

# 13. What the Land Offers

## Natural Resources of the Crown

### Wilderness

One of the defining characteristics of the Crown of the Continent is its official wilderness areas on public lands in both the United States and Canada. These lands have been set aside by law

for people to enjoy and to provide future generations with natural, non-industrialized landscapes, free of motors and commerce. The largest of these wilderness areas is the Bob Marshall Wilderness Complex, covering portions of four national forests and including the Bob Marshall Wilderness (about 400,000 hectares; 1 million acres), the Scapegoat Wilderness (96,000 hectares; 240,000 acres), and the Great Bear Wilderness (114,800 hectares; 287,000 acres). Other U.S. wilderness areas in the Crown include the Rattlesnake (13,200 hectares; 33,000 acres) and the Mission Mountains (29,600 hectares; 74,000 acres).



The Bob Marshall Wilderness Complex, or “The Bob,” is the flagship wilderness area in the national wilderness system, one of the largest wilderness areas in the Lower 48 United States and among the first protected by the Wilderness Act of 1964.



Bob Marshall was a New York native and a Harvard-educated forester. In the 1920s and 1930s, he worked for the U.S. Forest Service. Earlier in his career, Marshall advocated the racial

desegregation of Forest Service campgrounds. Later, he became a champion of wilderness and, along with Aldo Leopold, was a founder of the Wilderness Society. Marshall was well known in the Crown of the Continent and was particularly famous for his marathon hikes, which sometimes covered 30 or 40 miles in a day.

In total, the U.S. Forest Service manages 640,000 hectares (1.6

million acres) of wilderness in the Crown. In the United States, official wilderness areas can only be designated by Congress.

Glacier National Park is about 400,000 hectares (one million acres), more than 90% of which is managed as wilderness. (However, unlike the Bob Marshall Wilderness Complex, Congress has not designated any of Glacier’s backcountry as official wilderness.) Non-wilderness or frontcountry areas include the Going-to-the-Sun Road and other vehicle



traffic corridors, and developed areas such as Many Glacier and Apgar.

The Confederated Salish and Kootenai Tribal Reservation also includes a wilderness area, in the southwestern portion of the Mission Range, managed by the tribes. Established in 1982, this is one of the first tribal wilderness areas in the United States. This wilderness is 36,800 hectares (92,000 acres), with a 9,200-hectare (23,000-acre) buffer zone.

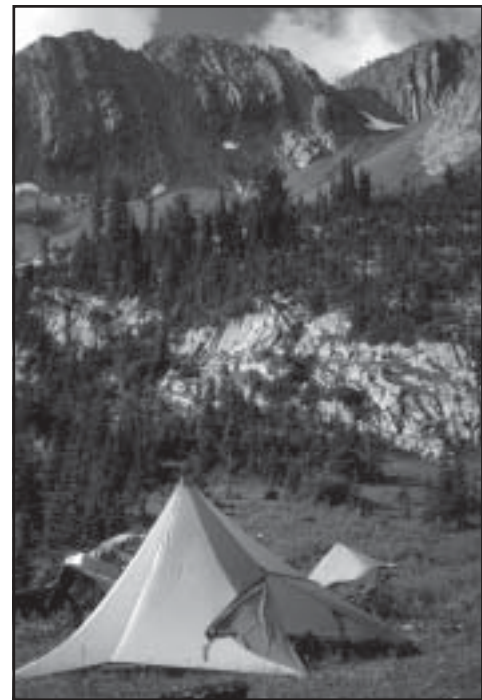
Canada has no federal law similar to the U.S. Wilderness Act. In Canada, both federal and provincial governments protect wilderness values through a variety of means. Waterton Lakes National Park is both valuable wilderness and relatively developed. It is one of the smallest national parks in the system and, relative to its size, is heavily used. As in Glacier, backcountry portions of Waterton are managed as wilderness. About 83% of the park is designated by park managers as wilderness, and it is now being mapped for legal designation under the Canada National Parks Act.

Three British Columbia provincial parks fall in the Crown of the Continent. Elk Lakes Provincial Park, in the upper Elk River drainage, is within the Crown. Also, about 30% of Top of the World Provincial Park is within the Elk River drainage and therefore in the Crown of the Continent. Akamina-Kishinena Provincial Park is snug against the west side of the Continental Divide and Waterton-Glacier International Peace Park, increasing the size of protected wilderness there. Several Alberta Parks and Protected Areas are within the Crown of the Continent, such as the Bob Creek Wildland Park and the Beehive Natural Area. Such protected areas are selected for their biological diversity, productivity, and other features.

Both U.S. national forest and provincial crown land have significant undeveloped mountainous areas that are neither formally

protected nor fully developed. These locations, such as the Whitefish and Swan ranges in Montana and the Macdonald Range in

British Columbia, offer some wilderness values, but also allow non-wilderness uses, such as mechanized recreation. Most of these so-called roadless areas are poorly suited for



production because of poor soils, steep slopes, and slow growing conditions.

In our political processes, people often define wilderness areas on the basis of social values—such as high mountain lakes and pretty scenery—rather than ecological values, such as quality of wildlife habitat. Wilderness areas also offer increasingly rare values, such as space for big, wide-ranging wildlife. Wilderness offers solitude and quiet, watershed protection, scientific study areas, and other “multiple uses.”

### **Timber**

Logging has been an industry in the Crown of the Continent for more than 100 years. The Swan Valley, the North Fork of the Flathead Valley (both north and south of the international border), as well as the Stillwater, Seeley Lake, Clearwater/Blackfoot, and Elk drainages, produce logs for mills. The historical pattern has seen logging operations set up first in the lowlands, then gradually move up

slope.

Regrowth on some lowland forests logged decades ago is now reaching maturity and is being logged a second time. Logging takes place on the forests of the Rocky Mountain Front, but not as extensively as on the more forested west side of the ecosystem.

In the United States, the federal Forest Service provided saw logs for lumber throughout the post-World War II building booms. Sawmills depended on raw material from public forests to maintain production. Since the 1980s, logging levels on U.S. national forests have declined, as managers emphasized protecting old growth, water quality, biodiversity, and other elements of ecosystem management. While logging still takes place in U.S. national forests, it is at a much slower pace than a few decades ago.



This change in the timber supply has had both economic and social repercussions.

Logging continues to be controversial. Timber harvest can influence water quality, wildlife, and scenery, but at the same time creates jobs and necessary wood products. While logging has declined on U.S. federal forests, logging on private and corporate forests has increased. However, many people support logging on U.S. national forests, particularly in an environmentally sound way, because of its economic benefits and as a way to reduce use of fossil fuels and somewhat replicate the effects of natural fire. On private land in Montana, loggers must follow stream-

side protection laws, the Endangered Species Act, and similar laws. Land managers take part in a voluntary “Best Management Practices” program, which includes spot inspections of logging sites.

In Canada, the timber industry tends not to own forests outright, but rather receives large, long-term timber leases from the provincial governments. Agencies like the B.C. Ministry of Forestry and the Alberta Ministry of Sustainable Development oversee harvest practices. In Alberta and British Columbia, some companies may own thousands of hectares of timberland, but do not have the kind of sweeping landholdings that Plum Creek does in Montana.

### **Agriculture**

Farming occurs around the edges of the Crown of the Continent. Mountains are poorly suited for agriculture, but some valleys and prairies are quite productive.

A wide variety of crops—grains, hay, vegetables, fruits, and mint—are grown in fertile places like the Mission and Flathead valleys. These farms also raise dairy and beef cattle and other livestock. On the east side of the divide, within the Crown, ranching is more widespread than cultivation because of the quality of the soil and low precipitation. While the prairie adjacent to the Rocky Mountain Front is largely rangeland, barley, wheat, and other crops are also grown. Cultivation of grain crops is generally limited to areas with a supply of irrigation water.

In some places, like the Flathead Valley, farmers tap into groundwater for irrigation. Elsewhere, such as the Mission Valley and along the Rocky Mountain Front, reservoirs and canals collect and distribute surface water. The Oldman River, Lower Two Medicine Lake, and Valier and Bynum reservoirs all use surface water. Ranching has been an industry in the Crown of the Continent for more than five generations. Cattle and sheep are the

traditional livestock; however, alternative stock like bison are also raised. In spite of widely fluctuating beef prices, cattle ranching remains an important economic and social part of Crown of the Continent.

Cattle are grazed on both private and public land, on both sides of the Continental Divide. Grazing is most intense on the grasslands on the east side of the divide. Cattle graze natural meadows and in forests that are open enough to allow grass to grow. Ranching has traditionally kept large portions of land open for wildlife, providing winter range and migration zones. Like any human activity, however, the livestock industry has some non-



beneficial impacts, particularly where intensive livestock operations (feedlots) can pollute air and water.

Along the Rocky Mountain Front, ranching has conserved much of the natural montane and foothill landscape bordering the Crown of the Continent and is an important sustainable industry that also contributes to wildlife and habitat conservation.

### **Mining and Oil and Gas Development**

Some of the first white explorers in the Crown of the Continent searched for precious metals. They rarely struck it rich. While mining still occurs here today, it is entwined in a complex legal system and is governed by the whims of international markets.

Some of the first oils wells in western North America were drilled near Kintla and Waterton lakes. Today, oil pumps or “donkeys” still

bob up and down on the prairie in some portions of the Rocky Mountain Front.



Oil exploration took place in the North Fork of the Flathead as recently as the 1980s. Exploration is still being done up and down the front.

In Alberta, the Shell-Waterton gas field was developed in the 1970s, in the country north of Waterton Lakes National Park. The gas field north of Waterton Lakes National Park is among the largest in Canada.

Coal fields in southwestern B.C. include the Crowsnest, Elk Valley, and Flathead. These coal fields have produced over 360 million tonnes (396 tons) of coal

since 1898. Coal mined from the five open-pit mines is exported and used mostly in refining metals.



The Flathead coal field has drawn much attention, because coal mining can involve substantial pollution and ecological disruption, and because the North Fork of the Flathead flows downstream from Canada into Montana’s Flathead Lake. In 1976, a British Columbia company proposed developing coal beds in the Cabin Creek drainage of the North

Fork of the Flathead River. This prompted concerns from people downstream in Montana about the impact the inevitable mine waste would have on Flathead Lake and on bull trout spawning streams. In the end, this controversy prompted international cooperation in managing the drainage, particularly through the Flathead Basin Commission. The coal remains in the ground, and mining interests remain interested in exploiting it, but real progress has been made to make sure international environmental concerns are taken into account before any mining is approved.

Gold ore occurs along the Continental Divide, near the headwaters of the Blackfoot River. Canyon Resources has a plan for a large gold mine on both private and state land there. That gold mine was stopped for the time being by a statewide citizens' ballot initiative which banned cyanide-leach mining practices. That ballot initiative is now being challenged in court.

We all use metals and fossil fuels, and people in those industries tend to earn substantial salaries. Although mining technology has improved and environmental protections are tighter than in the past, removing ore from the earth remains a disruptive process. The Crown of the Continent still contends with pollution from past mining operations, such as arsenic and heavy metal contamination produced by a century of mining and smelting near the headwaters of the Clark Fork, in the southern portion of the Crown of the Continent.

Coal, gas, and oil aren't the only sources of energy in the Crown of the Continent. Windmills generate electricity on the prairie near Crowsnest Pass and east of Waterton, and many small hydroelectric projects are being developed in the area.

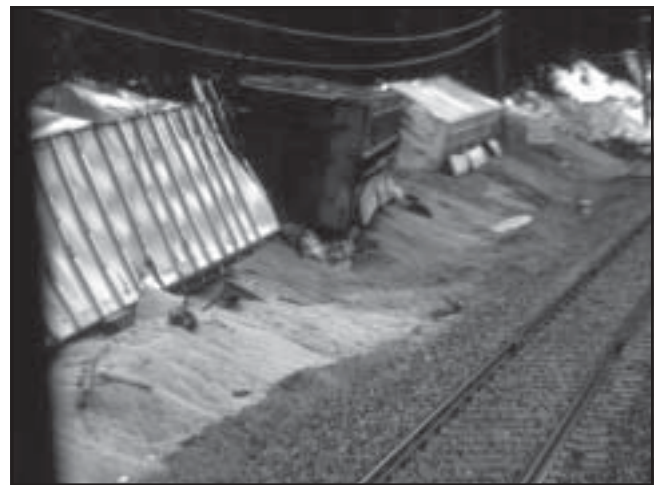
### **Transportation Routes**

From the perspective of conservation biology, transportation routes can significantly

disrupt the ecological integrity of the Crown of the Continent Ecosystem.

As we have discussed, the mountains of the Crown are a refuge for large, far-ranging creatures such as grizzly bears, wolves, and wolverines. The mountains are also a pinch point, or a particularly narrow point, on the larger Rocky Mountain cordillera.

Our transportation routes tend to run east-west at low passes across the mountains, and north-south along river valleys. If roads and railways become busy, they block wildlife movements throughout the Crown of the Continent and break the ecosystem into smaller, more vulnerable habitat islands. Animals that cross roads and railroad tracks have increased risk of being struck and killed; less adventuresome animals are reluctant to venture across these routes and may lose the benefits of crossing into new territory for food or reproductive purposes.



Train derailments are also a problem, especially when tons of grain spill onto the ground, as happened in several incidents in the late 1980s and early 1990s. In addition, steady amounts of grain leak from railroad cars even during normal operation. Spilled grain attracts wildlife to the rails, where they are often killed in collisions. Animal-train collisions south of Glacier National Park have been one of the leading causes of grizzly bear

fatalities in the Crown of the Continent.

The problem isn't limited to traffic. Clusters of residential, industrial, or commercial development along the tracks may combine to create an impenetrable barrier. These kinds of changes are subtle, occur slowly, and are difficult to detect and measure. Potential barriers to wildlife movements in the Crown of the Continent include Montana's Rogers Pass along Montana Highway 200, Marias Pass along U.S. Highway 2, and the Hi-Line rail route and Crowsnest Pass along Canada Highway 3. There are proposals to widen both U.S. 2 and Canada 3 from two lanes to four.

There are ways to mitigate the impact rail



and road traffic has on the landscape. In Banff National Park, for example, animal overpasses have been built over a busy highway, although the utility of such highway crossings remains highly questionable. An underpass was built in Glacier National Park to allow mountain goats passage under U.S. 2 at the popular Goat Lick observation point. Research conducted along U.S. 2 near Marias Pass aims to determine where grizzly bears tend to cross the road and railway. Conservation efforts are underway at Crowsnest Pass to protect wildlife passages there.

Further research is necessary to understand how traffic corridors influence breeding birds and small mammals. Some initial work is being done along the Trans Canada High-

way in Banff National Park.

Roads do more than block wildlife movements. They also take up space that



might otherwise be wildlife habitat. This is true not only of major highways, but of all sorts of roads. Roads built to haul logs and ore soon become recreational corridors for cars, all-terrain vehicles, skis, and other modes of transportation. This sudden influx of people into formerly inaccessible habitat can disturb and displace wildlife and lead to increased poaching.

### **Cities and Rural Residential Development**

The Crown of the Continent is still largely rural, but it is becoming increasingly urbanized. Industries such as aluminum plants and sawmills with log yards are generally placed in or near cities with good highway and rail access. Often, urbanization follows highway corridors, creating long strips of urban or semi-urban development.

Like much of the Rocky Mountain region, the Crown of the Continent is an increasingly popular place for people to live.

Overall, the human population is expanding here and in some



places quite rapidly. Montana's Flathead County, for example, grew by more than 20% in the 1990s, even though traditional industries were stable or declining. In short, people

flocked to the Flathead Valley seeking a better quality of life. Towns like Fernie, Blairmore, Pincher Creek, Whitefish, and Missoula are experiencing similar growth. While most residential growth has been on the western side of the ecosystem, east side rural towns, like Cardston, Choteau, and Augusta, are also seeing population increases. Residential development, especially for luxury recreational homes, has recently been approved on the very outskirts of Waterton Lakes National Park. This contrasts sharply with the rural Midwest where many rural areas have lost population in recent decades.

Another trend is the fact that much of the new development is occurring outside cities and towns as farms and forests are converted to subdivided acreages. In Flathead County, about 70% of new homes are being built outside city limits. In the 1990s, 1.4 acres of Flathead County farmland was converted to homes every hour. Plum Creek Timber Co. (the largest private landowner in Montana) has embarked on an ambitious program to sell lakeshore and riverfront land for residential development. That trend erases wildlife habitat and open space, but due to the rising price of land and declining prices for crops and livestock, many farmers and ranchers find themselves under increased pressure to sell.

Various economic and demographic forces are behind this phenomenon. One is an economic downturn in traditional industries like timber and farming. Another is the aging of the “baby boom” generation.

Many people are looking for a secluded, scenic place to retire and want to buy land next to protected areas for the recreational

opportunities. Technologies such as the internet and fax machines also allow entrepreneurs to conduct business in increasingly remote locations. The economic boom of the 1990s also allowed many people to afford second homes. The Rockies have a certain cachet, attracting sports figures and television and movie personalities. Newcomers may have different life experiences and values than traditional residents, and conflicts can occur. Economic studies have shown that the highest rates of growth occur in areas next to protected lands, such as the Crown of the Continent.

This rapid growth, and its accompanying changes, ripples through both the social and ecological fabric of the Crown of the Continent. Long-term residents are forced to give up prized elbow room and privacy, and property tax rates escalate as property prices rise. People who move here for the scenery or wildlife see it disappear as the place becomes increasingly similar to places they left. Government services, such as roads, police, and schools, are strained as more people demand services but are reluctant to pay higher taxes.

### **Tourism**

Tourism in the Crown of the Continent contributes to the education and enjoyment of



more than 2.5 million visitors annually. The unique trans-boundary visitor experience highlights the concept that nature knows no political boundaries and furthers public understanding of the idea of

an ecosystem. Natural landscapes encompassed in the Crown of the Continent have long been part of the tourism product in the

Rocky Mountain corridor. However, the concept of healthy ecosystems as a tourist attraction is new. The first tourism initiative to recognize an integrated international ecosystem as an attraction was the Trail of the Great Bear, a heritage tourism concept that began in the Waterton-Glacier International Peace Park in 1985. That concept continues to evolve through the Waterton-Glacier Heritage Tourism Strategy. Working together, Waterton and Glacier national parks and private and public tour operators support tourism founded on the preservation of, and communication about, the Crown of the Continent.

Current travel research suggests that the future of nature-based tourism will be determined by the quality of the ecosystem in



which it is based.

While the residential population of the Crown of the Continent remains relatively low, high-profile national parks, wilderness areas, and associated recreation opportunities will continue to attract millions of visitors each year. Most tourists visit the Crown of the Continent in June, July, and August. Glacier National Park sees about 75% of its annual visitation of 1.5 to 2 million visitors in those three months. In other words, nearly three-quarters of the park visitors are squeezed into one quarter of the year. The so-called shoulder season months of September and May are also

becoming increasingly busy, as more seniors are discovering the joys of travel at these times of year. September logs more visitors than May, because of drier weather and fewer snowbound roads.

Winter recreation is increasingly popular as well, particularly associated with downhill skiing. Fernie's Alpine Resort has doubled the number of ski runs since 1997. The Castle Mountain Resort, near Pincher Creek, has expanded from a 160-hectare to a 600-hectare ski area since 1992. The Big Mountain Ski and Summer Resort in Whitefish is poised for a \$300-million (U.S.) expansion and already attracts 250,000 skiers in a season. The Big Mountain covers some 2,189 acres, most of it on the Flathead National Forest.

Snowmobiling and cross-country skiing are also popular winter activities, and several businesses cater to enthusiasts of those sports.

Rafting and kayaking are popular on the Elk, Wigwam, Flathead, and Swan rivers. Lakes such as Flathead, Swan, and Hungry Horse Reservoir are popular for both motorized and non-motorized boating. The wind-swept waters of east side lakes, such as Upper Waterton, attract windsurfers. Fishing on lakes like Flathead and Duck lakes, as well as rivers such as the Elk and Castle rivers, is also popular. Hunting season attracts visitors pursuing elk and deer.

Undeveloped and wilderness areas offer some of the finest terrain for backpacking and horsepacking trips in the United States and southern Canada. People also enjoy driving back roads in four-wheel drives and all-terrain vehicles.

Birding is one of the fastest-growing outdoor activities in North America and is also seeing increased interest in the Crown of the Continent, particularly at places like Freezout Lakes, Ninepipes National Wildlife Refuge, and other hot spots.

## Sources

Trant, Douglas; de Boer, Christine; and Van Tighem, Kevin. "Environmental Change in the Crown of the Continent Ecosystem: Socio-economic Trends Around Waterton Lakes National Park." Pamphlet. Statistics Canada. Waterton Lakes National Park, n.d. (early 1990s).

