

# Presettlement Rangeland Management on the Northern Plains

Theodore Binnema

For many years most people assumed that rangeland management practices arrived on the northern plains with Euroamerican settlers. According to this picture, the previous inhabitants of the land, the Native Americans, lived passively on the land, accepting gratefully what nature provided, but taking few steps to alter their environment. (Pyne, 1982: 81) It is now clear that this view was misinformed (Pyne 1982, Lewis 1977, Willaims and Hunn, 1982). It is no exaggeration to say the Great Plains in 1492 had already been subject to active and sophisticated human rangeland management strategies for centuries (Turner and Butzer, 1992). Indeed, it would be impossible to reconstruct accurately or to understand the environment of the northern plains in the presettlement era without assuming that humans formed an integral part of its ecosystems.

For the Native inhabitants of the northern plains, rangeland management formed part of a comprehensive strategy to promote the security of individual bands and groups of bands. The primary tool for management purposes was fire and the primary goal, but not the only goal, was the maintenance of bison habitat.

**Natives appear to have used fire deliberately to keep areas free of tree cover.**

The documentary evidence regarding Native use of fire on the Plains and in the neighbouring region of North America allows us to understand some of their management strategies. Natives appear to have used fire deliberately to keep areas free of tree cover. This practice would have been most important in preventing the afforestation of the very productive grasslands along the margins of the Great Plains. Rangeland scientists have shown that forest cover in many uncultivated areas of North America has increased since fire was suppressed. They have also noticed that when trees invade the margins of the Great Plains the first areas they invade are the moist regions that support the most luxuriant grass growth (Bailey and Wroe 1974). By burning these grasslands in the past Natives would have been increasing significantly the carrying capacity of grasslands for buffalo. Presettlement Euroamerican expeditions to the northern plains frequently noted that fire, both natural and anthropogenic kept large areas more open than they might otherwise have been, and

settlers and scientists often noted the invasion of forests in previously open regions following the suppression of fires in the settlement era (Arthur 1975).

Natives could also use fire for more short term goals. With the arrival of the cold weather of winter both humans and buffalo would typically be concentrated in the sheltered valleys and wooded margins of the plains. In anticipation of cooler weather, and to avoid being trapped on the open plains should an autumn blizzard arrive, Native bands normally reached their wintering grounds before the bison did. If warm weather lingered in the fall, however, the herds would remain widely dispersed on the plains. For Native hunters this meant only trouble, for winter was usually the time for communal bison drives into pounds. These bison drives, however, required a large group of people. If the herds remained dispersed on the plains, it was difficult to find enough herds to maintain the population. Furthermore, remaining on the prairie in late autumn carried with it the risk of being caught on the open plains without dependable shelter and fuel upon the sudden onset of winter. Fortunately, these warm, dry autumns that kept the bison on their summer ranges would also render the grasses of the plains tinder dry. The grasses of the summer range could be burned to force buffalo to move away toward their winter ranges.

Setting fire to the prairie in fall or spring also had the effect of allowing more bison to survive that critical time of early spring when they could face starvation. By late winter forage quality and quantity would have reached its nadir and bison would be lean (Spry 1968: 21). In unusually severe winters or late springs hunters would face herds of bison so lean that most of the meat would have so little fat that it could not support humans (Speth 1983). Mortality among bison would reach its peak at this time. While there remains some doubt as to whether the burning of grasses improves yield in the long term, Native hunters could easily perceive, as Captain John Palliser did in 1857, that "places where fire had consumed the grass in the previous autumn, after that season's growth had ceased, now became green in the course of a few days, as the snow always disappears from these spots first" (Spry 1968: 391). Lewis and Clark noted that the Hidatsa (of present-day North Dakota) burned the prairie near their villages in early March "for an early crop of grass, as an inducement for the buffalow [sic] to feed on" (Arthur 1975: 25). By inducing the grass to green even a few days earlier, the Natives were providing nutritious forage for bison herds that were losing members daily to starvation and predators.



Two Blackfoot Indians demonstrate for the photographer the ritual of starting prairie fire in this early 20th-century photograph (Provincial Archives of Alberta, P138).

Fire could also be used in all seasons to influence the movements of bison to serve the advantage of a par-

**... it was routine for the Cree to set fire to the prairie surrounding Hudson's Bay Company. . .**

ticular groups of Natives. For example, in late 1844 Alexander Christie of the Hudson's Bay Company mentioned that after a number of skirmishes between groups of Métis and Dakota, the Dakota had apparently retaliated by setting some prairie fires that crippled the Métis fall hunt (HBCA 1844). Undoubtedly, it was common for Natives to burn the grasslands in certain areas to prevent the bison herds from moving into enemy lands. During the fur trade era it was routine for the Cree to set fire to the prairie surrounding Hudson's Bay Company fur trade posts in the fall to keep the bison away during the winter. This was not meant to force the traders out of the region but to force them to depend on Cree

hunters for their provisions during the winter.

Prairie fires are legend for their intensity and unpredictability, thus use of fire for any purpose required skill and precision. The condition of the grasses, winds and humidity would have to be considered carefully to reduce the risk that any fire set would have unfavourable results. Not surprisingly then, the deliberate setting of prairie fires appears to have been accompanied by some ritual. In the accompanying photograph, taken at the beginning of this century, two Blackfoot demonstrated for the photographer the ritual of starting a prairie fire. Evidently, deliberate and careful efforts to manage the grasslands of the northern plains have a long history on the northern plains. Ironically, the use of fire to manage grasslands fell out of favour for several decades after Euroamerican settlement on the northern plains began, only to be rediscovered as a valuable ecological tool in this century (Pyne 1982). Indeed, proponents of the use of controlled burning of grasslands still face some resistance.

### Literature Cited

- Arthur, George W. 1975. An Introduction to the Ecology of Early Historic Communal Bison Hunting Among the Northern Plains Indians. Ottawa: Nat. Mus. of Man Mercury Series Paper No. 37.
- Bailey, Arthur W. and Robert A. Wroe. 1974. Aspen Invasion in a Portion of the Alberta Parklands. J. of Range Management 27:263-6.
- HBCA (Hudson's Bay Company Archives) 1844. D. 5/12 Alexander Christie to George Simpson, 27 December.
- Lewis, Henry T. 1977. Maskuta: The Ecology of Indian Fires in Northern Alberta. Western Cdn. J. of Anthropol. 7:15-52.
- Pyne, Stephen J. 1982. Fire in America. Princeton: Princeton Univ. Press.
- Speth, John D. 1983. Energy Source, Protein Metabolism, and Hunter-Gatherer Subsistence Strategies. J. of Anthropological Arch. 2:1-31.
- Spry, Irene M., ed. 1968. The Papers of the Palliser Expedition, 1857-1860. Toronto: Champlain Society.
- Williams, Nancy M. and Eugene S. Hunn, eds. 1982. Resource Managers: North American and Australian Hunter-Gatherers. Boulder: Westview Press.

Theodore Binnema is a Ph.D. student in history at the University of Alberta in Edmonton, Alberta. Environmental and ecological matters will form a substantial part of his dissertation on the history of the north-western plains in the early fur trade era.