BACK TO THE BISON: THE CONFEDERATED SALISH & KOOTENAI TRIBES AND THE NATIONAL BISON RANGE[1]

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ABSTRACT

Thirty years after taking over the reins of forestry, recreation, wildlife and other natural resource operations on their reservation lands, the Confederated Salish and Kootenai Tribes (CSKT) established a reputation for environmental leadership in wildlife, wilderness, recreation and co-management. As students work through "Back to the Bison," they participate in strategic decision-making from the perspective of how CKST made decisions about their relationship to the bison and to the surrounding lands, including the National Bison Range (NBRC). These relationships bring the Tribes into the process of evaluating the science of genetics and their own traditional ecological knowledge. Modern wildlife management practices based on western science are at issue and create opportunities for lively debate. This case provides opportunities for students to build research skills by reading and evaluating articles on genetics and the role of science and traditional ecological knowledge in wildlife management.

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PART I HOME ON THE RANGE?

Yesterday and Today

Thirty years after taking over the reins of forestry, recreation, wildlife and other natural resource operations, the Confederated Salish and Kootenai Tribes (CSKT)[3] firmly established self-governance though their own political and governmental institutions. Implementation of the Indian Self-Determination and Education Act (ISDEA) of 1975 and the Self-Governance Act Amendments of 1994[4] were fully achieved. The Tribes exercised this essential right of self-determination in managing their forestry, water, and lands with well-established and effective tribal natural resource operations. A dynamic four-year Salish Kootenai Tribal College provides educational opportunities in wildlife management, forestry and recreation. Located in Montana in the beautiful Mission Valley, the Tribes carved out a role as a leader in environmental protection and conservation. The Tribes were first in establishing a wilderness area, managing significant elk and wild sheep herds, and overseeing recreation, hunting and fishing programs for tribal members and the public. The Tribes advanced their co-management skills with a hydropower operation and administered a comprehensive environmental mitigation program. Yet a part of the traditional ecological landscape was missing. It was time to go back to the bison.

To understand their concerns, it is useful to return to the major federal strategy for the Plains in the 19th century that was aimed at eliminating the Plains bison, thus weakening the indigenous bison-based economy and culture of the region and preparing the area for forced political and cultural absorption into the U.S. The bison-based traditions, culture and economy provided for a diversity of needs- food, shelter, clothing, utensils, pack-bags, trade items, and ceremony. The new pressures from over-hunting and settlement devastated the giant herds and their habitat. Decline was speedy and extreme, reducing tens of millions of bison to a few hundred at the brink of extinction. Attitudes of the time justified removal of both Indians and bison, even referring to the bison as a race parallel to the Indian peoples. George Bird Grinnell wrote in Scribner's in 1892, "When the most enduring relics of a vanished race shall have passed away, there will be found, in all the limitless domain darkened by their feeding herds, not one trace of the American buffalo." (Grinnell, p. 286)

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[3] The Confederated Salish and Kootenai Tribes' web site states: The Flathead Indian Reservation is home to three tribes, the Bitterroot Salish, Upper Pend d'Oreille, and the Kootenai. "Confederated Salish" refers to both the Salish and Pend d'Oreille tribes. The territories of these three tribes covered all of western Montana and extended into parts of Idaho, British Columbia and Wyoming. The Hellgate Treaty of 1855 established the Flathead Reservation, but over half a million acres passed out of Tribal ownership during land allotment that began in 1904. http://www.cskt.org/hc/index.htm

[4] Includes the Tribal Self-Governance Act of 1994.

Grinnell's prophecy did not materialize, partly because American Indian tribes played the critical and contrarian role of preserving the American bison, popularly called *buffalo*.[5] Historically, the need to manage the human use of bison herds turned the CKST into a company of wildlife scientists, biologists, geographers, meteorologists, ethno-botanists, and perhaps most of all, cultural experts. Their systems of rules, spiritual practices and laws for people limited unsustainable behavior by regulating interactions with the animals, the hunt, and allocating the distribution of the meat, hides and all the gifts of the buffalo. Buffalo were central to the stories and oral history narratives that taught values to young people. Interviews collected in the Montana Writers Project show that they were expert hunters who carefully studied the land and game. (Whealdon) [i] (See Endnote 1 for information about the Montana Writers Project). According to Henry Burland, "Buffalo power, being considered supernatural, was appealed to for the healing of the sick, for protection from enemies, and for prophecies regarding the welfare of the individual petitioner and the destiny of the tribal group…their myths reveal a close intimacy between Indian and buffalo, they visit and joke each other, quarrel and conciliate."(Burland, p. 51)

They knew buffalo to be a social animal: "A buffalo likes, in fact must have, the almost constant company of its kind…..Even in swimming and wallowing, the calves are near their mothers' sides." (Stinger, p.62) According to a peculiar characteristic of the bison, it appears that calves sometimes followed the horses of the hunters who had slain or separated them from their mothers on a hunting expedition.

The buffalo herds, the lifeblood of the Indian Nations of the Plains, numbered between 30 and 70 million at the time of white contact. The "greatest animal congregations that ever existed on the earth" (Matthiessen, p 151) were reduced to a few small herds in the 1800's, victims of wasteful overhunting driven by greed and the implementation of the manifest destiny concept that gave priority to agricultural pursuits. The systematic slaughter of the bison was the military, political and economic expression of colonization and oppression. The Southern herds were the first to go, followed by the massive slaughters that accompanied the Northern Pacific railroad construction cutting directly across Sioux treaty lands. This period of slaughter coincided with the height of the Indian Wars in the 1870's and 1880's.

The Salish continued to hunt the bison on semi-annual eastward trips to the Plains. The Tribes were facing a crisis with increasing military pressure, new diseases, and pressure to move west. They continued the buffalo hunts as long as possible, but the shrinking herds provoked an economic crisis that moved Tribes from a hunting and gathering economy, with some seasonal farming, to a farming and ranching economy. Successful in these new pursuits, they even found a way to bring the buffalo with them into the new economy. Economic independence was closely tied to political independence. The extent of the Indian agent's authority was limited on the Flathead Reservation where the CKST

[5] Cape buffalo of Africa and the water buffalo of Asia are actually the true buffalo, but the American bison has been called "buffalo" for so long now that the terms are used interchangeably in popular literature.

resided because they had meat from their bison and cattle herds. The agent could not use a rationed food supply, as they did on many other reservations, to control tribal members.

TRADITIONAL ECOLOGICAL KNOWLEDGE AND LOCAL ACTION

By the 1870's, less than 100 bison remained in the wild of the perhaps 1,000 total left. Written accounts suggest that a Pend d'Oreilles Indian, Samuel, or Sam Wells, probably also known as Walking Coyote, either brought some calves from the east, or acquired them from another Indian who did. It is possible that they came from around Glacier County, across the pass to St. Ignatius on the Flathead Indian Reservation where he kept a small herd of buffalo that grew from the several orphaned calves that may have at first followed him from the eastern Plains. This account matches oral history accounts of buffalo behavior that tell how buffalo calves when separated from their mothers or orphaned, kneel in the grass to hide. It is said that "If an Indian wished a calf to follow him, he would place a hand over its eyes while he breathed strongly, several times, into its nostrils. The little calf thus became familiar with the scent of the hunter, to whom he instantly transferred his affections, following his horse like a camp dog." (Redhorn, p. 64). These accounts also tell that the buffalo calves would suckle with available cows or mares, ensuring their survival.

Samuel ranged his herd below the St. Ignatius Mission until it grew to 12 or 13 around 1883. He then sold that herd to Charles Allard, Sr. and Michael Pablo, CKST tribal members who were ranching on the reservation. They became partners, keeping the herd on their Flathead Indian Reservation ranches as the last relatively free-ranging herd in the world. It is likely that they added to their herd from other sources as well. In 1893, the Pablo-Allard herd was increased by a buffalo remnant herd at Omaha, adding twenty-six pure bred animals that they kept until they made the later sale to the Canadian government. This herd, according to oral history, originally came from Canada. Some hybrids, or cattalo, were also developed at this time. The management of the herd was described as excellent, with a rider observing them daily (Bartlett, WPA).

This herd was critical to bison conservation: "In the conservation of American bison, the Pablo-Allard herd furnished the foundation stock from which the most virile bands of bison have sprung…those constantly increasing herds of the National Bison Range" (Bartlett, WPA) and other herds in Yellowstone, tribal herds and some herds in Canada. This attenuated local management of bison created a new body of local knowledge built on the traditional ecological knowledge gained from the hunt and traditional relationships with the buffalo. Andrew Stinger, who married Allard's widow and came to manage the Allard herds, describes the adaptability of buffalo behavior. According to this oral history, the herd was protected: "Every Indian in the valley, believing these to be the last ones, aided in their protection. They were permitted to roam wherever fancy led them, but always there was an Indian rider nearby." (Morigeau, p. 79). The Pablo-Allard herd split after Allard's death in 1896, and the Pablo herd eventually grew to a number that was likely considerably more than 700 buffalo.

Tribal members made keen observations. The buffalo were social, but capable of adapting:

> Contrary to a current idea, our buffalo in the Flathead Valley did not roam in one large herd and I presume that was because there were no mass migrations during winter and summer, as had been the habit of the Plains bison. Here, a leader bull and possibly a younger aspirant to that station would head a band, composed of some 20 to 25 cows and calves. This was but one of many similar size groups. In this arrangement, nature made no mistakes. A small band had a better chance to graze, there was less strife among the males, and should something happen to the older bull, the junior leader member became leader. (Stinger, p. 62)

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> Pablo grazed his buffalo on the open range on the Flathead Indian Reserve, about ten miles south of Flathead Lake. Here the valley is about 20 miles wide, the range about 10 miles west of his home. The Flathead River…flows through the western part of the valley with fine grazing lands, small lakes and a few round-top buttes. In winter they fed around the hills on the west side, and in summer swam across to the eastern …..and rarely required hay for feed. Pablo employed several riders, or buffalo-herders as they were known to keep an eye on the animals to see that none traveled far from their home range. These riders, apparently, had little to do except watch them, as there is no record that the buffalo ever attempted to leave the valley. (Monroe, 1902)

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During the period that Pablo-Allard herd ranged on the reservation, some experimentation with "cattalo" hybrids of cattle and bison occurred. The hybrids never found a ready market, and they created concerns later about the purity of the genetics of

some bison. Concerned with conservation under the darkening clouds of federal policy, Pablo sold off some pairs of bison to zoos and other interested parties. When the federal government implemented the allotment policy on Indian Lands through the Dawes Act, and specifically the Flathead Allotment Act of 1904, the reservation was opened to white homesteaders. In 1910, Michael Pablo was forced to sell the bison herd to the Canadian government. Over the years, Pablo and Allard had continued to increase their herd: their original herd of around 13 bison expanded to thirty times their original numbers during a period of twenty-three years. Now, most of them were going to Canada.

The roundups to move this large number of animals were extremely difficult. Buffalo sometimes turned on the riders and charged the line when they were forced from their native pastures. When they scattered, it could take months to round them up. The roundup provided a new view of buffalo behavior: they did not seem to move as a whole herd under these conditions. Michael Pablo selected the most experienced riders and the fastest horses to conduct the roundup. A nine-foot high corral and loading shoots were built, but every day "the buffalo wheeled and charged the encircling riders, broke away and scattered in every direction." (Whealdon, p. 92) They did not move together in gigantic herds as they did on the plains. Instead, they broke off into smaller groups. The roundup provided insight into this new kind of adaptive buffalo behavior. Finally, specially constructed fence lines twenty-six miles long gave them a line to finally drive the bison down to the 24-inch timber corrals before they were shipped by special trains to Alberta. Other attempts to move the bison included building cages on wagons. The drive was said to have lasted about three years between 1906 and 1909, and not all the bison survived the roundup or the train ride to Canada, while others escaped and remained on the range.

This roundup process transferred traditional ecological knowledge of bison into a new environment with new management practices through adaptive management. The entire story is a unique example of how efforts integrating traditional management practices may accomplish a significant restoration effort. When the federal government interfered with American Indian tribal governance of their lands, the result was the loss of the wild range once again. And yet the roundup provided tribal members and their neighbors with increased knowledge about the buffalo and their behavior under changing conditions, information that would be valuable in the future.

As their Flathead Reservation rangelands were fragmented by the Allotment Act, Allard and Pablo realized that their wild bison herd would not be welcome. Allard sold some of his bison to Charles Conrad in Kalispell (this herd was later important as the nucleus of the Bison Range stock) and more to Canada. The big sale to Canada drew strong public response and the American Bison Society was formed. President Theodore Roosevelt and William Hornaday of the Smithsonian worked to persuade Congress to set aside national rangeland for the American Bison. Three reserves were established between 1907 and 1909. The Reserve on the Flathead Reservation was obtained under unclear circumstances: some alleged government pressure and there was talk of two factions in the Tribes. A long-term lease of tribal trust lands established the 18,500 acre National Bison Range in 1908. The area is primarily made up of native Palouse prairie grasslands,

but also includes forest, wetland and river bottom woodlands. This wildlife refuge is " intensively managed for species diversity." (USFWS NBR Brochure. 2005) The extreme damage done to natural processes through farming, cattle ranching and the resulting introduction of noxious plants and exotic animals requires significant conservation work by humans to begin to emulate natural conditions. The bison are vaccinated for brucellosis today, due to largely unproven but politically troubling claims that they might act as transmitters of the disease back to cattle from which it originated. [ii](See endnote 2 for additional information on brucellosis) Bison are strong and hardy beasts, much better adapted to the American Plains than European varieties of cattle. They began to multiply again and herd numbers grew on private ranches. An Inter-tribal Bison Council supported the development of tribal herds, and the refuges protected other small herds.

Bison—Culture and Ecology

The restoration of bison intimately connects place with history, creating a centerpiece of a living ecosystem, especially for the Northern tribes. Understanding and respecting the bison is considered integral to bringing them back. Believing that the buffalo is more than a food source or a genetic-population worth preserving is what forms the bond between people, the bison and the landscape. This provokes an unending commitment to restore the bison and maintain and support the relationship between people and the buffalo. The buffalo is a spiritual being that can be called to those who respect and listen. A White Buffalo has even more special spiritual significance. Through story, song, ritual and meditation, the cosmological aspect of the bison allows for spiritual communication. In an oral history story, recorded by the culture committee of the Blackfeet Nation of Montana, Mary Ground tells the story of Iniskim, the Buffalo Rocks:

> It was the middle of winter in the days before the Pikuni (Blackfeet Tribe) had horses. They were camped down by a creek for the winter and the people were starving. The buffalo had moved out somewhere. The men would go out and hunt but there were no buffalo any place. In camp they cleaned out everything they could think of to eat. Finally they even started to cook those little calf skins they used to dry berries in…They boiled some of their rawhide ropes for food. There weren't even any birds or rabbits left.
>
> The youngest wife of the Chief took her rope down to the creek to get wood. She was looking for some of those dried up rosebuds too, she was gathering up her wood and looking for those dried up rosebuds when all at once she heard some one singing.
>
> Woman over there, you, woman, take me, I am holy.
> I want a gift
> May I have kidney to eat.
>
> There was no one there but her. She stood there but she couldn't see anything. Finally she saw the gravel and rocks rolling down on the side of the cliff on the bank. She went over there and found this Iniskim, a buffalo rock. It's a petrified rock shaped like a buffalo. The woman picked it up and kissed it and said, "You

must be the one who's singing. Sure I'll take you; I'll take you home with me. She put it in her dress and got her wood all ready and went home.

When she got to her tepee, she told her husband, "I want you folks to straighten up the teepee. invite all the elder men, the Medicine Men and the young men. We're going to make Medicine. She showed him the Iniskim and said "I feel sorry for the little ones and the older people. They're starving. We'll see if we have the good luck to get our buffalo back again."

In those days they had buffalo jumps. They were nearly always ready in case the buffalo would come near the camp.

She asked her husband and her sister "Could you give me some sacred paint and some buffalo fur and sweetgrass?" She made a nest of fur and put the Iniskim in it.

All the old Medicine Men came in. They used their rattles and sang that song that she heard by the creek. About midnight the wind came up and a blizzard started. It was like ashes outside, you couldn't see a thing. And here the buffalo came, they just went straight to that buffalo jump and the leaders just kept going.

In the morning it was clear outside. The people went down to the jump and there were piles and piles of buffalo. She saved her people. (Ground, pp. 37-39)

This story attaches spirit to place and emphasizes the need to broaden observational powers by listening to place and to messages that are not necessarily empirically obvious.

Tribal Management and the Bison.

CKST tribal management practices honored the familial relationships of the bison through open-range management. Bison bulls are larger than females, weighing about 2,000 pounds. They have heavy horns and a large hump of muscle that supports their huge heads and thick skull, but they can run as fast as a horse. They become especially ill tempered during rut. The roars and posturing of their battles certainly justifies the expression of "buffaloing" someone. Bison raise their straight and droopy tail straight up when they are ready to charge. Cows have narrower, curved horns and they weigh about half as much as bulls. They are protective of the calves and may be even more dangerous than the bulls when their safety is threatened. Family groups develop leaders who lead them to seasonal pastures and safety. Many stories of bison social relationships exist. A bison herd on the Ladder Ranch in New Mexico entered the ranch for the first time in a certain order. Several years later, when they were gathered up in the special bison holding area to be inoculated, they entered in exactly the same order. (Dobrott, Steve, Interview. 7/10/05). Under the best conditions of traditional management, bison are allowed to develop their own family and social hierarchies and they are never sent to feed lots. To do so is to dishonor the animals and to destroy the naturally healthy lean qualities of their meat.

Besides herds kept by the Plains Tribes, a number of Southwest Tribes keep small herds of bison today. They are regarded as important animals to the spiritual health and welfare of the communities. The buffalo is part of the sacred Mountain Way ceremonies of the Navajo and the Pueblos celebrate their connection to these animals with Buffalo Dances. Before European contact, many of the Southwest Tribes traveled eastward to the southern plains to hunt bison. Bison adapted to a variety of environments and the species reflect diversity in size, coloration and adaptation to new environments. Canadian wood buffalo are significantly larger, almost black in color and they can withstand cold conditions of the extreme north and are recognized as a sub-species along with the plains bison subspecies. The Southern plains bison were reported to be smaller and adapted to warmer conditions and might have been another subspecies, but since they no longer exist, the question is mute. Written transcripts from oral interviews in Montana include stories that describe a smaller "mountain" or "woods" buffalo (not to be confused with the woods bison subspecies in Canada) in Montana, "being darker, smaller wilder and considerably more agile and alert when on the range than the larger Plains buffalo (Courville, p. 129).[6]

Tribal Landscapes: Tribal Values

Tribal systems of land values and landscape-level management differed from private and public land management as it developed within the framework of the U.S. Government. The relationship between people, time and the land was understood through different principles. An important traditional principle was that the relationships within an ecosystem came from a concept of mutual evolution---the idea that peoples, species and processes adapted together in the most useful and efficient ways. This would mean, in the case of the bison, a relationship between the Tribes and the bison would continue to evolve, even under radically changed conditions. Extinction was never an option. The value that emerges from this principle is the value of variety over monoculture. Even if the bison no longer existed in the great herds, smaller groups of bison might succeed. And despite the supposed unity of the great historical herds, evidence existed that bison evolved making adaptations to different conditions. The bison of the Canadian Northwest were bigger and darker; the Southern Plains herds had different characteristics and could survive on sparser grasses of the region. The CSKT's official website describes the connection between tribal people and knowledge in this way:

> The subsistence patterns of our Tribal people developed over generations of observation, experimentation and spiritual interaction with the natural world, creating a body of knowledge about the environment closely tied to seasons, locations and biology. This way of life was suffused with rich oral history and a

[6] This Salish-Kootenai informant is discussing a particular variant of the bison that he describes as "woods buffalo. These animals adapted to the environment of the Mission Valley and surrounding Mission Mountains. The name "wood buffalo" is also used as a common name to describe a distinctly different variant found in Canada. The Canadian type is a significantly larger animal with a dark, almost black coat. In addition, another type of "wood buffalo" is said to have inhabited the Eastern U.S (personal conversation, Pierotti, R., 6/23/10). These are common names and descriptions that suggest considerable geographic-based adaptations in bison herds

> spiritual tradition in which people respected the animals, plants and other elements of the natural environment. By learning from our Elders and teaching our children, those Tribal ways of life continue to this day. (CSKT).

A tribal perspective on restoration may differ from those based in Western science. In the application of traditional ecological knowledge, actions that flow from the principle of restoration are those that are connected to ecosystem processes and apply long-term knowledge to restorative actions. The value that emerges from these actions is the essence of the ecosystem itself. A second restoration principle that emerges from traditional ecological knowledge is that the greater the damage to species and the ecosystems upon which they depend, the greater the responsibility for restoring them. The value that emerges from this principle is human responsibility.

U.S. Fish and Wildlife Refuges and the Government Management of Bison

Around thirty years after the CSKT began preserving the bison, the National Bison Range was created on Flathead Reservation land. This was a unit of the U.S. Fish and Wildlife Service (USFWS) and it meant that a significant portion of CSKT's rangelands and wetlands were removed from their control in 1908. Long in the memory of the Salish Kootenai are these lands the government took for the National Bison Range---lands once within the boundaries of the Reservation by virtue of the Hellgate Treaty and now part of the U.S. Fish and Wildlife Refuge System. The Tribes have long wished to regain a measure of control over these lands.

The establishment of the National Bison Range (NBR) occurred early in the history of the USFWS Refuge System refuge system, and it is considered one of its crown jewels. [7] Following public outcry from the Pablo sale of bison to Canada, the American Bison Society was formed and through the efforts of Theodore Roosevelt and William Hornaday of the Smithsonian. As noted above, Congress at last set aside funds between 1907 and 1909 to establish the several refuges. Carved out of the native-Palouse prairie grasslands, originally part of the Reservation, the habitat of the National Bison Range is diverse with mountain forest, wetlands and river bottom woodlands. Bison, elk and pronghorn antelope share the prairie grasslands. (USFWS NBR Brochure.2005) Additional wetlands were eventually added and today the entire system is referred to as the National Bison Range Complex (NBRC). In addition to bison, 50 different wildlife and over 200 bird species share the range. The nucleus of the bison herd itself came from the original Allard herd, animals once sold to Charles Conrad in Kalispell that were re-purchased for the NBR.

Historically, the USFWS's efforts to conserve wildlife would pit it against political forces within government like few other agencies. The agency developed a strong science-based

[7] The National Bison Range (NBR) refers specifically to the 18,500 acres that are managed for species diversity, including the bison, with special programs for waterfowl and bird communities. The NBR was the focus of negotiations between the CKST. The National Bison Range Complex (NBRC) refers to the NBR plus additional nearby sites administered by the U.S. Fish and Wildlife Service that were not included in these negotiations.

culture with employees dedicated to the science of wildlife conservation. Always challenged by low-budgets, after 2000 the USFWS experienced ever deeper cuts, largely inspired by politically-appointed executives and a Congress unsympathetic to funding the conservation of wildlife. There were structural cuts that threatened up to 25% of the agency workforce. Budget cuts affected the whole NBR complex and herd management too. Roundups, transfers and sales of the bison formed the response to limited range and limited budgets.

Currently, around 350-500 bison live on the 18,500 acre refuge. Government protocols guide bison management at the NBR. Attempts to manage the herd and conserve the range led to fencing. Currently there are eight grazing units, and "Elk Lane," a line rather like the Pablo roundup line, that leads to the roundup corral and joins some of the units. Bison are held in this land during roundup each fall. A vaccination and testing program provide effective disease control for the bison, including control for brucellosis. Management practices were implemented with the idea of carrying capacity (see endnote 3), accomplished through live-sale for the bison: transplants are conducted for other wildlife.[iii] Under this management regime, animals may be corralled and fed before transportation or sale. Protocols for these unusual management conditions did not have direct relationships to the protocols of traditional ecological knowledge. Indeed, holding animals for any length of time is not a traditional practice.

Today, approximately the number of Plains bison is increasing, but many have cattle gene introgression, 96% are subject to anthropogenic commodity (managed as a commodity for human consumption) and only 4% are in herds managed primarily for conservation purposes. Scientists maintain that small herd size, artificial selection, cattle genes and management practices threaten the diversity and integrity of the bison genome, and some call for urgent measures to restore the ecological role of bison in grassland ecosystem. (Freese, et al,)

Concern for genetics was a focus for science-based government management. On May 3, 1933 a partial albino buffalo was born into the herd. Called a white bison, they appear only once in every 5 million births and they were considered sacred by the Indians---it was a crowning achievement for the CSKT to preserve and protect such animals. (Devlin, 2008) It is believed that the offspring of this bull and the genetics that allowed his birth to occur in the first place were removed from the bison range in the 1940's when several animals were sent to Alaska to populate the Delta Junction Bison Range. (Devlin, 2008)

Science-based management of bison is beginning to show some degree of coordination between state and federal agencies and the focus is greatest on genetics. For example, the *Final Bison and Elk Management Plan and Environmental Impact Statement for the National Elk Refuge, Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway* (U.S. Department of the Interior, FBEMP) emphasizes similar issues and concerns about genetics and like most government policy developing around bison. Although it discusses adaptive management, (see endnote 4) the plan leans toward herd reduction as a solution to multiple issues. [iv](USDOI, FBEMP) Curiously, it excludes the

entire history of the Salish-Kootenai and Canadian herds, stating that bison "were extirpated in the mid-1880's outside Yellowstone National Park."(USDOI, FBEMP, p. iv) The current bison research project at the NBR is focused on DNA testing and bison.

Bison are subject, like other animals restored to their habitat, to management reductions especially if they are successful in reaching "minimum" numbers. In a time of tight budgets, agencies seem to be looking towards transfers, sales and hunts as the preferred options. Even when external scientists suggests increasing herd numbers, political pressure on agencies makes it difficult for the dedicated employees to plan for extensions in the land base. Events in recent years have demonstrated incidents of the suppression of science within agencies like the USFWS due to political pressure.

Herd reduction goals contrast with the non-governmental and tribal conservation initiatives that look for the extension of habitat for bison. Scientists and policy advocates working outside of the federal government for nonprofit, federal and environmental groups envision the full restoration of the bison and their role in the grasslands ecosystem. (Freese, et al, La Duke).

New directions are emerging from current economic and demographic realities in the Great Plains, the combination of new and traditional ecological and scientific information about bison behavior and active conservation initiatives. Smaller private herds of bison are proliferating, with 95% now in private hands. Some private ranches manage free-ranging herds that replace cattle on the range, with organic meat from those herds finding a good market. In the Southwest this can greatly increase the recovery of riparian areas, since the impact of bison on the land is much less than that of cattle. Not all bison ranches adopt these practices, and in some cases, penning and feed lots where the animals are tightly confined are employed. Bison adapt to a variety of environments and the species reflects significant diversity. Yet even with positive trends, strong leadership and collaboration are needed to create new models if bison are to be conserved in an ecologically sustainable way that is connected with their natural habitat.

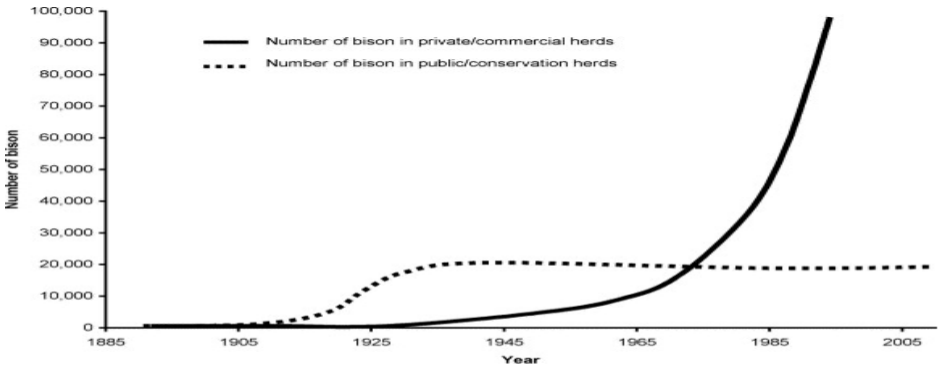

Fig. 1. A comparison of bison numbers estimated to occur in public/conservation herds (Boyd, 2003) and in private/commercial herds from 1883 to 2003; private/commercial animals totaled around 500,000 by 2003.

In this chart, Boyd used a number of credible references to contrast trends in the increases of bison in private/commercial herds with the increases in the public/conservation herds. His references include: American Bison Society, 1908, 1911, 1914, 1918, 1923, 1930, Callenbach, Dary, Hornaday, and Seton. (Boyd).

Science-based management led to further diversions from tribal objectives. The USFWS developed a long-term strategy to improve bison genetics across the nation by breaking up the National Bison Range herd and moving animals to other areas for breeding purposes. Regional Supervisor Rundles noted bison herds at national wildlife refuges have been independently managed, but new science in the past four to five years has paved the way for meta-population management that can help keep cattle gene integration in the herds low.

"The National Bison Range bison are the most valuable we have," Rundles said, "…..many of the bison at the National Bison Range show no evidence of cattle genes" and meta- population management will allow other herds to benefit. (Devlin, 2007) These kinds of programs would help reduce the less pure genetics of the hybrid "cattalo" that could be mixed into the genetics of contemporary bison. The USDOI, FBEMP also discusses breaking up herds to improve genetics.

This idea of breaking up the herds was painful for the CSKT because it broke up their intergenerational relationship with the bison and the range. They felt that the failure of the FWS to cooperate in the past eventually had more to do with a planned breakup of the herd than the genetics:

"To see the herd broken up and sent in a dozen different directions is heartbreaking for the Tribes," Rob McDonald commented in a newspaper article, "Had the FWS been cooperative in working with the tribes, the drastic reductions may have been avoided and the general public served better." (Plummer)

While advocating for breaking up the herd for genetic reasons, it was also noted by Rundles that geneticists have told the USFWS that to conserve the public's bison herds: they need to be kept at 1000-2000 animals. None of the USFWS Refuges are near this number nor do they have the habitat to support that number. Yet the competing objective of reducing the cattalo genetics, probably bolstered by budget cuts, seems to drive policy rather than initiatives to increase the ranges. Significantly, independent scientists suggest that the product of a population viability analysis (MVP) should guide conservation goals for herd size. For large animals like bison, herd size of "100 is considered inadequate, 1,000 is considered adequate for populations exhibiting normal population fluctuations and 10,000 should provide medium to long-term persistence for more variable populations of most herds." (Boyd, p. 35)

Often explained as cultural differences, real questions of science lay behind these different objectives. There were questions of nature versus nurture for the best stewardship of bison. How closely were the social relationships of the bison tied to their genetics and how integral were the social relationships to their survival? Did more experienced animals know migration routes and how to avoid the worst of winter storms? Did the relationships between cows and calves best protect the family unit?

Bison research based on western science suggests that numerous factors affect our understanding of bison. Even taxonomic classifications are debated as to what can be classified as a species, subspecies, or a range within a subspecies, and different scientists choose different places along the continuum of scientific concepts and ranges as the definitive marks between species and subspecies: "Each of these concepts presents challenges, as will any concept that attempts to divide the biological continuum for the convenience of human managers." (Boyd, 36) In addition to taxonomic considerations and the concern for genetic purity, scientists also generally support the importance of local ecological variation: "Nevertheless all forms of geographic and ecological variation contribute to the biodiversity of an ecosystem."(Boyd, from Secretariat of the Convention on Biological Diversity, p. 36). Could these considerations suggest, even from a genetic point of view, that it might be best to keep the geographically connected herd with good genetics in one place until their numbers grew considerably larger---at least to the level if not beyond the original Pablo-Allard herd?

INTERESTED PARTIES

Since the turn of the century, various groups formed in support of saving the bison. Many wildlife and environmental groups continue that interest. An estimated 1,000 ranchers raise bison. Some privately owned bison herds have turned out to have excellent genetics, such as the bison herd on the Ladder Ranch in New Mexico owned by Turner Enterprises. (Dobrott, Steve, Interview, 7/10/05) Although this is good news, some think that it is not really the way that bison will be "saved." They prefer the controlled refuge system. They maintain the idea that the bison is not likely to be fully integrated into the landscape taking the position that with the loss of the vast Great Plains habitat, bison are in some way "ecologically extinct."

> Biologically, any creature is fully defined not in isolation but in relation to its full range of natural behavior and the ecosystem with which it coevolved. The American bison, as a species survives. But gone are the vast prairies. Gone, presumably forever, are the vast herd complexes that functioned as super-organisms…Gone too…at least for now is active predation by the plains wolves or the occasional grizzly and the related culling of the less fit from the herd: gone, therefore, are the key elements of natural selection for the beast. (Luoma, 1993)

This position is distinct from a position derived from traditional ecological knowledge that the bison and people can evolve together in restoration efforts. Yet most of these

groups share the tribal goal of increasing the span of tribal management and increasing free range management and the number of bison.

TRIBAL DECISION-POINT

CSKT wishes to reassert management over the National Bison Range lands but not the entire NBRC. This would re-connect them with the bison, but the political and scientific scenario is complex. They focus specifically on the NBR on lands that were originally part of the Reservation, and not including all of the lands in the NBRC. Several strategies are under consideration.

First, they could go to Congress and ask that the lands be returned to the Tribe. But such a request in the national political arena might create a wave of opposition from those who would see it as an attack on public lands, wildlife, and the U.S. Fish and Wildlife Refuge System itself. Obtaining title in fee-simple would likely require Congressional action entailing a national debate. At the very least, publication of such a land transfer in the Federal Register would result in an outpouring of political action from environmental groups supporters and managers of the USFWS, and groups who generally oppose Indian rights. Other opponents might include fee holders who live within the bounds of the reservations. Many neighboring landholders generally oppose any furtherance of tribal authority and jurisdiction, and they use their influence with their state and Congressional representatives. The road to ownership in fee simple and conversion to Indian Trust land promises to be long, expensive, and rocky, but it would a perfect match for CSKT's authority and ability to implement their cultural vision through natural resource operations and policies.

A second alternative would be continuing the cooperation with the U.S. Fish and Wildlife Service to maintain the status quo. The Tribes cooperated with the USFWS on waterfowl surveys and worked to rebuild regional Canada goose populations in the past. The agency and the Tribes have at least some shared goals in maintaining the area for fish and wildlife, and there is little opposition to informal cooperation. Yet the USFWS's management regime is not the same as CSKT's because they manage the area for the "general good," with special emphasis on meeting the needs of tourists. They do not implement cultural practices nor define restoration goals in terms of tribal perspectives as described here. They are collaborating with other refuges and agencies to implement a scientific strategy to improve bison genetics by breaking up the NBR herd, which has superior genetics. This means sending bison to other federal areas that manage for bison. And the USFWS does not manage reservation lands, so that they do not have an internally formulated ecosystem wide plan, but must manage within the boundaries of the NBR which limits the size of the herd. Agency planning efforts are bound to stakeholders, general public interest and the heavy armor of federal regulations and policies. It also changes their internal objectives and external relationships. The federal government and the CSKT do not share a vision for the bison that comes from the same understanding of time, space, location and strategy. Yet the cooperative alternative leaves opportunities open for steady progress and lessened public debate.

A third alternative remains—and that is to pursue the extension of direct tribal management authority over the NBR lands through a co-management agreement without seeking ownership through a trust-status request from Congress. The Indian Self-Determination and Education Act (ISDEA), through the Self-Governance Act Amendments of 1994, gave the Tribe a powerful authority to reclaim management of areas of preeminent historical and cultural interest to Tribes. Salmon fisheries in the Pacific Northwest are co-managed by the Tribes and States. The Forest Service and the Bureau of Land Management also successfully tried this model in areas of the Pacific Northwest, and recently the USFWS implemented a similar agreement at an agency Refuge in the Yukon. Still, nothing of the depth and breadth of taking over fuller management authority has been attempted. One of the most contentious points is what the government would retain as the "inherently federal functions" A second controversy is how decision would be made under co-management. Although CSKT has highly trained fish and wildlife officers, a sticking point may occur around removing USFWS law enforcement officers. The USFWS would surely want to retain final management authority. This option could be settled on without Congress or an expensive NEPA (National Environmental Policy Act) analysis, since it involves only a change in management authority. Some members of the USFWS, particularly local employees, will oppose this alternative, along with some environmental groups who take the position against co-management on federal lands because they incorrectly view it as related to privatization. A co-management strategy is less likely to stir the hornet's nest of a national political discussion or to open up the long-term grinder of litigation that will leave the bison in a kind of limbo.

They must sort out their decision in an upcoming meeting.

THE MEETING A meeting has been called by CKST tribal elected officials to choose one of the alternatives. The timeline is critical--how long can the Tribe afford to commit major leadership, legal, planning and tribal employee resources to an alternative? CSKT must chose how best to use its resources to implement a strategy before the meeting with the Deputy for Fish and Wildlife.

ENDNOTES

[i] *I Will be Meat for My Salish*, written by Bon L Whealdon and edited by Robert Bigart, is a unique compilation of interviews and papers derived from the Montana Writers Project conducted on the Flathead Reservation in the 1930's and 1940's as part of the WPA project. They are a valuable source of information from the Salish elders that chronicled the history of the Salish-Kootenai bison herd. However, the project did not include a consistent system of dating interviews, sources, taking notes, or organizing the papers. In addition, some interviews have been translated from Salish to English and "colorful language" may have been added by the writers. All dates shown in references are dates the papers were submitted: they are not dates of the actual interviews. Some interviews were conducted earlier in the 1920's and were preserved during the Montana Writers Project. Some research reports connected with the project have disappeared. Bigart has organized and edited papers into this book along topical lines. The original papers are located in the *Montana Works Progress Administration Papers*, collection 2336, Merril G. Burlingame Special Collections, Montana State University Libraries, Bozeman, MT. The research reports are in boxes 16, 47, 51-52, 61-62, and 128-30. In Chapter 11, Bigart provides short Flathead Reservation biographies of the WPA interviewees and interviewers that he found in the Montana State University Special Collections.

[ii] Brucellosis in bison is a controversial subject: the main debate is about whether or not brucellosis, a disease that originally came from cattle, can be transmitted by bison back to cattle under wild range conditions. Scientific agency management does not necessarily match up with scientific research. The fear of the potential for transmission drives government policy, which includes shooting bison suspected of being carriers. Tests for brucellosis carriers, the age and gender of animals that might be carriers, and the best method to achieve bison herd immunity are all controversial questions. Additional references on bison and brucellosis can be found at

1. Bibliography of brucellosis of bison (Knapp, et al) http://www.montana.edu/~wwwcbs/brucbib.html
2. *The Buffalo War* Lesson 2: Brucellosis in Bison: How Serious is the Threat? http://www.pbs.org/buffalowar/lesson2.html
3. Buffalo Field Campaign *Brucellosis in Wild Bison Facts Sheet* http://www.buffalofieldcampaign.org/factsheets/brucellosisfacts.html
4. Montana State. Dept of Livestock, Greater Yellowstone Bison Brucellosis http://liv.mt.gov/liv/ah/diseases/brucellosis/gya.asp
5. For a related case study see Charla H. (1998), The Brucellosis Bacterium: Small but mighty: an infectious animal disease decision case. *Journal of Natural Resources and Life Sciences Education*, v. 27:145-154.

[iii] *Carrying capacity* as a principle in biology relates to the idea of establishing sustainable populations and it can be applied in different ways. There are many definitions, but a good general definition is "The maximum number of animals that a specific habitat or area can support without causing deterioration or degradation of that

habitat" (North Carolina, Cooperative Extension Service, *Wildlife terms: working with wildlife.* www.ces.ncsu.edu/forestry/pdf/www/www13.pdf). Conservation biology takes the principle further by defining biological carrying capacity (e.g. K) as the point at which "maximum population size is sustainable……and establishing a conservation biology specific principle we call social carrying capacity (S). Modeling K and S shows that endangerment can occur when either S<K (culling) or when S< K (harvesting, aesthetics). When S>K, humans then promote population numbers above sustainability." (Gross, M.R. and Davies, E). This makes the concept more useful in applied work in human-constructed landscapes. Some difficulties occur in the application of the principle, with some studies focusing on the inputs like water and grass necessary to support the population. Other studies focus on the impacts of one animal population to other species in the ecosystem. The concept is extremely difficult to quantify, since studies may focus on different input components (water, acres of forage, available prey, etc) and different kinds of impacts.

[iv] Adaptive management may have different applied meanings, but in general it suggests that management practices and protocols need to adapt to new scientific information, especially information derived from monitoring and from new conditions. One definition of adaptive management that the USFWS and the USNPS used in their Environmental Impact Statement on bison and elk management follows:

> The rigorous application of management research and monitoring to gain information and experiences necessary to assess and modify management activities. A process that uses feedback from research and the period evaluation of management actions and the conditions they produce, either to reinforce the viability of objectives and actions presented in a plan or to modify strategies and actions in order to more effectively accomplish management objectives.(U.S. Department of the Interior, *Final Bison and Elk Management Plan*, Glossary. Retrieved 7/10/10 from: http://www.fws.gov/bisonandelkplan/Final%20Plan/14-Glossary.pdf)

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