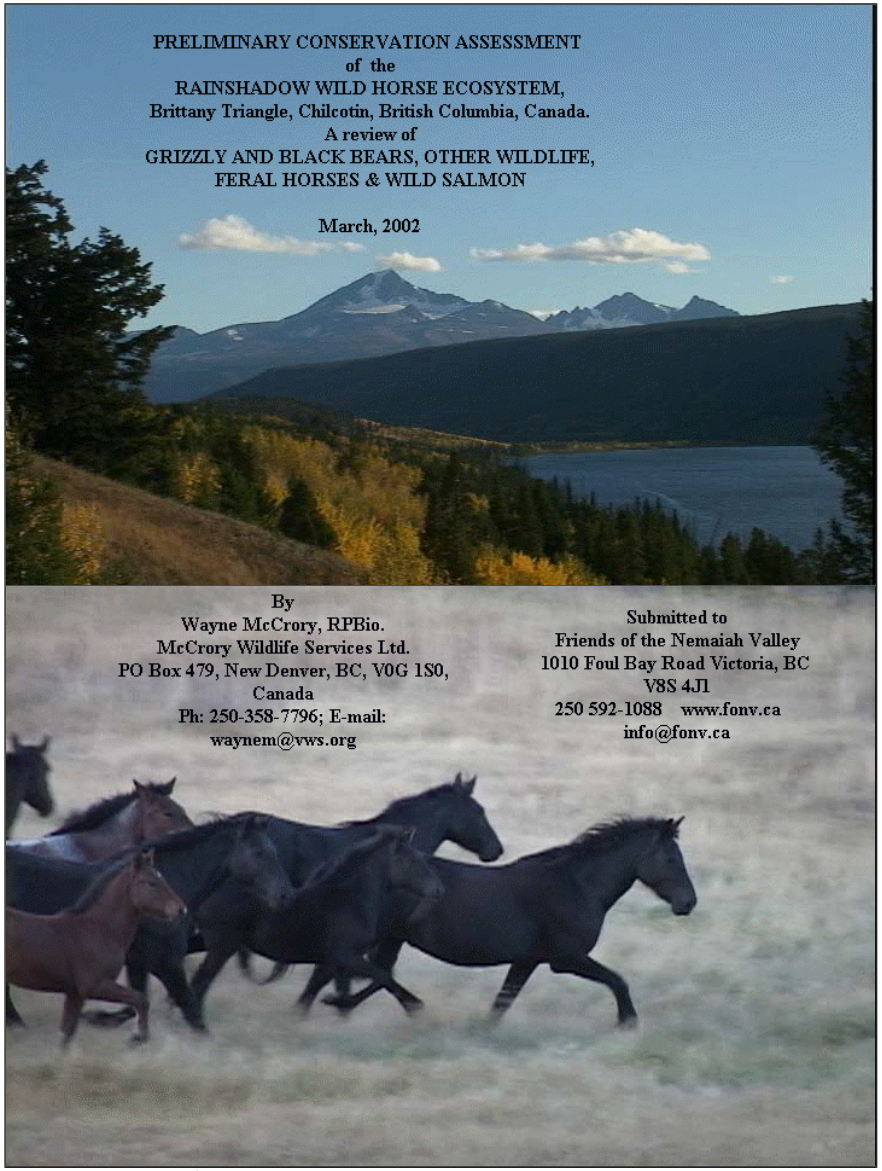


Photos: Garth Woodworth ©

SUMMARY of FINDINGS AND RECOMMENDATIONS

This study was commissioned by the Friends of the Nemaiah Valley (FONV) to provide a preliminary assessment of habitat and conservation values for the grizzly bear (*Ursus arctos*), the North American black bear (*Ursus americanus*), other wildlife, the wild or feral horse (*Equus caballus*), and wild salmon (*Oncorhynchus* spp.) in the Brittany Triangle in the Chilcotin district of British Columbia. The study area is also called the Rainshadow Wild Horse Ecosystem (FONV). “Wild” horse for the purposes of this report also means the feral horse, an ungulate, which lives in the wilderness, has returned to ancestral wild behavioural patterns, and now has a survival-oriented life cycle.

Results are preliminary and further research is recommended. All comments of a scientific nature should be directed to the author.

Study Methods and Study Area

Research for this study included:

- Conducting an inventory using direct-sighting counts, recording instances of animal sign and censusing using remote cameras,
- Conducting detailed habitat transects, undertaken by two experienced bear biologists and Xeni Gwet'in wildlife researchers (June and August, 2001),
- Reviewing salmon data provided by the Federal Department of Fisheries and Oceans,
- Gathering and reviewing local knowledge and
- Extensively reviewing the scientific and historical literature.

An extensive literature review was made of wild horse ecology, origins, and range competition, management and conservation status under the laws and policies of Canada and the United States. Wild horse reserves or potential reserves were reviewed in both Canada and the United States. Impacts of proposed logging were subject to a preliminary review only.

The core study area was the Rainshadow Wild Horse Ecosystem encompassed by the Brittany Triangle. The "Triangle" is formed by the natural boundaries of the Chilko and Taseko Rivers and is approximately 155,000 ha in size. It includes the eastern ranges and foothills of the Coast Mountains. Most is a large foothills Plateau. The study area is within the larger traditional territory of the Xeni Gwet'in First Nation, known as the Nemaiah Aboriginal Wilderness Preserve (1989). Our field research was concentrated in Nuntsi Provincial Park (22,898 ha) and some adjacent surrounding areas, including the Elkin Valley. Xeni Gwet'in gave permission for this research and B.C. Parks provided a research permit for the work in Nuntsi Park.

Over 80 kilometers of habitat transects were conducted on foot, mountain bike and horseback. One aerial survey was also done. By assessing forest cover types, interpreting air photos and conducting field transects, we identified eight preliminary wildlife habitat types, with a priority for grizzly bears, black bears, and wild horses. These were then used to create a detailed GIS (Geographic Information System) habitat map and colour habitat codes. The base map was a GIS overlay of 1:20,000 forest cover and TRIM maps. We rated each habitat type according to its seasonal importance to grizzly/black bears and wild horses, with notations on other wildlife values observed. Seasonal importance values were based on habitat potential, supplemented by observations of feeding activities and other uses in the field and from dietary/habitat information from other studies in ecologically similar areas.

High habitat values

The eight habitats types included six vegetation types, salmon areas, and disturbed habitats:

- Lodgepole pine-kinnikinnick-pinegrass
- Douglas fir-aspen parkland
- Bluebunch wheatgrass riverine "breaks" grassland
- Wet meadow/sedge/shrubfield complex
- Dry meadow/grass/shrubfield complex
- White spruce – horsetail
- Riparian salmon-spawning/migration areas
- Disturbed areas (roads, dwellings, clearcuts, etc.)

The mix of the six natural vegetation types provides for a great variety and abundance of edible plant species for native ungulates, wild horses, grizzly and black bears. This heterogeneity enables the environment to be used productively by a variety of animal species eating different plant species. This appears to include shared but non-competitive winter use of the Wet and Dry meadow/shrubfield complexes by wild horses (grazers) and moose (browsers). The isolation from human encroachment of much of this large wilderness area enhances its security or seclusion value. The area supports a rich predator-prey ecosystem into which feral horses appear to have successfully integrated.

The six natural vegetation types were found to have a moderate to high potential to support grizzly and black bears from spring through fall. Five of these vegetation types are also of moderate to high year-round value for wild horses. Higher elevation areas were not sampled but should be the subject of further study. More detailed GIS mapping should be done to determine the relative extent of each of the habitat types, although it is obvious that all but one, White spruce – horsetail, are common. The most extensive is the Lodgepole pine-kinnikinnick-pinegrass type.

The two large river valleys (Chilko and Taseko), along with Elkin Creek, provide for an extensive zone of river "breaks" habitats dominated by the Douglas fir-aspen parkland and Bluebunch wheatgrass grassland types. Limited sampling indicates high quality spring (green vegetation) habitat for both bear species and all-season habitat for horses and mule deer (*Odocoileus hemionus)*. Salmon runs in the two rivers and Elkin Creek considerably enhance the area's habitat value for bears (and possibly wolves [*Canis lupus*]) in the fall. Further study of bear use and activity sites along the salmon waterways is needed.

On the large Plateau and foothills, numerous Wet and Dry meadow/shrubfield complexes interspersed with large and small stands of lodgepole pine (*Pinus contorta*) comprise a large and surprisingly rich habitat mosaic.

High densities of sedges (*Carex spp.*) and grasses (*Graminoids*) in the Wet and Dry meadow/shrubfield complexes provide for a high spring/early summer (green vegetation) potential for both bear species. These complexes occur along low-gradient stream bottoms and numerous large and small lake/pond depressions. Many meadow depressions occur on a seasonal gradient from flooded to dry. The various meadow/shrubfield complexes are the most important all-season foraging habitats for wild horses and moose (*Alces alces*). Field observations and a separate background study conducted in the Chilcotin

area suggest wintering moose and horses appear to forage on different plant foods, with moose concentrating on browse species such as abundant willow (*Salix* spp.) and horses concentrating on grasses and sedges. During spring, horses and both bear species fed in some of the same meadows.

The Lodgepole pine-kinnikinnick-pinegrass type was rated to have a moderate to high potential for bears. Abundant fruit of kinnikinnick (*Arctostaphylos uva-ursi*), which increases in sugar content over the winter, was of moderate density as an energy-providing bear food for the spring, while low-density soopolallie (*Shepherdia canadensis)* fruits appeared to be the most important food for the fall. Although further study is needed, in winter horses appear to do some feeding on pinegrass (*Calamagrostis rubescens*) within the Lodgepole pine type. These forests surround each meadow complex and winter scat piles suggest they provide important shelter as well as sheltered travel corridors. There is a large network of horse trails that link the many different meadows. Blow-downs are a constraint for habitat use and travel at some sites.

Salmon habitat values for the Brittany are very high. The Chilko River has large runs of Sockeye, Chinook and Coho, with lesser numbers in the Taseko. There is an average of 1.7 million Sockeye or 27% of the entire Fraser run. Elkin Creek in the Brittany is the only tributary of the Chilko/Taskeo Rivers that have salmon. Runs in Elkin Creek average about 600 Chinook annually.

For large carnivores, a high salmon biomass is available thereby enhancing the values of adjacent vegetation and "security" habitats. Signs of high bear use were evident but our surveys were limited. High grizzly bear use of salmon is reported at the main spawning grounds below the outlet of Chilko Lake.

Habitat use & species occurrence/abundance

Our nine remote camera stations were set out for a total of 356 camera-nights and triggered 85 photo events of mostly larger mammals. The cameras were set up to detect the passage of large, not small mammals, crossing an infrared beam. (In a few instances, small mammals were photographed when they investigated the instruments).

Of the 85 photo events, the highest number involved the coyote [*Canis latrans*] (n = 15), moose (n = 15), mule deer (n = 13), wolf (n = 11), red squirrel [*Tamiasciurus hudsonicus*] (n = 9) and feral horse (n = 8). In one instance, a series of photos recorded a daytime movement of a pack of 11 wolves. Eight horse movements were documented, both at night and during the day. We also photographed the mountain lion (*Felis concolor*), Canada lynx (*Lynx rufus*), and domestic cow (*Bos taurus*). We obtained photos of 2 different black bears. No grizzly photos were obtained, despite fresh signs; but most camera monitoring was done when grizzlies would have been away feeding on salmon.

However, tracks and several direct sightings indicate at least 4 or 5 grizzly bears use the study area. Remote camera results and tracks suggest about an equal number of black bears are present in Nuntsi Park. Habitat use studies showed that of 44 spring bear scats (grizzly and black bear), over-wintered kinnikinnick fruit and grass/sedges were of about equal importance in the bears' spring diet. Some use was noted of flowers of dandelion (*Taraxacum officinale*), ants (*Hymenoptera: Formicidae*), and mice (*microtines*). In the spring, we found signs of bears in all six vegetation habitat types. Of 13 bear scats examined from late summer, the majority (n = 10) contained fruits of soopolallie. We did not have time to examine bear use of salmon, but well-worn trails with mark trees along Elkin Creek, as well as anecdotal evidence, suggest salmon are an important dietary component in the fall. We identified 18 bear mark trees throughout the study area, with at least 10 used by grizzly bears. In one instance, bears were scratching and marking a large Douglas fir (*Pseudotsuga menziesii*) estimated to be about 800 years old.

Feral horse use was by far the most ubiquitous animal sign on the Plateau west of Elkin Creek. No recent use was noted east of Elkin Creek, likely due to a horse extirpation program there about 10 years ago. Only one lone stallion was reported on the Elkin Creek range during the course of the study, although other horse sign was noted 3 km downstream of the road. Heavy use by domestic cattle (*Bos Taurus*) occurs on the Elkin Creek wetlands and surrounding dry grasslands, appearing to cause some riparian damage. In spring, the two wild horse bands in Nuntsi Park concentrated feeding on grasses and sedges in the Wet and Dry meadow/shrubfield complexes on the Plateau. Our remote cameras recorded horses, bears, wolves, mountain lion, Canada lynx and other wildlife using the inter-connecting horse trails. One mare that appeared to have foundered was photographed; she later disappeared.

Sightings, vocalizations (howls), frequency of fresh scats and remote camera photos suggest at least one resident wolf pack in Nuntsi. In August, one camera site recorded the movement of about 11 individuals, including 6 young of the year. Home range size is estimated to be 250 – 400 km^2, larger than Nuntsi Park (200 km^2).

Although further documentation is needed, the Rainshadow Horse Ecosystem of the Brittany Triangle appears to support an abundant prey biomass of large and small species. For top predators such as the wolf, mountain lion, grizzly bear and black bear, feral horses likely contribute a valuable food resource that supplements their diet of native species. Foals, injured, foundered and winter-weakened individuals would be the most susceptible to predation.

Feral or wild horses

In Nuntsi Park, we consistently observed two wild horse bands, which totaled 25 to 27 animals. We crudely estimated the total for potential horse numbers for the Brittany Triangle – Rainshadow Wild Horse Ecosystem at 14 bands comprising a minimum of 140 to 200 animals, but this could be a conservative estimate. We observed social structure behaviour as complex as that of grey wolf packs, and similar to that reported elsewhere for feral horses. A single mature stallion would accompany a group of mares and various-aged offspring numbering 10 to 12 individuals. Remote camera movement data and repeated sighting of the same bands at the same locations suggested each band is territorial. The remote camera data also demonstrated that the horses made periodic night and daytime cross-country movements as single individuals or in small groups. The horses moved along established trails through pine forests, between their grazing meadows. Night was obviously not a constraint to travel.

These horse bands also exhibited an extremely wary behavioural response to humans and avoided human habitation and the more actively used roads. They used the pine forests adjacent to small and large meadows as escape habitat. Limited observations suggest no excess forage competition with other ungulates and bears' use of green vegetation, and only minimal evidence of range over-grazing. However, more intensive range use research is needed.

The horses we observed exhibit some of the inherited physical characteristics of original Colonial Spanish Horses, which were felt to have a higher heritage/conservation value than breeds introduced later. These characteristics include numerous colour types and very long manes and tails. Further study should be conducted to see if the Brittany horses exhibit another apparently inherited behaviour, forming guard circles against wolves. The local Xeni Gwet'in First Nation is a horse culture; they still capture horse stock from among the wild horses of the Brittany Triangle. A priority of our background research was to interview Xeni Gwet'in elders on the origins of their horses. However, this had to be deferred because of another Xeni Gwet'in interview project going on at the time. We believe Simon Fraser's recorded observations in 1808 of Chilcotin First Nations having horses is proof positive that horses were in the general area prior to the arrival of the first Europeans. These horses could only be derivatives of the original North American Spanish stock.

A remote possibility even exists that some of the Brittany Triangle wild horses may carry the bloodlines of the earliest introduced horses in America -- the bloodlines of the Conquistador's horse. Genetic testing is recommended for the DNA marker (blood variant *Q-ac*) distinctive to the Colonial Spanish Horse. Only a few of the surviving wild horse groups in the U.S. have preserved the pure bloodlines of the first horses introduced to the "new world" more than 500 years ago. Should the Brittany Triangle horses prove to be derived from these early horses, even if their bloodlines are somewhat diluted by interbreeding with European settlers' stock, their biological and natural heritage value is considerable.

Conservation values

Based on our preliminary study, we conclude that the Rainshadow Wild Horse Ecosystem encompassed by the Brittany Triangle forms a large, core, intact wilderness with high security and feeding values for grizzly bears, black bears, mountain lions, wolves and other carnivores as well as for four native ungulate species and one non-native, the wild horse. Two large salmon-bearing rivers form natural boundaries. An average of 1.7 million Chilko sockeye salmon spawn in the ecosystem providing a critical food resource for First Nations, grizzly bears, wolves and others. A small wild salmon run in Elkin Creek enhances a critical food resource. Elkin is the only tributary of the Chilco/Taseko rivers to support salmon.

The Brittany Triangle forms a natural corridor and security habitat for bears and wolves from the surrounding region to access this rich salmon resource. The area provides an important travel corridor between the river-salmon areas and the mountain terrain to the south and west, including Ts'il?os Provincial Park.

Our study shows that, as a non-native grazing ungulate, the feral horse has a high heritage value and appears to occupy its' own ecological niche. Our heritage rating was based on the protection afforded the similar feral horse in the United States. Both the feral "mustang", a mixture of Spanish Colonial stock and northern European breeds, and at least four herds with Colonial Spanish Horse gene typing, are protected and managed under Federal Law in the U.S. We speculate that the Brittany horse type is derived from the same ancestors.

Currently, wild horses in Canada and British Columbia are much reduced from historic times and have largely been extirpated in British Columbia. Government-sanctioned slaughter programs, including a bounty paid per pair of horse ears produced, encouraged European ranchers and settlers to kill wild horses. There is only one feral horse refuge in Canada, on Sable Island in Novia Scotia, while there are at least six in the United States. Federal Law protected wild horses in the U.S. in 1972 but Canada lags far behind in this regard. In British Columbia they have no legal protection and are still periodically trapped and taken to slaughterhouses.

Our study suggests that British Columbia's extirpative management policies and negative management attitudes toward feral horses has not kept pace with contemporary research, contemporary heritage/conservation initiatives elsewhere in North America, and contemporary public attitudes about wild horse preservation. These negative B.C. policies persevere despite research that clearly demonstrates that wild horses can generally co-exist with cattle and wild ungulates, depending on the circumstances, and with careful population control.

The horses in the Rainshadow Wild Horse Ecosystem have not only survived an aggressive 40-year B.C. government bounty and shoot-to-kill campaign, but appear to be well integrated into the ecosystem as a dominant and keystone species. The horses provide an alternate prey species for large predators without apparently competing directly with moose for winter plant foods. These horses were also likely resident in the area long before the first moose migrated into the region in the 1920's. Although further study is required, we could find no evidence of biological harm or interference, with the exception of a few small over-grazed sites.

We believe the Rainshadow horses should be accepted as a resident, rather than an alien, species within Nuntsi Provincial Park and managed accordingly. However, further study is needed of possible competition with domestic cattle on grazing allotments, and with California bighorn sheep at higher elevations.

From a conservation perspective, the fact that these wild horses live in an ecosystem that has a complete guild of top predators may not be unique in western Canada. But it is certainly unique in global terms. In the United States, where much larger wild horse populations are protected by law, most or all of the top predators have been extirpated or are extinct. In Europe, the original Colonial Spanish Horse is nearly extinct. Fully preserving the Rainshadow Wild Horse Ecosystem as a refuge offers a chance to protect wild horses in an intact, fully functioning ecosystem with a full complement of predator and prey species. From a conservation biology perspective, expanding the existing protected areas to create a large core, wilderness-protected area would make a valuable contribution towards protecting a globally scare resource.

Threats

Our review for this area, and knowledge from previous habitat mapping work, concludes that the extensive road building and clearcut logging proposed to commence in the Brittany Triangle area in the near future represents a serious threat to both wilderness integrity and long-term species survival. Only limited ecological protection of the Brittany will be provided by Nuntsi and Tsy?los Provincial Parks. Logging would mean the loss of a major conservation opportunity for a viable foothills extension to two important B.C. protected areas. As well, the opportunity for formal protection of B.C.'s first wild horse refuge would be foregone.

A 40 km main haul road is planned to bisect most of the Brittany Plateau and this, combined with associated side-roads and extensive clearcuts of pine forests, would be the first thrust of a long period of mostly negative, cumulative impacts on the ecosystem. These cumulative impacts, which include high road densities, habitat alterations and escape-cover alterations and associated human disturbances such as increased hunting and poaching, have been well documented for sensitive "indicator" species such as grizzly bears and wolves. We suspect the reclusive feral horses would be negatively impacted as well although there is some evidence they can survive some logging activities over the short-term. We believe habituated animals of these and other species would generally have shortened survival. Increased conflicts between moose hunters and grizzly bears would contribute to human-induced grizzly mortalities. Studies conducted in various locations in North America show that more than 80% of human-induced grizzly bear mortalities occur within a half-kilometre of roads and human developments.

The proposed road building and logging will create a large "fracture zone" between two recently created provincial parks (Nuntsi and Tsy?los), eventually breaking down connectivity including bears' access to salmon. It is doubtful that Nuntsi and Tsy?los Provincial Parks would meet minimum conservation biology standards for the long-term protection of indicator species such as the grizzly bear and grey wolf without protection of the large Brittany core wilderness which lies between them. Previous land-use planning policies for protected areas (for example, the 12% guideline) and logging zones were mainly determined by political factors, not sound biological ones. The B.C. provincial government's proposed 1995 wildlife protection guidelines have not been forth-coming, guidelines which were intended to adequately protect, through the Forest Practices Code, "Identified Wildlife" (at risk) such as the grizzly bear. Given the current political regime, no improved wildlife protection guidelines are expected.

While Nuntsi Provincial Park is an important component for ecosystem protection, it comprises only approximately 13% of the total Brittany area. It protects only a small portion of the salmon-bearing rivers, supports only about two horse bands, and does not encompass the home range of even one grizzly bear or one wolf pack.

Recommendations

Conservation:

Despite the value of the wild horse as a component of both natural heritage and conservation, the species has been afforded no protection in British Columbia. In the U.S., Federal law, with some humane control measures, protects them. The U.S. has at least six wild horse refuges, including a number in the mid-west. In western Canada, feral horse populations have largely been extirpated and there are no horse refuges. The Rainshadow Wild Horse Ecosystem already serves as a wild horse refuge. There is reason to postulate that feral horses may have been integrated into this natural, still-intact ecosystem over several centuries. The horses' survival in an intact predator-prey system, with all of the top North American predators featured, adds to this area's unique conservation value.

We recommend that the Rainshadow Wild Horse Ecosystem (Brittany Triangle area) be recognized as wild horse refuge and be protected accordingly as western Canada's first such sanctuary. It is a logical foothills extension of Tsy?los and Nuntsi Provincial Parks. B.C. Parks' policy should be adapted to include the wild horses, which appear to have been present long before the parks were established.

The viability of this, including a possible larger buffer of wild/horse protection in the Nemaiah Aboriginal Wilderness Preserve, should be the subject of a Conservation Area Design (CAD) review.

Further research on a number of "management issues" is recommended, whether or not the horse bands receive the protection we suggest is warranted. For example, while our field studies showed very limited over-grazing and competition problems this should be studied in greater detail. The following should be included:

1. More detailed habitat, population, and range impact surveys, including areas where feral horse use may overlap with the range of domestic cattle and California bighorn sheep (*Ovis canadensis californa*).
2. Research into the current legal and policy status of feral horses in the area under Xeni Gwet'in First Nation's policy, and provincial and national government law and policy, including the *B.C. Park Act*. In the U.S., an exception to National Park Service policy was made for Assateague Island National Seashore in order to protect wild horses. The exception allowed the horses as "a desirable feral species" that the public valued for cultural and historical reasons. Congressional interest in the animals when the park was established was also an important factor.
3. Further review of policies of conservation of feral horses in other protected areas in North America.
4. Further review of other potential management issues including testing for Equine Infectious Anemia (EIA), commonly called "swamp fever".
5. Review of inception of a possible local rancher compensation fund for proven losses to livestock from grizzly bears, black bears and wolves.
6. A Conservation Area Design (CAD) should be done for the region, assessing the overall value of protected areas and corresponding linkage zones.

Biological:

More surveys are required including:

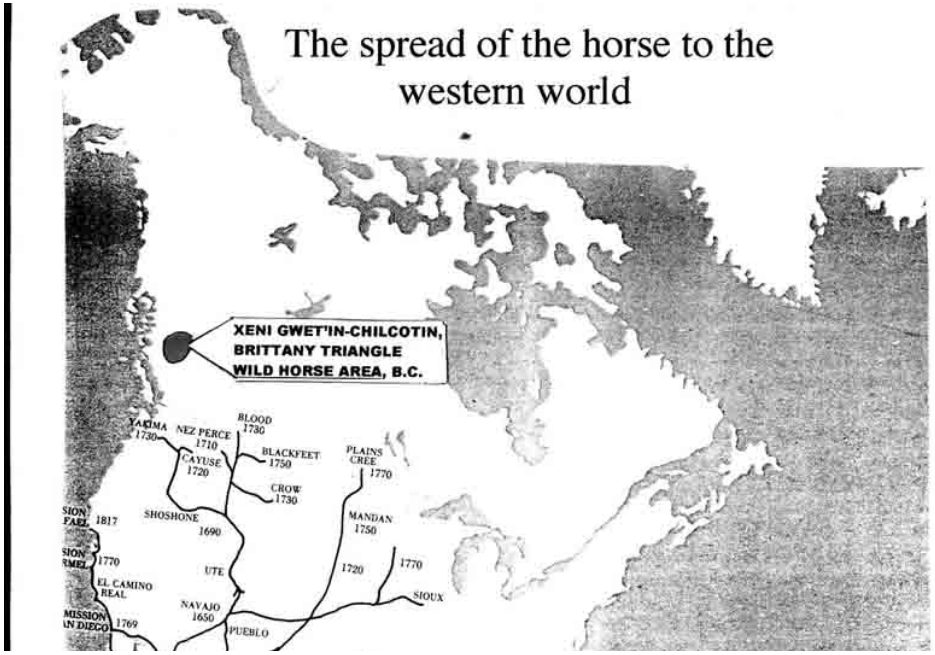
1. DNA testing should be done to determine possible linkages, if any, between the Rainshadow wild horse breed and the Colonial Spanish Horse.
2. More mapping and inventory of grizzly bears, wild horses, wolves and other wildlife. This should documentation of the distribution and numbers of wild horses.
3. A wild horse diet and habitat study using field plots and lab analysis of droppings. This should also include a preliminary study of wolf scats to determine whether horses are part of their diet. As well, the networks of horse trails should be mapped to measure connectivity of habitats.
4. A more detailed impact assessment should be made of the logging proposed for the area. This should include short-term and long-term negative and positive influences.

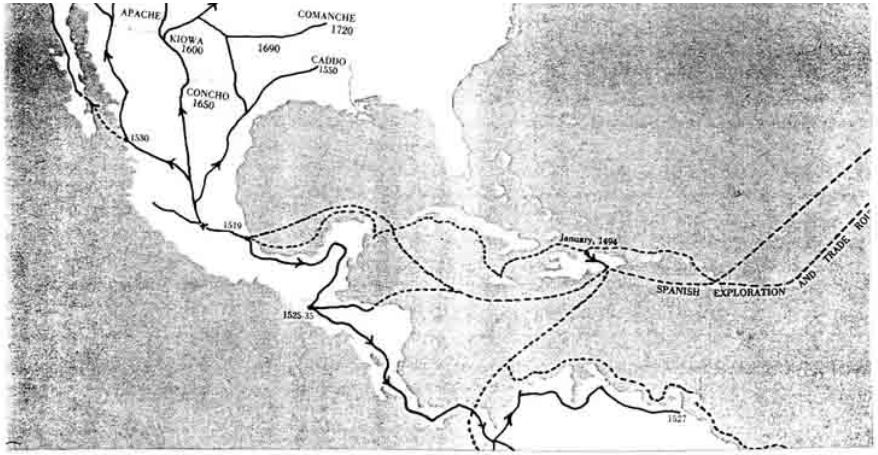
First Nations traditional knowledge:

1. A further historic review should be done to assist in determining the origins of Brittany horses. This should include interviews of Xeni Gwet'in elders. Other wildlife knowledge such as on grizzly bears should also be studied and documented.

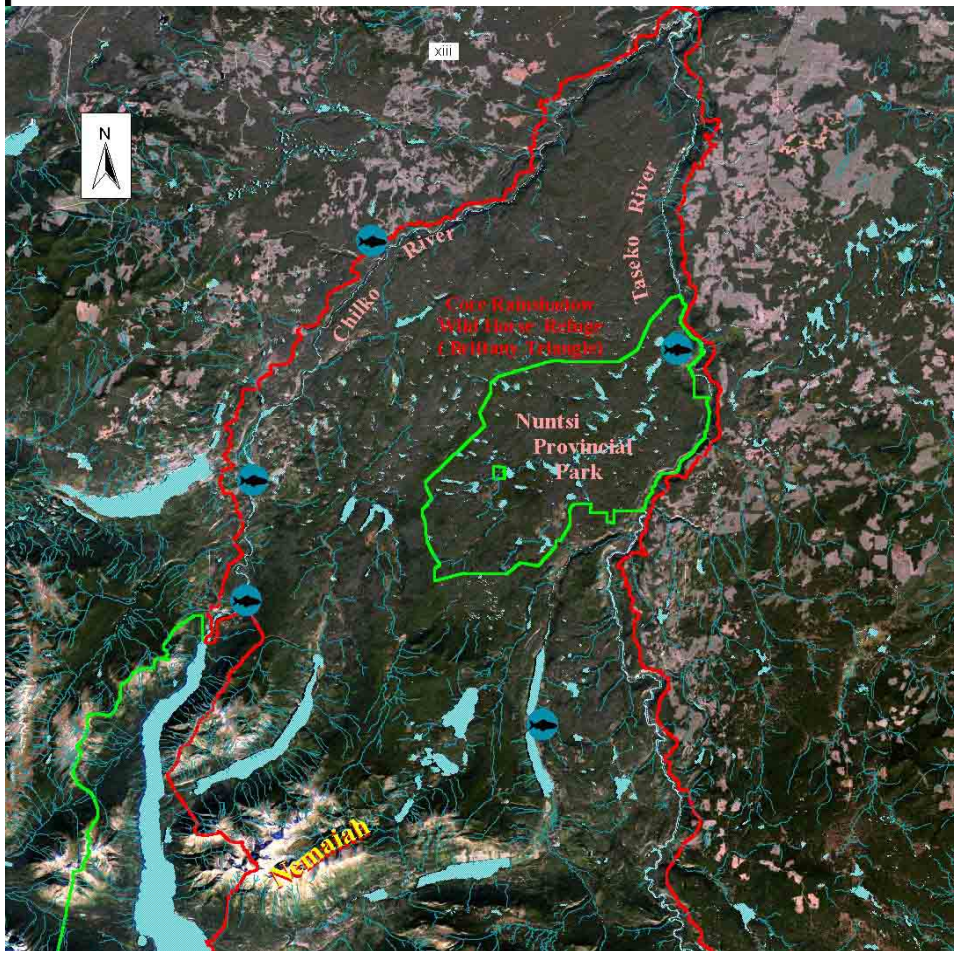
Key Words: Brittany Triangle, Chilcotin, Taseko, Chilko, British Columbia, grizzly bear, *Ursus arctos*, wild horse, feral horse, *Equus caballus*, salmon, Xeni Gwet'in First Nation, horse refuge.

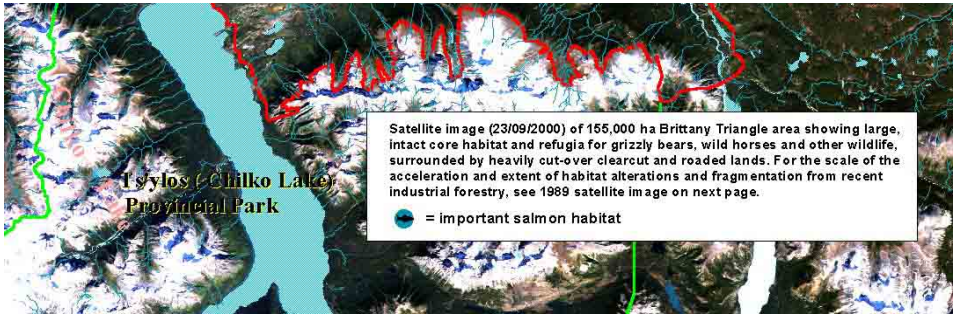
Tl'esqox students on wildlife training course on bighorn sheep range near confluence of Fraser and Chilcotin Rivers. It was near where the two rivers meet that explorer Simon Fraser encountered ancestors of these students in 1808. A number we on horseback indicating that First Peoples had horses in the Chilcotin prior to European contact. Fraser also recorded several local words for horses. Today, the Rainshadow Wild Horse Refuge area is about 100 km to the west, in the Coast Mountains in the "Nemaiah Aboriginal Wilderness Preserve" of the Xeni Gwe'tin First Nations. **(Photo by Wayne McCrory).**

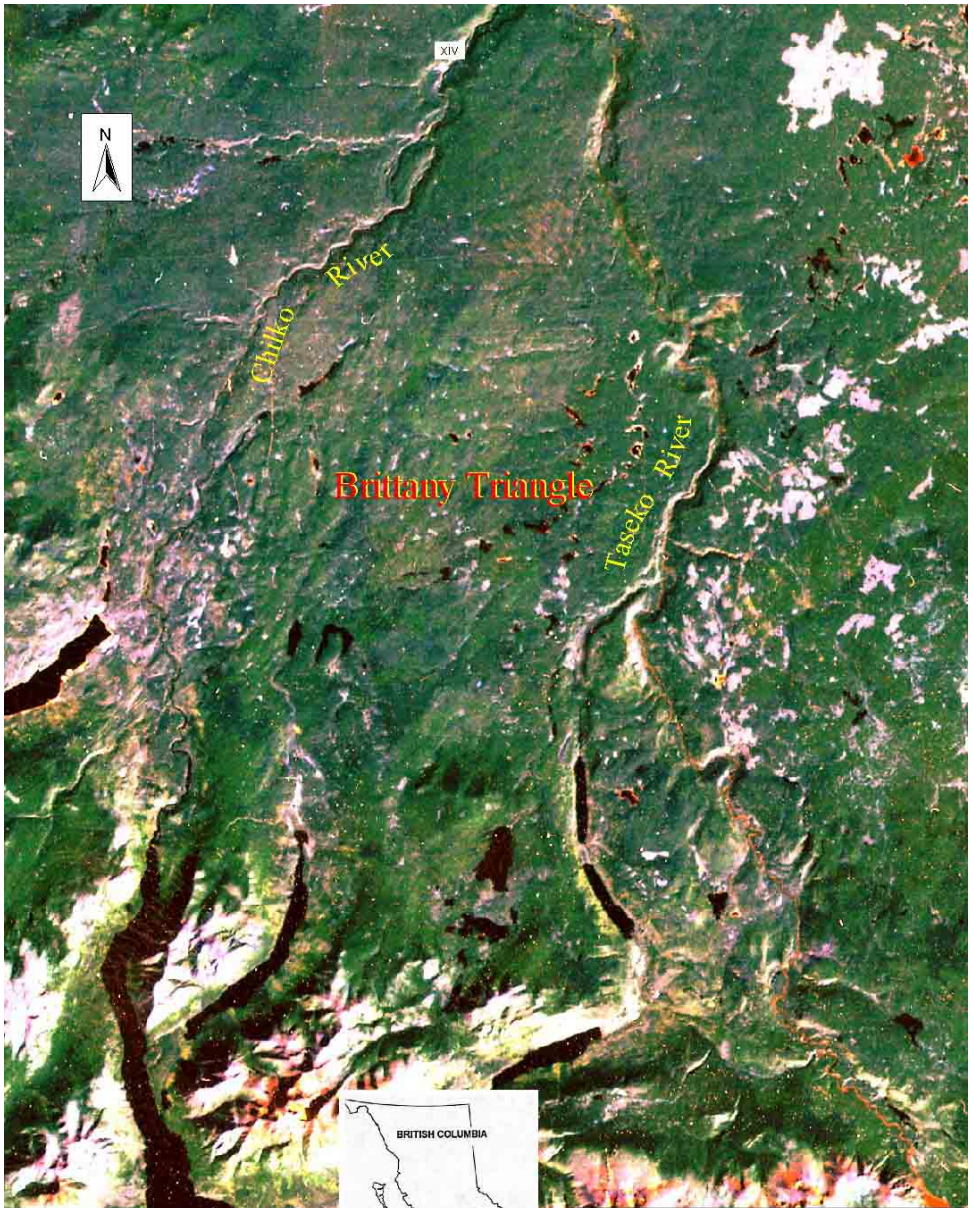




Map 1. Areas of northwest U.S. showing approximate dates of first arrival of Colonial Spanish Horse stock amongst native tribes. Chilcotin-Brittany Triangle wild horse study area in the interior of British Columbia is shown at top left. There is evidence that Xeni Gwet'in and other First Nations in the Chilcotin area had horses prior to the early 1800's. [Map from **THE HORSE IN THE WEST**. Bradley Smith. 1969. Leon Amiel. New York].




Tsylos (Chilko Lake) Provincial Park
Satellite image (23/09/2000) of 155,000 ha Brittany Triangle area showing large, intact core habitat and refugia for grizzly bears, wild horses and other wildlife, surrounded by heavily cut-over clearcut and roaded lands. For the scale of the acceleration and extent of habitat alterations and fragmentation from recent industrial forestry, see 1989 satellite image on next page.
= important salmon habitat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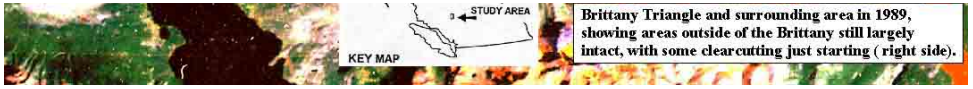
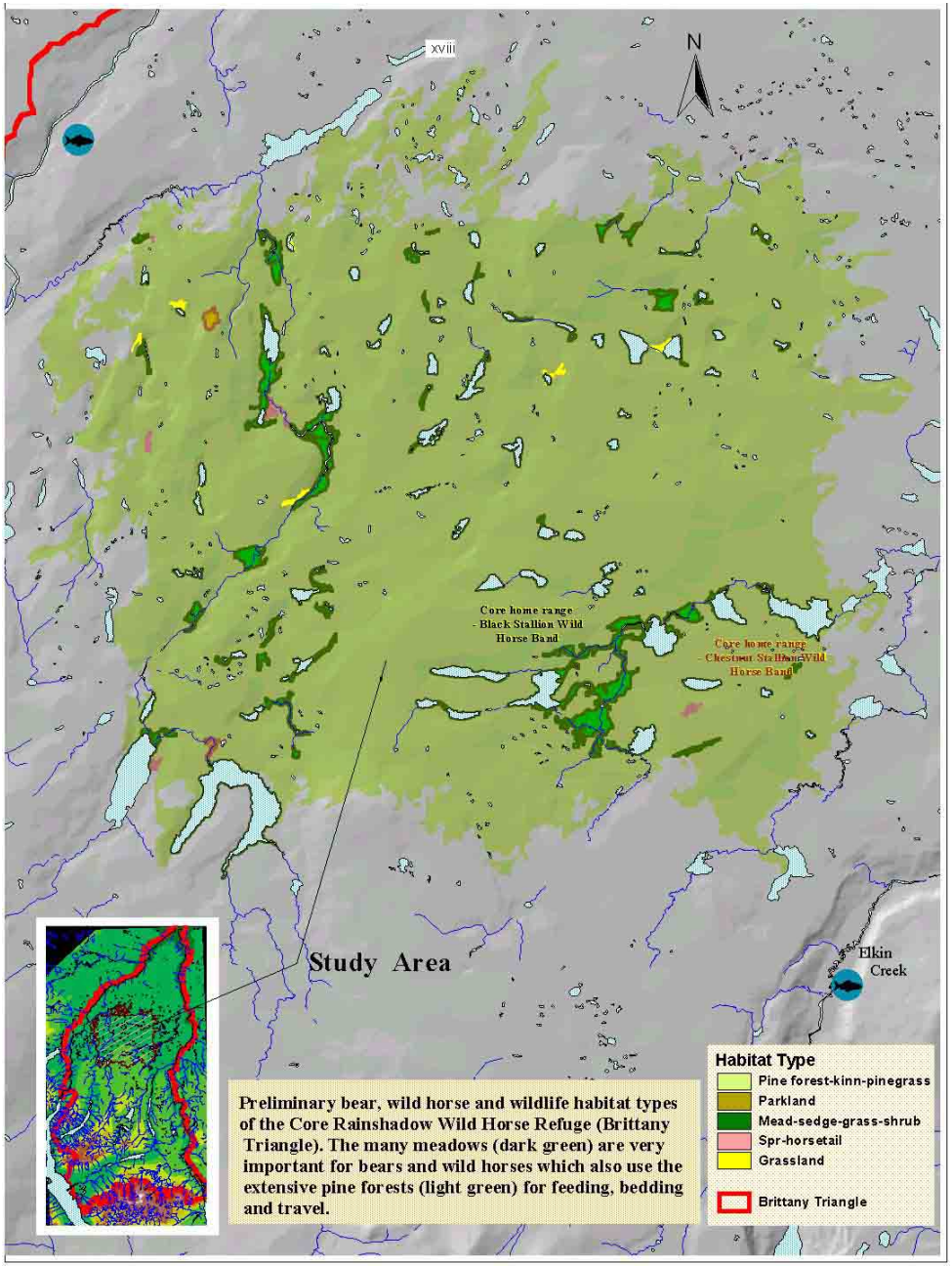


Brittany Triangle and surrounding area in 1989, showing areas outside of the Brittany still largely intact, with some clearcutting just starting (right side).

The southern reaches of the proposed Rainshadow Wild Horse Refuge (Brittany Triangle) are more mountainous and border on **Ts'il?os (Chilko Lake)** Provincial Park (background). Much of the forested area of the Brittany Triangle is lodgepole pine with a diverse fire history, such as this wildfire near Nuntsi Provincial Park in September, 2001. (Photo on left by Garth Woodworth, on right by Wayne McCrory).

Both grizzly and black bears are common in the Brittany Triangle and, although largely vegetarian and salmon-eaters, may prey on weakened or young wild horses. There is a dark, adult grizzly bear feeding on spring grass along Elkin Lake (upper, left) and the large brown-phase black bear (lower, right) was using a horse trail. Green vegetation in meadows and over-wintered kinnikinnick berries in pine forests appeared to be the main spring-early summer foods while soopolallie fruits were one of the late summer-fall foods. Many bears likely move to the main salmon areas in the Brittany Triangle to fatten up before winter hibernation. Bear mark trees are common in the area. (Photos by Wayne McCrory).

Remote camera surveys and field sign showed large predators were common in the Brittany Triangle. This pack of wolves included pups and was traveling an old/road and horse trail. The adult wolf is sniffing at the ground near a large pine tree used by bears for rubbing and marking. Another remote camera recorded a large mountain lion hunting along a wild horse trail at night. Prey species for these top predators in the ecosystem would include small animals, mule deer, moose and even weakened or young wild horses. Horses and moose winter in the area, while mule deer migrate to areas with less snow. (Remote camera photos by Wayne McCrory and FONV).


XVIII
N
Core home range
- Black Stallion Wild
Horse Band
Core home range
- Chestnut Stallion Wild
Horse Band
Study Area
Elkin
Creek
Habitat Type
Pine forest-kinn-pinegrass
Parkland
Mead-sedge-grass-shrub
Spr-horsetail
Grassland
Brittany Triangle
Preliminary bear, wild horse and wildlife habitat types of the Core Rainshadow Wild Horse Refuge (Brittany Triangle). The many meadows (dark green) are very important for bears and wild horses which also use the extensive pine forests (light green) for feeding, bedding and travel.

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