The Traditions of our Ancestors Influence Rangeland Management

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Range management is a relatively new discipline that originated in North America out of the need to more effectively understand and manage rangeland resources. One of the goals of the new discipline was to counter widespread overgrazing. The exploitation, overuse, or degradation of rangeland resources was commonplace during the frontier colonization period in Canada, the United States, and Mexico. Was this caused by extreme difficulties experienced by pioneers surviving in the wilderness? By greed? Or was this exploitation due to the inadequate cultural background of new settlers? Were the rangeland management practices exercised by these foreign cultures not in harmony with North American ecosystems?

Is the management of rangeland resources today influenced by what happened in the distant and recent past? In other words, did the early settlers to North America bring their cultural, social, technical skills, values, and biases with them? Alternately, did they arrive with empty heads and blot up how to make a living from the land and how to conserve the rangelands through experiences learned in North America?

We propose to explore the influence of European man on the prairie rangelands of western Canada. The concentration will be on Britain because there is historical documentation in English and the majority of early settlers to the Canadian Northwest Territories (now Alberta and Saskatchewan) were of British origin (Macoun 1882). We assume some of the principles will be relevant to other North American rangeland and to other continents affected by European colonial empires. Our premise is that new settlers brought their own values and biases with them to the New World. In other words, no one arrived in North America with a completely blank slate.

Historical Britain

Early in our literature search it became apparent that there was little information available about British rangelands. Without ready access to the history of grasslands, meadows, and heathlands (moors), we turned to a review of the attitudes and effects of man on Britain's most common native vegetation, the woodlands. Rackham (1990) differentiated the wildwoods, the natural woodlands, from the planted, managed woodlands that came later. There is now available a rich literature pertaining to the attitudes that evolved over the centuries regarding British woodlands.

The earliest recorded influence of Mesolithic man on vegetation in Britain starts about 6,000 years ago. Broadcast burning was used to create patches of heathlands that would attract game to make hunting easier (Gimmingham 1972, Rackham 1990). Once formed, the heath was maintained by periodic burning and grazing. Later, the rapid immigration of larger populations of Neolithic peoples bringing with them cereal crops, weeds, domestic animals, and polished stone axes brought an agricultural technology requiring cleared farmland and an increased dependence on cultivated agriculture.

The Iron Age, about 800 B.C. to 40 A.D., expanded the clearing of woodland to provide fuel for the ironworks and cleared land for agriculture. With the appearance of iron tools, the land was worked more easily; this in turn enabled a significant rise in the human population and the beginning of cultivated agriculture. About half of the native British wildwoods were cleared by 500 B.C. (Rackham 1990).

The Romans invaded Britain in 43 AD and found a land with a well-developed, cultivated agriculture. As a part of the Roman empire, the British colony was expected to produce a certain amount of goods for export to the mother country. Considerable clearing of British wildwoods occurred during the period of Roman occupation (Rackham 1990) in order to meet the food requirements of Rome and its empire. Reed (1954) explained how the Roman invasion caused a dramatic shift in attitude towards land management, native vegetation, culture, and religion in ancient France (Gaul). We assume the Romans forced similar changes in attitude upon the peoples of ancient Britain.

The Gauls, from ca. 2000 B.C. to ca. 200 A.D., were hunters and agriculturists who needed a balance of cultivated and uncultivated land (Reed 1954). They interacted more closely with their environment than the Romans did in Italy. Certain aspects of their surroundings, such as trees, played both economic and spiritual roles. The oak trees were sacred, and only the priests, the Druids, could enter certain sacred groves. For the Romans from sunny, cultivated Italy, the expansive, dark forests of Gaul inspired both a practical and a psychological terror. Militarily, it was a nuisance because Gaelic tribesmen used hit and run tactics on the ill-prepared Roman legions. There were also the psychological distress and superstitions that the mystery and uncanny darkness of the forest

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produced in southerners accustomed to the sunny, open Italian landscape. Latin civilizations disliked nature in the raw. The Romans considered the forests to be the antithesis of civilization—the chaos that existed before cities or croplands had developed. By definition, the men who lived in the forests were 'savages'—the word itself coming from *sylva*, the Latin term for forest. They equated the forests with the 'savages' who lived in them. The Romans subjugated both the forests and the tribespeople by cutting down the forests, cultivating the land, and either killing or enslaving the people.

During the Middle Ages, religion played its part in influencing how early man treated native vegetation. Many of the tribes worshipped spirits and gods that dwelt in the woods and wildlands. Early christian missionaries, who came from the sunny, cultivated Mediterranean region, looked with disfavour on the tribal religions and anything associated with them. By the 6th century, the Roman Catholic church was active in France clearing land and converting it into arable cropland (Reed 1954). Apparently the assumption was that if the wildlands were removed, so were the spirits and gods of the tribesmen. This kind of superstition causes great difficulty for us to comprehend. However, it influenced how our ancestors responded towards native vegetation and in so doing it has affected our policy makers today.

The Anglo-Saxons (ca. 500 to 1066 A.D.) continued what the Romans had started. There was a steady clearing of native woodland because an expanding population required more cultivated land for food production. Only 15% of England was woodland by 1086 (Rackham 1980). The Anglo-Saxons used a combination of felling and grazing; sheep were especially effective at controlling the regrowth of young saplings.

The Normans invaded England in 1066 A.D. Subsequently, the rise in human population demanded that more land be cleared for food production. The conquerors reduced the woodland to 5% of the area, placing all available land under cultivation (Rackham 1980). In 1086 A.D. there was more plowed land in England than at the turn of the 20th century (Curtler 1909).

The Black Plague that struck Britain in 1349 decimated 1/3 to 1/2 of the human population. It influenced land use. Labour-intensive cultivated agriculture was frequently no longer feasible. Manor lords and farmers grew forages and turned to raising livestock. Subsequently, in some places, the rental value of meadow land became 10 times more valuable than cultivated cropland because hay was the main winter food for livestock (Curtler 1909).

Early British land management was highly exploitive. It was a matter of survival amongst competing groups of humans. The natural resources were treated as if they were limitless. Little seemed to be done by either the nobility or the commoners to ensure their perpetuation. The wildwoods, the most common natural vegetation, were cleared systematically over 2000 years (800 B.C. to 1200 A.D.) to accommodate the food requirements of an ever-expanding human and livestock population. It took the Black Plague to kill enough of the human population to force a revision in agricultural practices (Rackham 1990). This change to growing perennial forages for over a century resulted in a substantial improvement in soil quality and fertility as well as a reduction in erosion.

During the Middle Ages, there is little reference to fire being accepted practice in Britain to manipulate vegetation for grazing by either livestock or wild game. Some burning was done by commoners since the King's agents frequently frowned upon it (Bolton 1965, Rackham 1980). For example, in Robin Hood's Sherwood Forest during the 13th century, the authorities were ordered to inquire into who had caused "—waste and destruction of the heather or fern in the Forest—" by burning them to obtain better pasture for their livestock, because the forest was the refuge for the King's deer. In North America, the paranoia towards fire found amongst many foresters and other resource managers seemed to parallel the attitudes displayed by the King's agents during the days of Robin Hood. In the Middle Ages it concerned the maintenance of high populations of deer for the King's sport whereas today it is aimed at the maintenance of artificially long fire-free periods in order to promote the high output of saw logs, etc., often at the expense of other forest and rangeland resources.

There was only a haphazard imposition of fire on heathlands of northern Britain from the Bronze Age until about 1800 (Gimmingham 1972). At that time demand for wool at British woolen mills had risen sharply. Sheep farming became so lucrative that the wealthy landlords evicted the small tenant farmers in Scotland and Ireland and implemented a management scheme of heather burning and sheep grazing. This eviction of tenant farmers led to large scale immigration to the colonies. In more recent times in Britain, the heathland has suffered badly from the lack of grazing, lack of rabbits, and especially from the lack of fire (Rackman 1990).

Resource management practices affected the ability of forests to reproduce. In ancient Britain (Rackham 1990), France (Reed 1954), and Norway (Brown 1884), livestock access to the forests was relatively unrestricted. As the human population increased, so did the livestock. As livestock increased, so did the need for grazing. Unfortunately, much had been converted to cropland to produce food for people. Overbrowsing of the remaining forest became so common that normal generation did not happen.

British Forest Law and Common Law

The two kinds of land management law in England were Common Law and Forest Law. The Common Law refers to the rights of the ordinary people, the commoners. The Forest Law protected the interests of the King in certain designated "forests". The concept of Forest Law was developed by Anglo-Saxon kings and was more rigidly defined by Norman kings (Putman 1986). The Normans introduced the non-English doctrine that all land ultimately belonged to the King. He had the right to subject

any land to Forest Law, whether of his ownership or owned by others.

The word *Forest* was used in Europe to mean a region subjected by the king to special laws concerned with preserving game (Rackham 1990). In medieval England, *Forest* became a legal term referring to a tract of land within which Forest Law operated and people could be prosecuted before Forest courts. A legal Forest need not be wooded. It was simply an area under Forest Law as opposed to Common Law. The legal Forest could include anything: woodland, grassland, heath, meadow, farmland, and towns. For example, the New Forest established by William the Conqueror about 900 years ago was mostly heathlands with a mosaic of woodland, grassland, and wetlands (Tubbs 1986). Sherwood Forest, the home of the legendary Robin Hood, was mainly heathland rather than woodland (Rackman 1980).

The imposition of Forest Law brought severe restrictions on land use. Lands under Forest Law could not be fenced or cultivated; the King reserved all rights to take game. The landowner retained the rights of free-grazing of livestock (Putman 1986). Subsequent reforms progressively sweetened the old Forest Laws. The Forest Laws disappeared with the New Forest Deer Removal Act of 1851 when the Crown relinquished its right to keep deer.

Under Forest Law, the king had Forestal rights: the right to keep deer, to slaughter them, to appoint Forest officials, to hold Forest courts, and to pocket the fines inflicted (Rackham 1990). The landowner had rights to the soil, timber, and grazing, except where these were subject to common-rights. Specified commoners had rights to grazing and sometimes to wood or timber. Medieval legal documents indicated that Forests were places where the king's deer were protected by 'harsh and savage punishments' —confiscation of the offender's testicles and eyes. Such documents seldom meant what they said. In no actual court proceeding were these Byzantine penalties mentioned —in practice offenders were fined, imprisoned, outlawed or pardoned. By 1150 A.D. the main effect of Forest Law was to provide revenue. Medieval kings were poor and their authority depended upon the power to make gifts of a kind money could not buy, such as deer and giant oak trees. When used with caution, Forest Law was a means of suppressing the nobility while scrupulously respecting the rights of commoners.

In the Forest Law system there was a mind boggling bureaucracy. There were two senior Foresters, Justices of the Forest, and under them were keepers of Forests in various counties, keepers of individual Forests, justiciars, verders, regarders, riding-Foresters, foot-Foresters, and 'boys'. Some Forest Offices were hereditary, and others became negotiable assets (Rackham 1990). In the medieval period, foresters administered the Royal Forests to protect the king's game. Later, as Britain developed into a world power, responsibilities shifted to managing timber and fuelwood production, as well as to administer the rights of commoners.

The North American bureaucracy of foresters is small compared to the British model found in the Middle Ages. The major difference today is that the role of the forester is more narrowly defined. In the Middle Ages, they looked after all of the King's interests in his designated forests. Now, the foresters' first priority is the suppression of fire. A carryover from the old British Forest Law system today is the role of wildlife officers in preventing poaching of wildlife that 'belong' to the state.

Common Law, or Rights of Commons, was the peoples' prerogative to use tracts of land for grazing and related activities. Prior to 1069, the grasslands, heathlands and woodlands were freely grazed by livestock. In addition, pigs were turned out to feed on pannage (acorn and beech mast) in the fall, timber and peat were harvested for fuel, and bracken was cut for bedding (Putman 1986). After the imposition of Forest Law, these rights were allowed to continue under close regulation.

The Rights of Common pasturage and pannage were the most significant rights claimed by Forest Commoners. Many of the holdings were too small to be viable without these rights (Putman 1986). Historically, the use of the Commons was primarily for a subsistence cottage economy as well as for grazing by large landowners, (i.e., manor lords and monasteries). To this day, the majority of Commoners exercising their rights are small livestock farmers whose holdings are too small to be self supporting without the grazing rights associated with the Forest (Tubbs 1968). The Right of Common pasturage enabled a Commoner to maintain 3 times as many cattle as he would be able to without that right (Putman 1986).

The principle of North American ranchers leasing public rangelands came directly from British Common Law regarding the grazing rights of Commoners in the "Forest".

Land Management Heritage of the British Settler

British settlers came from a country having a maritime, temperate climate, productive soils, and over 20 centuries of tradition in cultivated agriculture. Most would be familiar only with intensive agricultural or forestry practices. Both food and forage production came from cultivated land, and woodlands had been planted and managed for 900 years.

Throughout the history of land management in Britain, one assumption has remained constant. This is the idea that land must be cultivated, planted, and nurtured in some fashion in order for it to be valuable. Most British native vegetation of grassland, heath, meadow, or woodland was deemed empty wasteland. It was considered to be valueless and unattractive unless it could make a monetary return (Miles 1967).

The practice of converting native vegetation into cultivated land has been revered and lauded for years. The conversion of millions of acres of wildwood into farmland was considered by Rackham (1990) as the greatest achievement of his British ancestors. Only Ritchie (1920) noted that the progress of civilization as embodied in the domestication of animals and the development of agricul-

ture had been gained largely at the expense of virgin forest. Not only was British agriculture developed at the expense of woodlands but also at the expense of all other native vegetation, what we call rangeland. The negative attitude towards native vegetation surely was brought to North America. The settlers would attempt to farm the new land and to manage the forests as they had done in Britain.

In today's Britain as well as in Canada the term *unimproved land* refers to the wildlands, the grasslands, natural woodlands, and wetlands. The normal North American definitions for rangeland and forests would fit within the British term 'unimproved land'. The assumption that cultivated land is in some way superior is quite ironic. Constant cultivation over the centuries precipitated a very serious decline in soil fertility and productivity by the time the Black Plague struck in 1349. Soil recovery occurred subsequently only because the manor lords had so few surviving tenant farmers that forages were planted and the land was used for grazing for over a century (Putman 1986). Present concern for 'sustainable agriculture' on arable lands is not the first time man has found that farming practices on arable land have deteriorated the soil or even destroyed the civilization. It is ironic that scientists studying sustainable agriculture today frequently use the so-called 'unimproved lands', the native grassland rangeland, as the reference point (the experimental control), to which the now less fertile cultivated soils can be compared.

Concomitant with the concept of 'improved land' being cultivated land is the idea that the 'improved' crop plant refers to genetically manipulated selections developed for a specific purpose. 'Improved' crop plants, fertilization with manures, liming with marl, weed control, and mechanical tillage were a normal part of British agriculture for over 1,000 years before settlers emigrated to North America.

The idea of using native vegetation and non-plowing methods of agriculture was foreign to the settler's background. It was mostly in the Royal Forests that native vegetation could be found. There, foresters regulated the use by commoners. The average British immigrant would not have looked with favour on native vegetation when he arrived. If the land was wooded, as in eastern Canada or the eastern U.S., then the colonist would have converted it into farmland (Rackham 1990). If the land was grassland rangeland, then the colonist would have considered it 'wasteland' and would prefer to plow it under to raise a cash crop such as wheat, or plant unadapted 'improved' grasses or legumes of European origin.

In the historical record, the average British or European commoner did not appear to practice grazing management, understand carrying capacity or multiple use management. References from Britain, France and Norway all reveal that livestock browsing of regenerating trees following felling resulted in the woodlands being wiped out simply due to overgrazing. No wonder the northern European grassland species of white clover, 'Kentucky' bluegrass, dandelion, 'Canada' thistle, timothy and quack grass, all common in the Canadian prairies, can survive severe overgrazing. No wonder that the settlers in the New Land as well as many producers today still consider it desirable for their animals to eat every blade of grass that grows.

The average British settler was terrified of the prairie fires that swept the Canadian prairie rangelands. These people had no experience with fire other than under the complete control of a stove, fireplace, or blacksmith's forge.

The common bias most British settlers took to the New World was the desire to 'civilize' the country through cultivation, planting and nurturing the agricultural and forest crops. They would frequently allow livestock to overbrowse regenerating forests, overgraze the grasslands, prevent broadcast burning, remove the native vegetation, and plant 'improved' crops. It would seem that native vegetation, indigenous people, and burning were all considered, whether consciously or unconsciously, to be representative of the wilderness with its chaos and savagery that existed before the settlement of Europeans. The historical record finds this kind of fear, dislike, and arrogance expressed by the Roman legions and administrators as they conquered ancient France and Britain 2000 years ago. Many Europeans have perpetuated it ever since. In other words, if people, vegetation, landscapes, or management systems were different, the automatic assumption was that they were inferior and should be removed or 'developed'. Other settlers adapted quickly to their new environment, using the rangeland in a manner that enabled the resource to perpetuate itself. From both the first group and the second group came the descendants who now actively promote the wise use of rangeland resources.

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