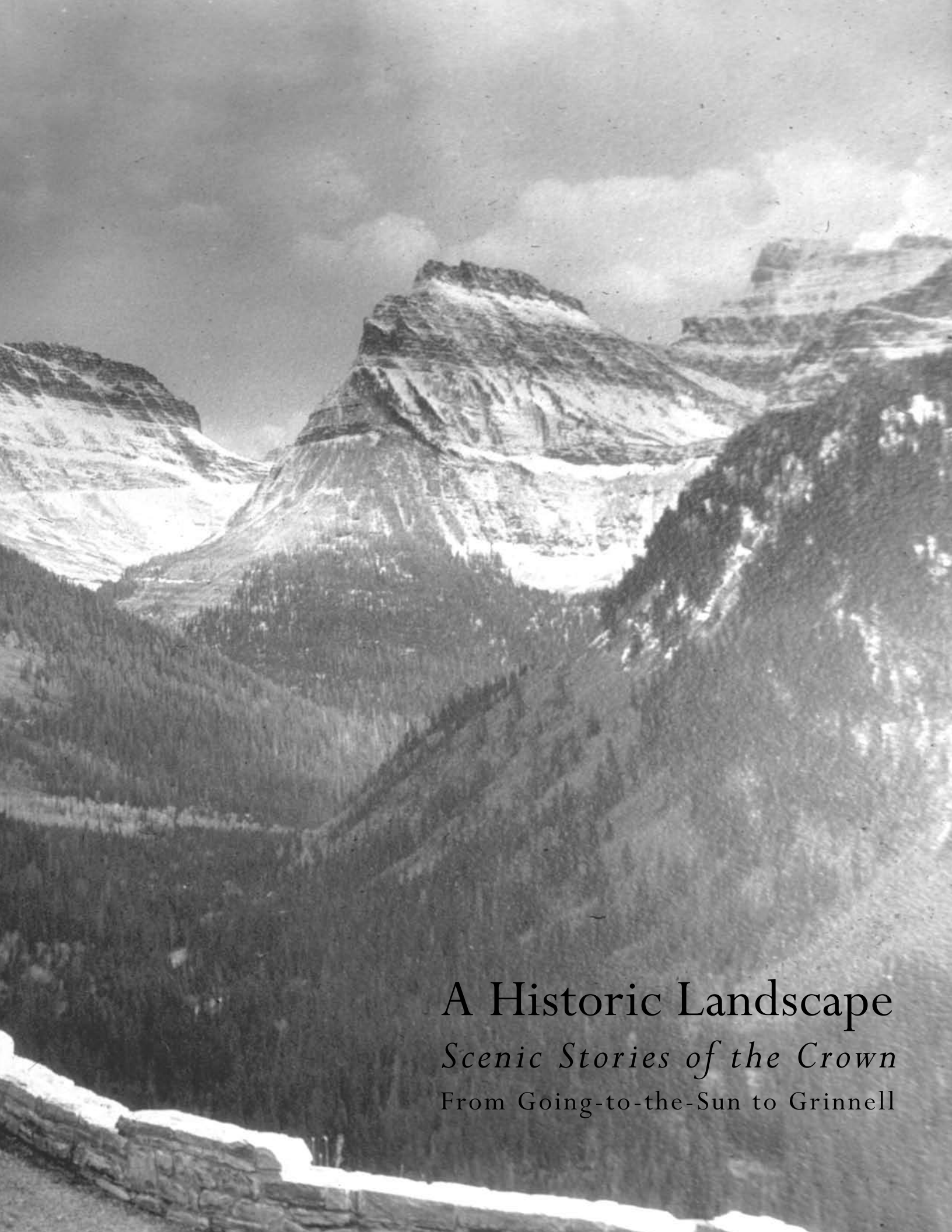
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A Historic Landscape  
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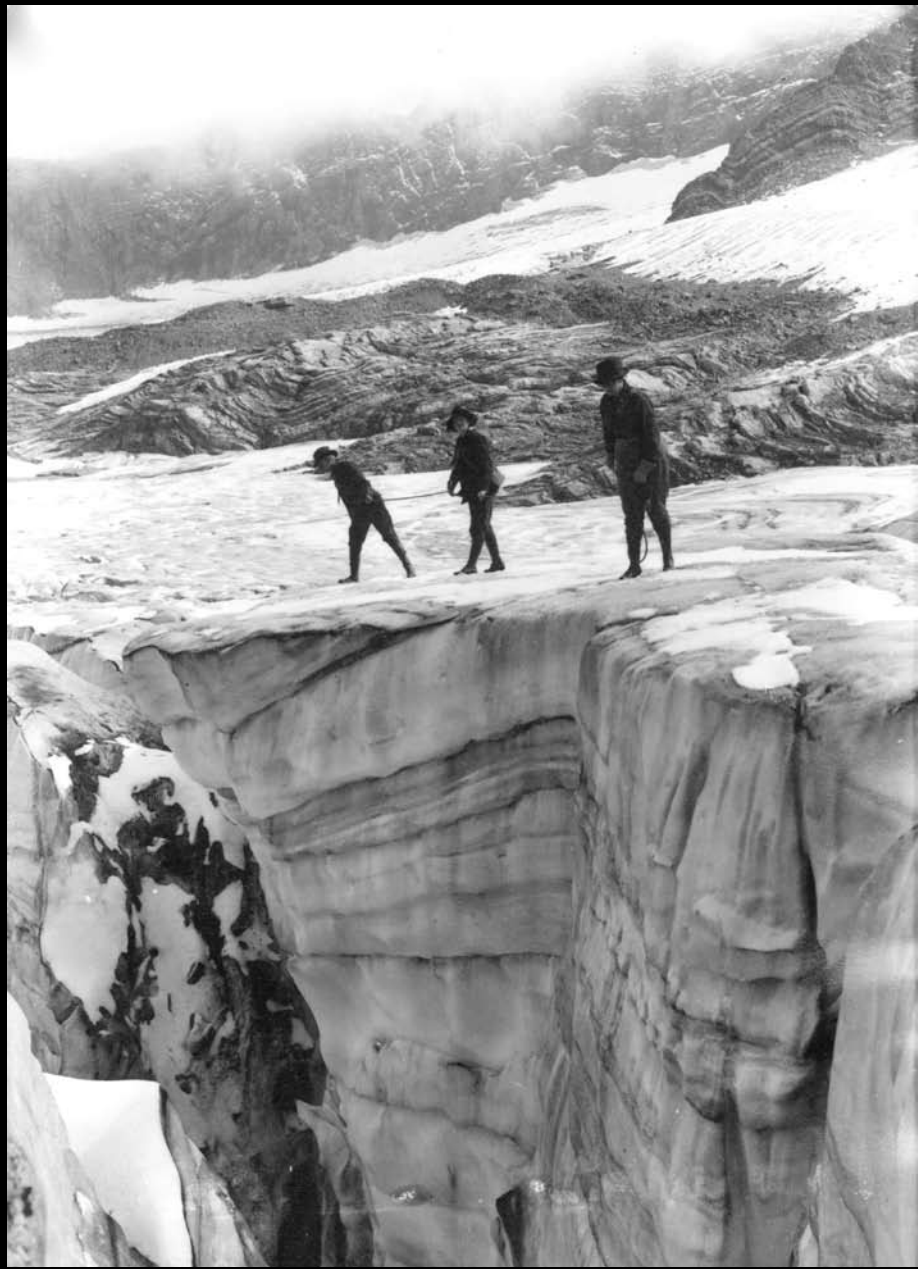
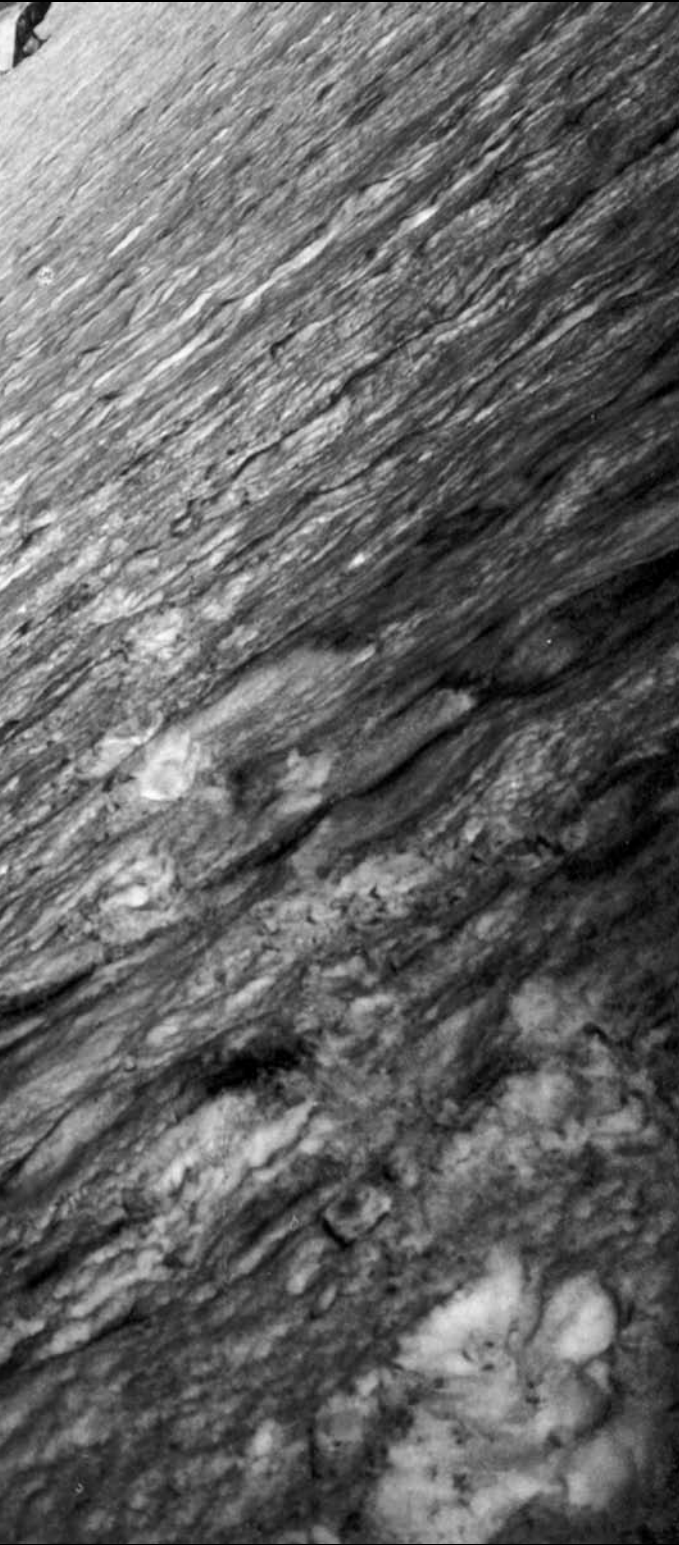
FIRST PAGE: The view of the new Going-to-the-Sun Road in 1934 towards Logan Pass from the west side, just above the loop. (Unknown photographer)

ABOVE: Workers construct the east side of Going to the Sun Road in 1932. (Photo Courtesy of Bureau of Public Roads)

RIGHT: Tourists pay attention to a Forest Ranger's lecture on Mount Stanton in 1925 with Sperry Glacier in the background. (T.J. Hileman)







ABOVE: Three roped climbers examine a crevasse on Sperry Glacier in 1914. (Marble, R. E.)

LEFT: Famous UM Professor Morton J. Elrod captured these early-day trekkers in Glacier.



LOOKING BACK





Swiftcurrent Lake (formerly Lake McDermot) in 1907, before the Many Glacier Hotel. (Fred Kiser)





ABOVE: A Salish couple makes camp west of the Flahead in 1903. (Forsyth, N.A.)

LEFT: The camp of George Bird Grinnell and party in 1890 sits against a backdrop of Chief Mountain. (Elizabeth Grinnell)



# HIGH TIME

## Glacier National Park Project Monitors the Effects of Climate Change on Alpine Vegetation

By Daniel Fagre

Climate change is profoundly reshaping the planet from disappearing arctic sea ice in the north to the disintegrating Antarctic ice shelves in the south. Mountains worldwide also have borne the brunt of worldwide warming.

Glaciers in mountain regions have melted and retreated. Mountain ecosystems, including those in the Crown of the Continent, have warmed two to three times the global average.

Mountains provide us with water by slowly releasing the winter's accumulation over summer months. Mountains also are home to unique species and substantial biodiversity, enable recreation worldwide, and provide goods such as timber and clean air.

Alpine vegetation serves as one potential indicator of the rate of change in mountain ecosystems. Alpine vegetation is finely tuned to the often-harsh climatic conditions above treeline on mountain summits. Long-term changes in climate should be reflected in the species diversity, abundance or timing of annual growth of alpine vegetation.

Unlike other natural vegetation that is managed, such as grasslands or forests at lower elevations, alpine vegetation in the Crown of the Continent has remained largely undisturbed, particularly in national parks and wilderness areas. Thus, changes in the alpine should be mostly due to changes in snow, temperature variation and other climatic variables.

In Glacier National Park, 30 percent of the terrain is above treeline and 27 percent of the park's plant species grow there—so what happens to alpine vegetation due to climatic changes is of concern.

As part of our ongoing program at the US Geological Survey Northern Rocky Mountain Science Center to understand how climate change affects mountain ecosystems, we initi-

ated the GLORIA project to monitor changes in alpine vegetation.

What is GLORIA? After the need to monitor high alpine changes was recognized in Europe in the 1990s, the Global Observation Research Initiative in Alpine Environments (GLORIA) was developed as an international research network to assess impacts on vegetation worldwide. A Vienna-based network of international scientists developed a standard protocol with specific site requirements and techniques that allow sites to be compared worldwide.

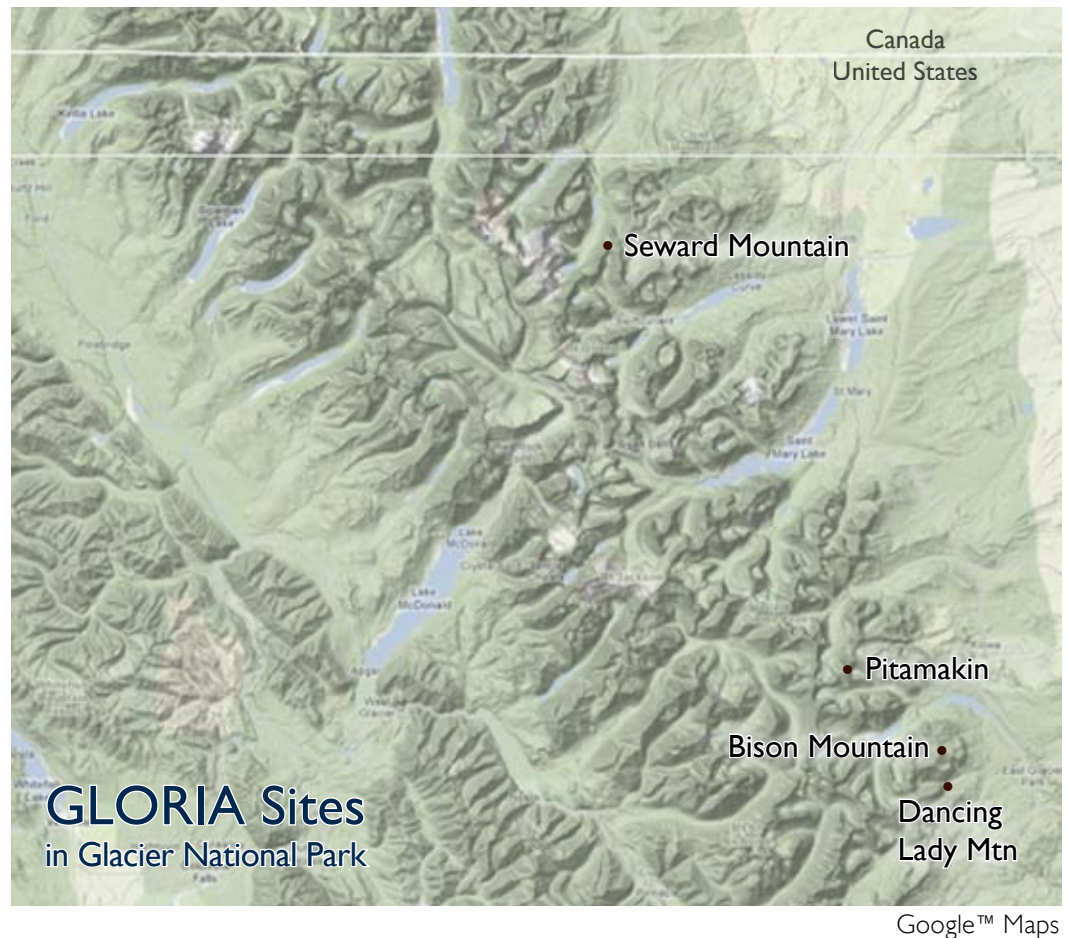
Scientists envisioned 87 mountain regions to be part of the network. Now there are 56 active target regions, but North America did not have target regions until 2003. The Glacier National Park target region, established in 2003 and 2004, was the first North American site. Two additional sites were started in California in 2004 in the eastern Sierra Nevada and White Mountains.

To begin North American target regions, standard protocol required the selection of four similar summits that had elevation zone differences of subalpine to nival (the area of rock and ice nearly devoid of vegetation) that are likely to be sensitive to climatic change. Intensive vegetation plots were set up in a systematic arrangement that is surveyed and photographed so that it can be recreated for future monitoring.

Species composition and the percentage of land covered by vegetation was recorded. Temperature loggers were buried to assess long-term change in summit conditions, and intense photo documentation of plants and their spacing was completed. Comparisons to other North American sites, and globally, will provide a unique inventory of mountain summit biodiversity.

GLORIA's 5-year assessments are expected

“MOUNTAIN ECOSYSTEMS, INCLUDING THOSE IN THE CROWN OF THE CONTINENT, HAVE WARMED TWO TO THREE TIMES THE GLOBAL AVERAGE.



“GLORIA’S 5-YEAR ASSESSMENTS ARE EXPECTED TO SHOW A COHERENT RESPONSE TO GLOBAL CLIMATIC CHANGES.”

to show a coherent response to global climatic changes even if individual sites show minor change. Since 2003, another 12 sites have been established throughout the mountainous regions from New Mexico to Alaska, with an additional four sites planned. The North American Chapter aims to promote the establishment of baseline GLORIA sites, which are well-distributed throughout western North American mountain regions, and to encourage additional alpine plant monitoring through extended research projects related to the baseline GLORIA areas.

At Glacier National Park, one of the first difficulties was finding suitable, conical summits because glaciation created steep headwalls on northern aspects of many mountains, making vegetation surveys there impossible. Rocky, steep terrain and multi-day approaches also added to difficulties.

After reconnaissance in 2002 and 2003, we eventually selected four summits east of the continental divide. The project’s highest summit, 8,917-foot Seward Mountain, is the northernmost and its lowest summit, 7,365-foot Dancing Lady Mountain, is the southernmost.

In 2003, researchers installed the first two

sites and became familiar with the detailed GLORIA protocol. In 2004, scientists established the remaining two sites in a series of backcountry trips. They met harsh conditions on the summits even in summer, hampering the detailed botanical identification and surveying. Forest fires in 2003, lightning, and grizzly bears also added to the challenge.

Treeline in the Crown of the Continent is strongly influenced by terrain and is significantly more variable than in other Rocky Mountain areas. This also was true of zonal differences of alpine vegetation. Subalpine and even grassland species were found on the same summits as upper alpine species and in areas considered too high. While different zonal areas often occurred on one summit, they were highly influenced by the aspect and slope of that summit area.

Observers recorded a surprising amount of plant life. Between 51 and 82 vascular plants, such as ferns and conifers that have tissues to absorb water, were documented on each summit. The number of species and the variance of species related to which side of the peak was exposed to the elements. The summit’s structure caused loose recurring plant communities, or micro-communities, that varied with



exposure, slope angle, and surface character.

Researchers returned to survey Glacier National Park GLORIA sites again in summer 2009. Several expeditions were necessary to complete the detailed, meticulous work necessary to identify and survey the oft-tiny plants.

A preliminary review of the results indicates that plant growth shifted between the various summit plots, and several additional species were identified. However, numerous plants observed in 2003/2004 were not found during the resurvey. These results are most likely due to the differences between years, rather responses to climate change, i.e. 2003 was dry compared to 2009.

During 2010, we will be adjusting and expanding the GLORIA protocol to better track the variability inherent in the timing of plant growth annually vegetation. We plan to visit each of the sites at least once before the next five-year survey is due in 2014.

Although the long-term benefits of the GLORIA program will not be fully realized until 10 or 15 years from now, there are immediate benefits to documenting alpine plant diversity in some of the harshest environments in the Crown of the Continent. On-site temperature loggers will allow us to better understand how the different species adapt to tiny variations in summit conditions. And site data now gathered can be used as anchor points for expanded alpine observation networks that incorporate other tundra vegetation studies.



TOP: Researchers on GLORIA target area Pitamakin.

ABOVE: *Botrychium* measured by a Swiss Army Knife.

Photos Courtesy of U.S. Geological Survey

“ALTHOUGH  
A PRELIMINARY  
REVIEW OF THE  
RESULTS INDICATES  
THAT PLANT GROWTH  
SHIFTED BETWEEN  
THE VARIOUS  
SUMMIT PLOTS..”





# COLLABORATIVE CONSERVATION

## *in the Crown of the Continent*

By Joel Brown

**T**he Montana Legacy Project, spearheaded by The Nature Conservancy (TNC) and the Trust for Public Land (TPL), couldn't be named more appropriately. The project aims to purchase over 310,000 acres of Plum Creek Timber Company land in and around the Crown of the Continent ecosystem and conserve that land—which contains some of the nation's best wildlife habitats, water resources and working forests—while maintaining community benefit.

In this sense, the project seeks to conserve the socio-ecological “legacy” of Montana and the Crown of the Continent. This goal is lofty, considering the traditional gap between the interests of conservation groups and communities who depend on natural resources for their livelihood. While bridging this gap is nothing new to TNC, they are now attempting to do so on a larger scale than ever before.

In July 2008, a \$490 million deal was made with Plum Creek Timber to transfer more than 310,000 acres of land to the Montana Legacy Project. The purchase includes land within the Swan Valley, the upper Clearwater Valley near Seeley Lake, the Lolo Creek watershed, the Mill Creek area near Missoula, Fish Creek, Petty Creek, Schwartz Creek, and in the Garnet Mountains between Potomac and Interstate 90.

The financial support for purchasing the lands has, in part, come from \$250 million in federal funding. This money is part of a new federal program that enables nonprofit organizations to purchase high conservation value forestlands through direct federal grants.

Additional funding for the purchase continues to come from a variety of public and private sources. The nuts and bolts of the agreement call for the sale to be completed in three phases. The first and second phases were completed in

LEFT: North Fork of the Flathead.  
By RICK and SUSIE GRAETZ

“While these kinds of conservation efforts have seen success, the Montana Legacy Project represents a move towards larger-scale conservation efforts. This kind of effort preserves whole ecosystems instead of a patchwork conservation landscape, providing the space and connectivity needed for an ecosystem to function.”

December 2008 and February 2009. The last phase, encompassing 68,000 acres, is scheduled for December 2010.

Central to the Montana Legacy Project's goals has been the potential for the purchased land to remain part of the working landscape and enable sustainable timber harvests while remaining open for public access and conserving wildlife and water resources. While TNC and the TPL are the original buyers of the Plum Creek Timber lands, the end goal will be to transfer these properties into other public and private conservation ownership. Part of that transfer process will include developing community support for potential land sales.

TNC is no stranger to this type of conservation work. Over the years they have developed a strong reputation for supporting local communities in the Crown of the Continent, other parts of Montana, and the world.

This reputation stems from their history of cultivating relationships with private landowners and working collaboratively to reach conservation goals. This work began on the Rocky Mountain Front more than 40 years ago. Since then, TNC has helped place more than 277,000 acres under conservation easements in Montana.

Their work has also involved a partnership with the Blackfoot Challenge. The Blackfoot Challenge is a community led conservation group dedicated to managing the Blackfoot River and adjacent lands. The group has become a showpiece for community-led conservation, due in part to its partnership with TNC. The Blackfoot Challenge and TNC have been working on another deal with Plum Creek Timber to transfer over 89,000 acres of land into a variety of public and private conservation ownership.

While these kinds of conservation efforts have seen success, the Montana Legacy Project represents a move towards larger scale conservation efforts. This kind of effort preserves whole ecosystems instead of a patchwork conservation landscape, providing the space and connectivity needed for an ecosystem to function.

The benefits of a conservation effort on this scale, however, do not come without challenges. Finding the right ownership for Montana Legacy Project land is not easy, considering the range of community needs throughout the project area.

Meetings are currently being held in the local communities likely to be affected by Montana Legacy Project land sales, scheduled to begin this spring. These meetings form the

## MONTANA LEGACY PROJECT PLUM CREEK LANDS

Swan Valley | Lolo Creek Watershed | Mill Creek  
Clearwater Valley | Fish Creek | Petty Creek  
Garnet Mountains | Schwartz Creek

PHASE 1

**DECEMBER 2008: 130,000 acres**

PHASE 2

**FEBRUARY 2009: 111,740 acres**

PHASE 3

**DECEMBER 2010: 68,000 acres**

Go to

<http://www.themontanalegacyproject.org/>  
for more information.

foundation of community relationships that TNC and TPL are building in the project area.

A donation of 110,000 acres to the US Forest Service is scheduled for April, and the sale of more than 40,000 acres in the Fish Creek area to Montana Fish, Wildlife & Parks is tentatively scheduled for March.

While the Montana Legacy Project is relatively young with high aspirations, it represents a landmark effort in western land conservation. Collaborative conservation on this scale is rare and its success will not only prove beneficial for the Crown of the Continent ecosystem but for developing a new land conservation model in the Rocky Mountain West.



# The Flathead Land Trust

**W**hen you think of the North Shore of Flathead Lake, what do you see? Is it the sun's first rays sparkling on the clear blue water as it rises over the backdrop of the Swan Mountains? Perhaps it's a playful stroll with your children along a sandy beach—or watching thousands of geese and swans gather during the annual waterfowl migration?

Flathead Lake North Shore looking east towards the Swan Range and Bigfork

FLATHEAD LAND TRUST

Whatever your vision, we can all agree—the North Shore is a special place, and one of the Flathead Valley's greatest assets.

Protecting the North Shore has become one of the primary focus areas of the Flathead Land Trust, and is a key component to the "River to Lake Initiative." This collaborative effort will establish a network of protected critical habitat including wetlands, riparian areas, and adjacent farmland within the Flathead River corridor as well as the North Shore of Flathead Lake. These private, low-elevation lands form the western boundary of the Crown of the Continent ecosystem.

The River to Lake Initiative brings together various groups—private landowners, land trusts, conservation organizations, local businesses, community leaders, county and tribal governments, and state and federal agencies—to conserve, maintain, and enhance our heritage of clean water, abundant fish and wildlife, and recreation and scenic areas.

The Flathead Land Trust was formed in 1985 by a local group of forward-thinking community leaders and landowners. To date, FLT has partnered with local landowners to place 42 voluntary land protection agreements (conservation easements) on 9,561 acres, with an additional 2,134 acres protected in cooperative projects with FLT's partner agencies.

During the past several years alone, more than 2,000 acres have been protected, including:

**Church Slough** – 837 acres of this critical migratory bird habitat and popular fishing area was protected in partnership with the Loudon Family.

**Johnston Ranch** – nearly 700 acres of wetland, waterfowl habitat and working farmland protected along the Flathead River.

**McWeneger Slough** – FLT completed extensive improvements on public access to this popular family fishing spot. North Shore of Flathead Lake – FLT facilitated the purchase of 160 acres adjacent to the federal Waterfowl Production Area by Montana Fish, Wildlife and Parks.

**Lone Pine State Park** – FLT completed a conservation easement project that allowed Montana Fish, Wildlife & Parks to add 40 acres and an expanded trail system to this widely used park.

**Nelson Easement** – FLT completed a conservation easement on 301 acres of wetland, riparian corridor, waterfowl and wildlife habitat on 1.5 miles of Good Creek, a tributary of the Stillwater River, north of Whitefish.

This year will be an exciting time for private land conservation in the Flathead Valley, and the Flathead Land Trust is positioned to be a leader in these efforts. FLT has recently been awarded two large project-restricted federal grants:



# TRUST LANDS ACTIVITIES

## AROUND THE CROWN

—From the Department of Natural Resources and Conservation

There are more than 700,000 acres of school trust lands within the Crown of the Continent, and 5.2 million acres statewide. Since Montana gained statehood in 1889, these unique lands have supported Montana's public schools, irreplaceable wildlife, and the recreational needs of the general public. The five-member State Land Board, made up of statewide elected officials, govern the school trust lands. The Trust Lands Management Division of the Montana Department of Natural Resources and Conservation (DNRC) carries out day-to-day management. Trust lands are mandated to generate revenue for the beneficiaries of 10 trusts, including common schools (K-12 schools), universities, and institutions such as the Pine Hills Industrial School. Through resource-related activities such as grazing, oil and gas leasing, and timber harvesting, Montana's school trust lands produce \$80 to \$100 million in revenue each year.

### Rocky Mountain Front

Along the Rocky Mountain Front and its adjacent rolling plains, more than 120,000 acres are leased for grazing; late-night celebrity David Letterman is one of many lessees. The state has also issued 45 leases for oil and gas development along the Front. Sensitive to the environmental qualities of the area, the State Land Board crafted special stipulations for resource use. The state also has issued special management conservation leases to The Nature Conservancy in Teton County near the Pine Butte Swamp Preserve, home to a healthy population of prairie grizzlies.

### Blackfoot

In the southern portion of the Crown lies the Blackfoot Valley, a region that boasts an expanding inventory of state trust lands. Through DNRC's land banking program, isolated tracts of state trust land can be sold, and the revenues are "banked" to finance future acquisitions. DNRC targets land that provides increased revenue for schools, better access for hunting and fishing, as well as lands that can be "blocked up," allowing for more efficient management activities such as road maintenance and weed control. In the past three years of the land-banking program, the State has acquired more than 4,000 acres in the Blackfoot Valley, including the Tupper Lake area and a block north of Lincoln. Parcels in the Blackfoot have also been sold. An active partner in the local working group Blackfoot Challenge, the State is cooperating with the Challenge and Montana Fish, Wildlife & Parks to

purchase another 14,000 acres in the Chamberlin Creek drainage. Additionally, an upcoming land exchange with Confederated Salish and Kootenai Tribes will add more trust lands in the Blackfoot Valley. Farther west in the Blackfoot, the State of Montana, in partnership with the Trust for Public Lands, The Nature Conservancy and local citizens, is poised to gain ownership of 26,000 acres of forestlands surrounding the Potomac Valley. The funding will come from a bond issue approved by the Legislature and Governor Schweitzer.

### Seely-Swan

Moving north into the area of the Seely-Swan valleys, several state forests—larger consolidations of timbered state trust lands—support a traditional timber economy, abundant recreation and wildlife habitat. Several years ago, DNRC began the process of developing a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service. The outcome will be an agreement on management of working state forests in the Clearwater, Swan and Stillwater. The HCP will help maintain habitat for lynx, grizzly, bull trout and other threatened fish species. The EIS is currently out for public comment, and the State and Federal partners hope to conclude the HCP by the fall of 2010. This will be one of the largest HCP agreements in the nation.

### Flathead

The working state trust lands of the Crown of the Continent face changing attitudes in northwest and western Montana where traditional land uses confront changing demographics and community values. Open space for recreation and commercial development are two emerging demands. State lands around Whitefish total about 13,000 acres. The State is collaborating with communities and interest groups to find workable strategies for management. In Whitefish, DNRC staff meets regularly with community folks on final details of the "Trail Runs Through It" project, a cooperative state-local initiative for open space, recreation, and wildfire mitigation. The state is also looking at "concentrated recreation areas" in Whitefish and Woods Bay. Development of community wildfire protection plans not only on state lands but adjacent private lands is another priority in forested rural areas. Finally, the Land Board has adopted a new approach to leasing cabin sites, many of which are located around lakes on the western side of the Crown. As land values escalate, keeping leases affordable yet fair for the school trust beneficiaries is another challenge.

\$1 million from the North American Wetlands Conservation Act (NAWCA) and \$1.35 million from the Farm and Ranch Land Protection Program (FRPP) for the purchase of conservation easements on threatened private lands. The funding, while showing the urgent needs of these projects, enhances FLT's ability to build on current success within the River to Lake Initiative focus area.

The current economic downturn has temporarily reduced

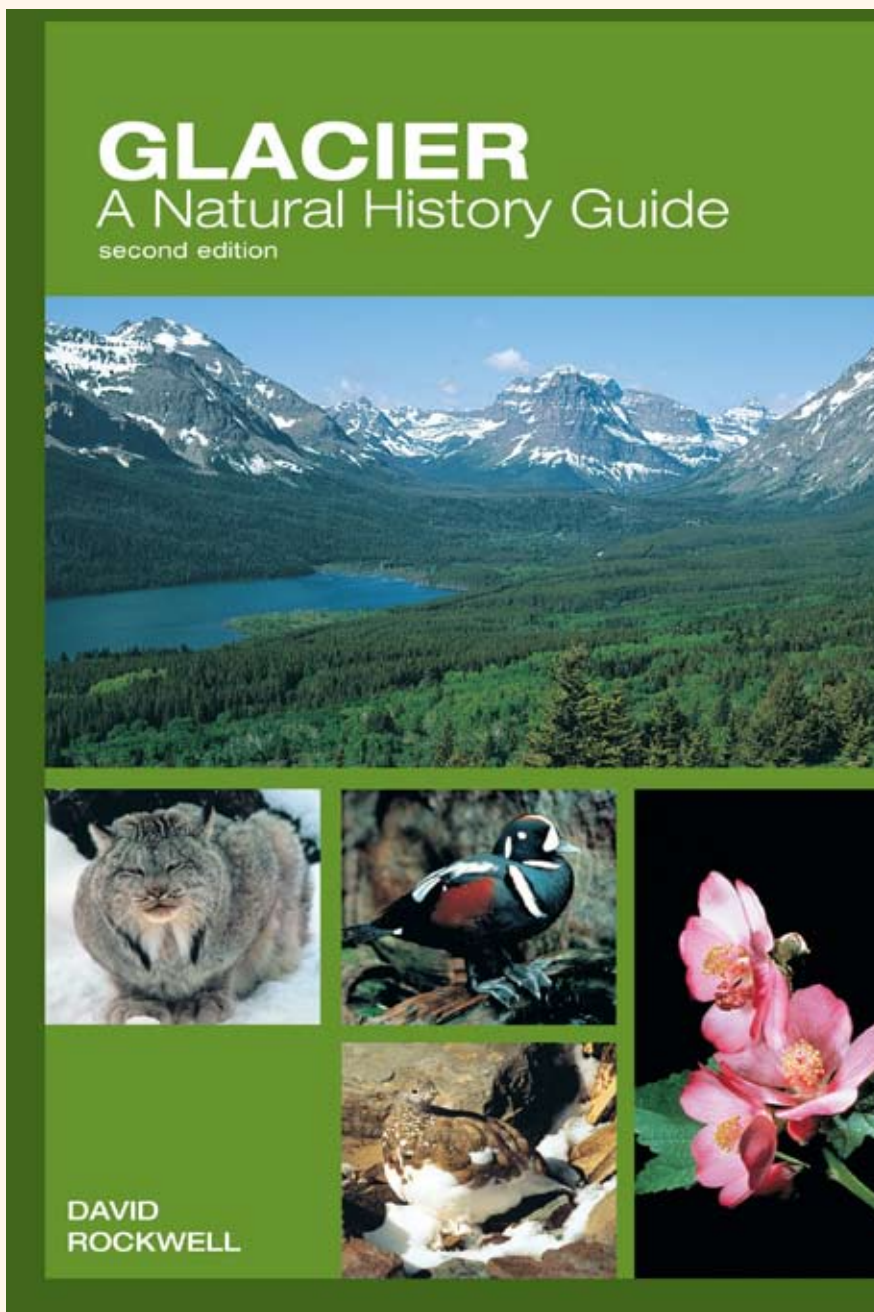
development pressure on sensitive lands, presenting a once-in-a-lifetime opportunity for private land conservation. FLT's success in the Initiative is vital if we are to maintain our ecological legacy in Montana. The Flathead Land Trust will be at the forefront in preserving clean water, wildlife, and agricultural values for current and future generations of Montanans.

**For more information about the Flathead Land Trust and its activities, please visit [www.flatheadlandtrust.org](http://www.flatheadlandtrust.org).**

# Pages of the Crown

Featuring David Rockwell's Geological Guide to the Gems of Glacier National Park

With this piece on the 2nd edition of David Rockwell's book, *Glacier. A Natural History Guide*, published as a Falcon Guide by The Globe Pequot Press in 2007, we are initiating a regular feature of our Crown publications. We have often been asked by people interested in Glacier and the Crown whether we can recommend any books. Books on Glacier National Park and beyond are numerous and are of many kinds: books on the Park's history, books on trails and hiking, photo essay books, books of stories and lore, books on the Park's flora, on its fauna, and so on. We can't hope to do justice to all of the wonderful, informative, and helpful books that exist by featuring one or two in our E-Magazine and E-Notes publications, but we hope our efforts will help our readers find books of various kinds, read them, and become more knowledgeable and even more enthusiastic fans and visitors to the Park and the entire Crown.



Cover Photo Courtesy of Globe Pequot Press

“The book will also leave its readers with a greater understanding of how this extraordinary place, this ecosystem, functions as an interdependent and dynamic whole.”

We have selected David Rockwell's book to start with, in part because it starts with the long-ago origins of this spectacular and complex place; namely, the park's geological formation over thousands, even millions of years. Yet it also never loses sight of where we are now, and it helps us understand in a style and language that is accessible to the non-scientist, both what we can observe when we are in Glacier Park and what else we might look for that many of us probably miss when we are there.

This book, *Glacier. A Natural History Guide*, about 300 pages, provides a lot more information than its price of \$17.95 might suggest, and contains many marvelous photographs, as well as charts and tables that offer graphic and visual illustrations of what we read in the text. Rockwell also gives some excellent tips for further reading.

One can read the book in its entirety or its eleven chapters individually in any order, depending on what one is particularly interested in at the moment. The chapters are organized by major themes, such as: “The Rock of the Park” or “Showing the Park into Place;” “The Aspen Parklands” or “The North Fork Valley Bottom;” “Lakes and Streams” or “The Human Presence,” to name a few. A few of the chapters also include brief, but very practical tips in sections, such as: “Where to See Geology,” “Plant Communities Guide,” “Fire Guide,” “Where to Find Wildlife,” and “Hiking in Bear Country.”

Whether Rockwell is describing the geological history of the park, telling us about the importance of Clark's nutcrackers in their ecosystem or why certain kinds of trees were once prevalent in certain places in the park but are now difficult to find there, or discussing the once-again-understood significance of fire for the health of the park (and beyond), he does this in ways that make scientific knowledge, research (his own and that of others), and personal observations and experiences instructive, fascinating, and readily accessible.

I very much appreciated his mention of several scientific debates and controversies as they relate to the park and its complex natural history. For instance, he addresses the debate about where the rocks that form the base of the park really came from and how, or looks at scientists' “puzzling” over the so-called “dolomite problem.” His use of terms such as “believes,” “may have,” “apparently,” “are thought to be,” and “a mystery,” makes clear that there is still much to wonder and conjecture about

when looking at the park, how it came to be, and how it functions today.

Another huge strength of the book resides in the author's ability to show the park's geology, hydrology, plants, animals, and the effect of human presence in the park through clear scientific observations and his use of unique, yet representative, examples. Rockwell illustrates just how interrelated, intertwined, interdependent, and interactive—as well as how dynamic yet fragile—all these major pieces of the park's ecosystem puzzle really are. If one thing changes, so do many others. The effects of shrinking glaciers or the impact of suppressing or allowing fires to burn are just two such examples.

There is sufficient scientific knowledge presented in *Glacier. A Natural History Guide* to give almost anyone more insight into and appreciation of what we see and what we might look for when we are in this marvelous and inspiring natural place.

David Rockwell even gives us useful tips on where we can see the geology he talks about, where to find the wildlife he describes, and where to locate the best examples of the plant communities that are so abundant in the park. But he also invites us into some of the less clearly factual magic, some of the wonders, and many of the special qualities of Glacier National Park in its parts and in its entirety.

I have little doubt that even those of us who know this special place very well and have spent much time there will look at this now 100-year old National Park after reading this book with even greater awe and appreciation, greater knowledge of and insights into how it came to be as it is today. The book will also leave its readers with a greater understanding of how this extraordinary place, this ecosystem, functions as an interdependent and dynamic whole.

Whether the readers of this outstanding book will in the long run be able to differentiate between argillate and quartzite, will remember why cedar grows in one place and Krummholz in another, or get the same joy out of watching American dippers bob in the streams or ponder why they do, as the author does, they will no doubt be inspired to visit the park once again, as soon as possible, and both see and understand a lot more than they did the last time. What more could one ask from a book about our century-old Glacier National Park?

— Jerry Fetz

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Crown of the Continent Initiative  
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### WELCOME

THANK YOU FOR VISITING THE OFFICIAL WEBSITE of the University of Montana's Crown of the Continent Initiative! This initiative grew out of discussions between the University and representatives of Glacier National Park initially, but has grown to become a collaborative effort involving an ever-expanding number of additional organizations, agencies, non-profits, and educational and research institutions on both sides of the U.S.-Canadian border.

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**Gerald Fetz** is a native Northwesterner, having grown up and lived in Washington, Idaho, Oregon, and, since 1970, Montana. He retired in December 2008 as Dean of the College of Arts and Sciences at The University of Montana, where he had served as a professor (German Studies and Humanities) and administrator (Chair of the Department of Foreign Languages and Literatures and Dean of the Davidson Honors College, in addition to CAS Dean) for 39 years. Though retired from full-time work at UM, he continues to teach part-time and is involved with two University-wide initiatives, serving as the Co-Director with Rick Graetz of the UM Crown of the Continent Initiative and the UM Press.

**Rick Graetz** is a member of the University's Geography faculty, teaching Montana and mountain-related courses, as well as Co-Director of the Crown Initiative and the UM Press. He is the founder of Montana Magazine and American Geographic Publishing. **Susie Graetz** is a researcher and visiting scholar in the University's Central/Southwest Asia Program. Together the couple has authored and published numerous books and papers on Montana, regions of the USA, and titles for countries in Asia and the West Indies. They also write a syndicated newspaper column titled This Is Montana.

**Jack A. Stanford** is Professor of Ecology and Director of UM's Flathead Lake Biological Station and teaches field ecology courses at FLBS. He is most noted for his long-term studies of the Flathead River-Lake ecosystem in Montana and British Columbia. In 1999 Dr. Stanford began extensive work on a suite of observatory salmon rivers in Kamchatka, Argentina, Alaska, and British Columbia. In June 2004 he received the Award of Excellence of the North American Benthological Society, the leading professional society in the world concerned with river ecosystems. Jack has authored more than 150 papers and books.

**Dan Fagre** is Research Ecologist for the Northern Rocky Mountain Science Center of the U.S. Geological Survey and Director of the Climate Change in Mountain Ecosystems Project stationed in Glacier National Park. Dr. Fagre is a faculty affiliate at the University of Montana and several other universities and has worked for the past 18 years with many staff, partners and collaborators in the Northern Rockies to understand how global-scale environmental changes will affect our mountain ecosystems. Dan is the author of more than 120 publications and has co-published three books.

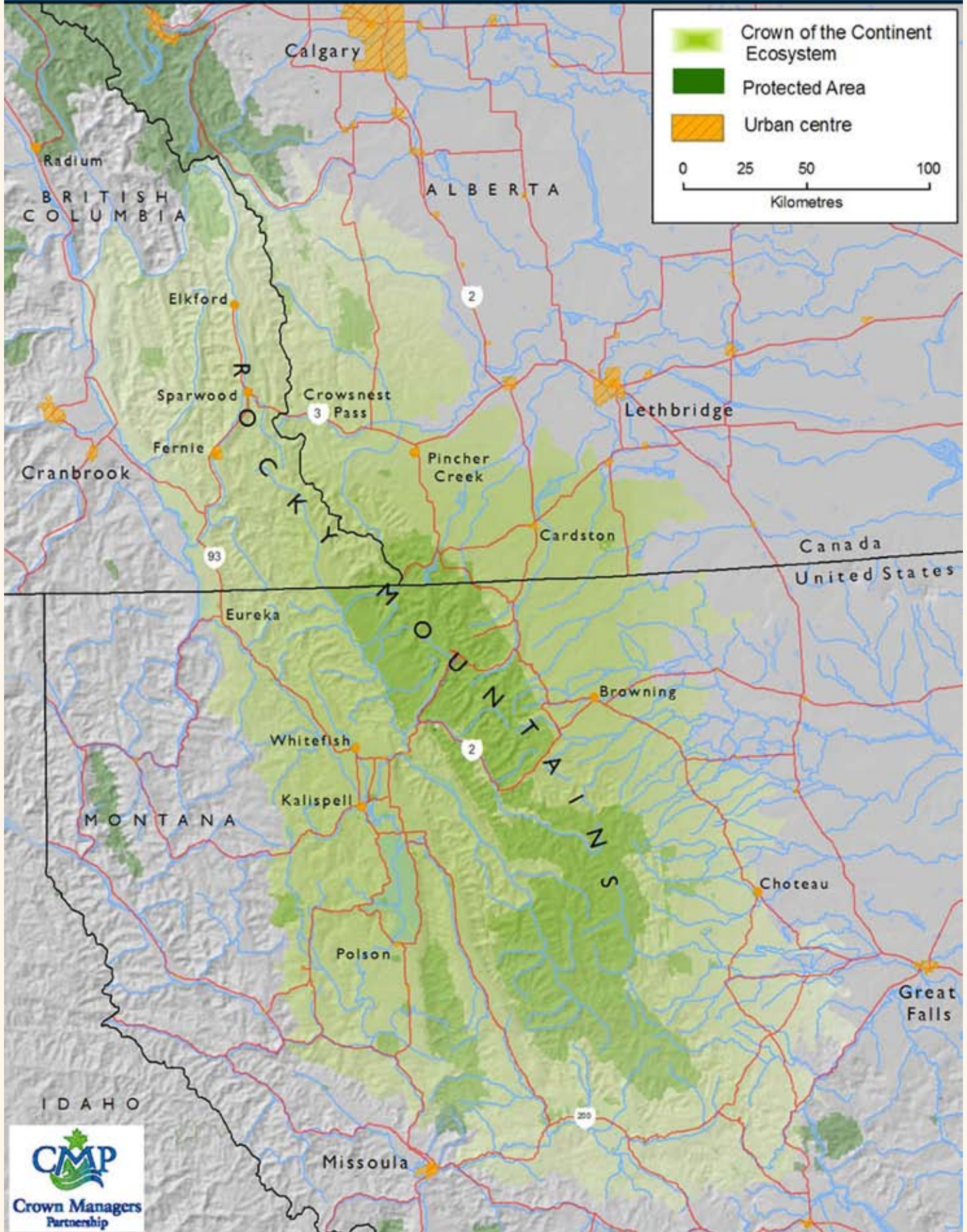
**Rob Cheney** has reported news in Montana for 23 years, serving at the Hungry Horse News, Bozeman Daily Chronicle, Montana Magazine and currently the Missoulian. He earned a bachelor's degree in political science from Macalester College in St. Paul, Minn. He was a fellow at Columbia University Teacher's College for work on Montana's Tribal History Project, and last year received a University of Montana Matthew Hansen Endowment fellowship for coverage of Superfund restoration of the upper Clark Fork River drainage. He currently covers outdoors, environment and science issues for the Missoulian.

**Joel Brown** is a graduate student in the University of Montana's Geography Department. He also earned undergraduate degrees in geography and environmental studies. His research interests include water policy, agriculture and remote sensing.

**Other Contributors** — Several other writers have authored pieces for this publication on behalf of their respective organizations. Rather than profile them individually here, future issues of this E Magazine and our Crown newsletters will feature profiles of these affiliates as well as other partners who are involved with work in the Crown of the Continent.



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