

Chilcotin Meadowlands: Livestock Range and Culture

James William Morton

The Chilcotin region has no precise geographical boundaries and even old-timers can quarrel about its meaning. It is a sub-region of a larger and even more indefinably defined area called the Cariboo. The Chilcotin is generally considered as occupying the entire Chilcotin River watershed plus the upper portions of the Dean, Kleena Kleene and Homathko River watersheds and the northern half of the Churn Creek watershed. It is bounded on the south and west by the Coast Mountains and on the east by the Fraser River. The northern boundary is indistinctly expressed but roughly coincides with the height of land separating the Blackwater River and Narcosli Creek watersheds. The southern portion of the Nazko River watershed, although part of the Blackwater system is also considered part of the Chilcotin country.

In total area this region occupies an area of approximately 15,000 square miles of which approximately 600,000 acres (243,000 ha) are native meadow.

Early settlement of this region occurred in the late nineteenth and early twentieth centuries. Early settlers were predominantly ranchers who established here as a result of the abundant occurrence of native meadows suitable for hay and range and sporadic occurrence of lush bunch-grass.

The Chilcotin can be considered as being the largest dry portion of the Cariboo region. Precipitation ranges from a mean of approximately 15 inches (38 cm) on the plateau to less than 9 inches (23 cm) in parts of the Chilcotin River valley.

Broadly speaking two types of ranching enterprise occur: that predominantly dependent on bunch-grass range and an irrigated hay base and that completely dependent on native meadowlands for hay and grazing. A third hybridized enterprise, containing elements of the two above types, also occurs.

Although most types of range typical to south central B.C. occur in the Chilcotin—timbered pinegrass range, alpine grass-forb range, bunch-grass range and meadow range—meadow range is predominant for much of this region. Much of the timbered area of the Chilcotin, because of droughty climate and coarse soils, is relatively unproductive rangeland as compared to the more productive forests found east of the Fraser River. Bunch-grass range in this region is generally concentrated into pockets and excepting the large acreages in the southeast portion of the region is generally limited in area and reserved almost exclusively for spring and fall range and as the core area of ranch development.

All broad ranching enterprise types found in this region rely heavily on meadowland for summer and fall grazing. In the past many ranches practiced "winter rustling" (grazing the frozen wet meadow) but this practice is presently on the decline as animal nutritional deficiencies are recognized and as it becomes in-

creasingly difficult to find reliable help to camp with the cattle. Some operators have retained a modified version of winter rustling but begin feeding much earlier than was common in years gone by.

Range Use

The great majority of meadow rangeland in the Chilcotin is under Crown (Provincial Government) control in a nonleased tenure. Administration of these untenured Crown lands is by the Range Division of the British Columbia Forest Service by way of grazing permits. Permits have been historically on a yearly basis although 5-year permits will begin to be implemented in 1978. Grazing permits regulate animal numbers, seasons of use, and occasionally class of stock or other stipulations in a given area, usually by range unit. A total of 135 range units further subdivide the region. These units have been determined by a combination of natural barriers, fencing and historic use by early ranches. Units vary greatly in size but an average one would be approximately 60,000 acres (24,000 ha) of which a high portion would be unproductive forest or mountain. As opposed to much of the rest of the province Chilcotin range units are often grazed by a single user although some ranches range in several units and some units are ranged by several ranches.

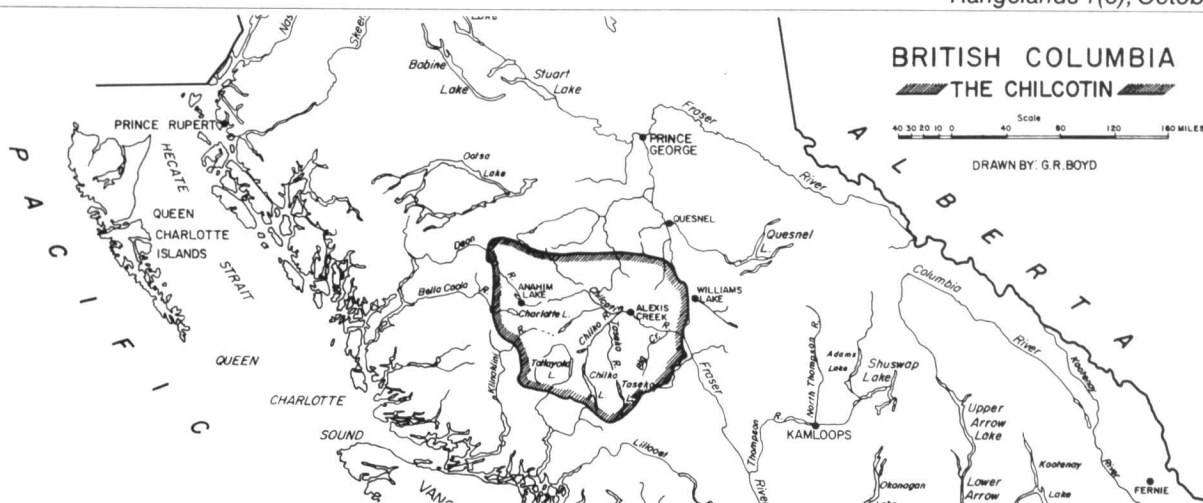
In 1977 110 ranches used Crown controlled meadow rangelands in the Chilcotin. Estimating only meadow range used and removing other types of Crown or private rangeland, approximately 18,000 head of cattle and 900 head of horses were grazed on Crown meadows during this year. Approximately 72,000 animal unit months of grazing were obtained from these Crown controlled meadowlands in 1977.

The Anahim Lake and Chezacut areas contain some of this region's largest meadows supporting completely meadow dependent ranching operations. Individual meadow complexes here sometimes exceed 10,000 acres (4,000 ha) and support individual operations up to 1,500 head.

The Nature of Chilcotin Meadows

The estimated 600,000 acres (243,000 ha) of Chilcotin meadow represent roughly 6% of the total area of the region. Its occurrence corresponds to a surface or a near-surface expression of a fluctuating water table. Variations of this water table are reflected in the nature of the organic content, dryness, salinity, and soil reaction of the meadow and determine its individual vegetative type. Periodic flooding and periodic complete water saturation give rise to organic or gleysolic soils with individual properties dependent on the above interrelated variables.

Essentially all Chilcotin meadows occur above a basement of broken basaltic rock. This local strata of flat-lying basaltic rocks no doubt plays a major role in determining the locations of surface or near surface water tables.



Virtually all meadows occur as concentric zones of different vegetative communities beginning at a dryer edge and becoming wetter towards the center.

Many of the dryer meadows are alkaline and some are also saline. Alkaline and saline meadows are not typical by Canadian standards where meadows are more typically acidic. Probably the combination of a fluctuating water table, youthful basaltic bedrock, and usual summer water deficit is responsible for these conditions.

Chilcotin meadows can be broadly classified according to five interrelated properties:

- relative wetness
- proportion and degree of decomposition of organic matter
- soil reaction and degree of salinity
- depth of material to bedrock
- proportion of grass and sedge to woody brush

Twenty-one types of meadows are recognized to date but for the purpose of this article only the more common and important types are listed.

Common Wet Meadow Types	Predominant Use
Sedge-Bullrush (<i>Carex aquatilis</i> , <i>Scirpetum</i> species)	Not useable
Sedge-Spruce (<i>Carex aquatilis</i>)	Not normally used, (minor edge useable for summer range)
Sedge-Willow (<i>Carex rostrata</i> , <i>Carex aquatilis</i>)	Summer range
Sugar Cane (<i>Carex rostrata</i>)	Summer, fall, and winter grazing, native hay.
Sedge-Reedgrass (<i>Carex</i> species, <i>Calamagrostis inexplansia</i>)	Summer, fall, and winter grazing, native hay.
Tufted Hairgrass (<i>Deschampsia</i> species)	Late spring, summer, and fall grazing, native hay.
Common Dry Meadow Types	Predominant Use
Bogbitch-wheatgrass-sedge (<i>Agropyron</i> species, <i>Carex rostrata</i>)	Late spring, summer, and early fall grazing
Wheatgrass-Muhly (<i>Agropyron</i> species, <i>Muhlenbergia richardsonis</i>)	Spring and fall grazing
Redtop-Rush-Sedge (<i>Agrostis</i> species, <i>Juncus balticus</i> , <i>Carex</i> species)	Summer and fall grazing
Muhly-Bogbitch (<i>Mulenbergia richardsonis</i>)	Late spring and fall grazing
Muhly-Saltgrass (<i>Munlenbergia richardsonis</i> , <i>Distichlis stricta</i>)	Spring and fall grazing



This is a dry type meadow made up primarily with muhlenbergia, western wheatgrass with some saltgrass (*Distichlis*), and *Carex*. This meadow type has a mineral soil base that is somewhat alkaline and saline, typically wet early in the season but then drying out for the remainder of the season. This meadow is locally called A-1 West Meadow and is located about 10 miles north of Alexis Creek.



This meadow is a wet type—primarily a *Carex rostrata* (sugarcane) type. It is primarily a hay meadow with water control by an open ditch system. After haying it is used for fall grazing. This meadow belongs to Tatla Lake Ranches and is located at Tatla Lake. The fence in the foreground is called a "snake" fence.

Hay Production

It is no surprise that the dryer meadow types provide the earliest range. Typically, cattle are moved onto these sites about mid May unless bunch-grass range is locally available, in which case they would move onto these sites about the first week of June. As the wetter types begin to dry out around the edges, cattle move or are moved onto them. The date at which cattle are essentially off the dryer meadows is dependent on the specific year's climate and water table. Typically, they would be essentially off the dryer types about the first of July. My own observations conclude that cattle do not relish the early Muhly or Saltgrass. Once on the wetter meadow types, cattle relish the sedge, sugar cane (*Carex rostrata*), if present, over other grass, sedge, and forb species. This preference for sugar cane does not cause any management problem when it occurs evenly throughout the meadow but can lead to localized overuse when it is concentrated into solid spots.

Meadow burning, water control, and drift fencing are the most significant management practices employed on Chilcotin meadows to increase range production. The best burns are done in the spring with the meadow saturated to near the surface. Old growth is removed without burning the peat, and the resulting freshened meadow produces a more palatable and productive growth than a choked state. Meadows are not burned annually but are burned according to how fast they become choked and rank.

Water control of meadows used for range is usually confined to controlling beaver and their dams. Ditching and flood gate installations are, in the Chilcotin, usually restricted to meadows used for hay productions. The present high populations of beaver with a relatively low fur value are causing extensive range utilization problems because of flooding.

Drift fences on Chilcotin meadows are, almost universally, log or rail construction. They are constructed to gain distribution of cattle onto meadows that while offering good range values, are not preferred by stock. Especially good meadows or portions are sometimes perimeter fenced. These enclosures are usually used for specific functions, the more common of which are for holding grounds and breeding pasture purposes. Fences are often constructed outside the meadow in the timber to enable meadow burning without destroying the fence. Where this is not possible and fences are constructed on the meadow they often bleach out and last for a remarkably long time.

The majority of Chilcotin meadow hay production is from deeded or leased ranch lands with minor tonnages obtained from untenured lands by authorization of Forest Service administered Hay Cutting Permits.

Many of the best meadows of the region have provided the nucleus of development of present day plateau ranches. Meadow haylands are usually much more intensively managed than the surrounding rangeland meadows. In a high state of management water is controlled by an open ditch system with head gate installations. These private haylands are usually fenced and are not grazed until after haying. Chilcotin meadows are rarely cut more than once a season. Aftergrowth and stubble is used for late fall pasture. Most meadows are hayed in their native state but some are cultivated usually by roto-tilling and re-seeded to reed canary grass, meadow foxtail, or timothy. (*Phalaris arundinacea*, *Alopecurus* sp., *Phleum pratense*). Head gates are closed for the early growing season but are opened early enough to allow the meadow to dry in advance of haying.

Fertilization while offering good proven results is at the present time only practiced on Chilcotin hay meadows on a small scale. Many operators prefer haying a larger acreage to the difficulties associated with the high cost of fertilizer and transportation limitations that presently exist.

It is interesting to note that meadows preferred for hay production and considered arable by Chilcotin standards have some interesting properties that the unfamiliar would not easily predict. Almost all are of the wet varieties with high fibre types that are preferred over more decomposed muck types because of their ability to handle machinery while in a partially wet condition. Shallow rocky meadows, despite their roughness, are often claimed to be productive because of their ability to warm up quickly in this plateau country of limited heat units. Good management of these meadows demands that hay be cut early enough to avoid the quick nutritional drop that occurs later in the season. Hay must be removed from the meadows quickly and placed on higher ground to avoid sponging up water and spoiling.

Chilcotin meadow lands have provided an ingenious pioneering people with an alternative hay and range resource. The disadvantages presented by a heavy mid-season insect population and periodic flooding are largely offset by the advantages of extensive acreage, amazing resilience to grazing and exceptionally abundant stock water offered by these meadowlands. ●

Newest in the Symposium Series published by the Society for Range Management:

Special Management Needs of Alpine Ecosystems

edited by Douglas A. Johnson

This publication presents six papers given at a special symposium presented at the annual meeting of the Society for Range Management in Casper, Wyoming, in February, 1979.

Extensive bibliographical material extends the value of the papers, which present current information about the mysterious world of the alpine tundra. Increased demands for food and fuel have created greater pressure on these fragile lands, and so current information about them would be of value to those responsible for their use and reclamation, environmentalists, research students, and individuals interested in an unusual and fascinating ecosystem. This publication will be available early in November, 1979, (soft-bound, approximately 120 pages).