

Conservation and Grazing Management in the Prairie Provinces



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Grazing is used in many of Canada's parks and protected areas to support conservation. Alberta's remaining grasslands, also known as prairies or rangelands, frequently sustain livestock grazing, and the historic management of grazing pastures has contributed positively to the health of many areas. Moderate grazing promotes grassland health when it increases biodiversity and improves ecosystem services. The continuing destruction of native grassland habitats in the Grassland Natural Region is a serious concern and is one of the reasons why temperate grasslands have been identified as a global priority for conservation and protection as one of the World Wildlife Fund's Global 200 ecoregions. With this in mind, it is time to re-examine the role of Alberta's grazing pastures in grasslands conservation, and to reorient grassland management practices in order to strengthen these ecological benefits of grazing.

Alberta

Sustainable management is essential to maintaining long-term grazing operations, and frequently supports conservation of prairie landscapes. Grazing operations on Alberta's public land use Ecologically Sustainable Stocking Rates (ESSRs), which restrict the amount of forage consumed so that plant vigour is preserved, soil is protected, and wildlife habitat is retained. In Alberta, clear guidelines for grazing management are outlined in the Operating Standards for Alberta's Public Land Grazing Dispositions and the Grazing Lease Stewardship Code of Practice. These guidelines outline the principles of range management as:

- 1) Balance forage supply and demand;
- 2) Avoid grazing during vulnerable periods;
- 3) Distribute livestock evenly; and
- 4) Provide effective rest.

Land managers are expected to administer land based on the established guidelines. When followed, the stewardship outcomes in these documents help to ensure ecological integrity and function is maintained.

Alberta Environment and Parks is responsible for monitoring grazing activities on Alberta's public land. Agrologists set forage allocation, approve any infrastructure development, and assess stewardship outcomes by determining the health and function of grasslands through range health assessments. Alberta uses separate range health assessments for tame and native grasslands. Both assessments consider site stability, amount of litter and the presence of noxious weeds, though the native grassland assessment focuses on comparing plants to a reference community, while the tame pasture assessment addresses the relative growth of forage plants. Woody encroachment, evaluated as the growth of trees and shrubs, is only determined for tame pasture. This monitoring helps to confirm that stewardship objectives are met and grazing operations are sustainable. When stewardship objectives are not met, agrologists suggest management changes to address issues and causes of land degradation. By applying Alberta's guidelines for grazing management and monitoring land use, pastures may be managed to maintain sustainable forage production, protect sections of native prairie, and sustain ecological function.

Additional actions for conservation are mainly voluntary. For instance,

MULTISAR, a program of the Alberta Conservation Association focused on multi-species conservation in the Grasslands Natural Region, works with landowners on a voluntary basis to maintain habitat and protect species-at-risk. In addition to grazing management tools, these efforts include artificial habitat structures, such as nesting platforms for ferruginous hawks, fencing alterations to reduce wildlife mortality, planting of shrubs and protection of trees and riparian areas. From 2004 to 2020, 535,254 acres of both public and private land in Alberta were surveyed for conservation objectives. Yet, compared to over 6 million acres of grazing dispositions on public land alone, these projects constitute only a small portion of Alberta's grasslands.

Manitoba

Similar grazing practices are used in Manitoba's Community Pastures to conserve ecological integrity. Until 2014, these pastures were administered by Agriculture and Agri-Food Canada (AAFC) through the Community Pastures Program, with the aim of reclaiming degraded soils while providing pastures for livestock grazing. The management strategies used by the program were successful in stabilizing soils and encouraging sustainable grazing, while improving native habitat for many species-at-risk. Currently, the Association of Manitoba Community Pastures (AMCP), in its own words a "financially self-sustaining, not-for-profit organization," manages 19 pastures containing over 141,000 hectares of land on some of Manitoba's largest and most diverse blocks of remaining native prairie.

AMCP applies the same 4 range

management practices as Alberta to encourage sustainable forage production. In addition, AMCP applies a fifth principle: minimize repetitive defoliation of plants. Range health assessments are conducted following the Manitoba methodology for native grasslands and the Alberta methodology for tame pastures. Like Alberta, Manitoba's range health assessment for native grasslands considers the plant composition relative to a reference community, soil stability, litter amounts and invasive weeds. Manitoba's assessment also includes woody encroachment, which is only considered in tame pastures in Alberta. As well as monitoring, lands are generally not cultivated or fertilized, and motorized vehicle use is minimized by conducting most work on horseback. The provincial government conducts wildlife surveys on the pastures, and wildlife and species-at-risk recovery is incorporated into land management plans based on survey results. Work for burrowing owl recovery was conducted in 2017 by installing eight artificial burrows on one pasture. Through these practices, Manitoba's Community Pastures have helped to protect intact native grasslands and to support species-at-risk recovery while maintaining their primary objective of a providing a strong forage supply.

Saskatchewan

In Saskatchewan's Grasslands National Park, by contrast, livestock grazing is allowed though there is a greater focus on conservation. Grasslands National Park is a 73,000-hectare area in Saskatchewan, and the only national park in Canada containing the mixed-grass prairie ecosystem. According to Parks Canada, the organization responsible for the park's management, Grasslands National Park was established in 1981 "to conserve, protect and present a portion of the Prairie Grasslands." Much of the land acquired for the park was once used for ranching and the lands contain a mix of native and tame grasses. Along with a diversity of landscapes and wildlife, including over 20 species-at-risk, the area contains thousands of archeological sites and impressive fossils.

For a couple of decades after park establishment, cattle grazing was phased out. In 2006, Plains bison were

reintroduced to the park. More recently, cooperation with neighbouring ranchers has reincorporated cattle grazing into the park. This reintroduction of grazing was done with the intent of restoring the necessary grazing disturbance that supports a wider range of grassland biodiversity. Plains bison reintroduction has also aided the recovery of grassland ecosystem function.

Unlike most pastures for livestock grazing, the highest priority in Grasslands National Park is maintaining and restoring ecological integrity. Grazing management strategies used in the park are not overly different from in other pastures, although grazing is implemented as a necessary disturbance and forage is shared with bison herds. According to research conducted in the park, diversity in landscapes is important for high biodiversity, and can be created by varying the extent of grazing. As a result, some sections in Grasslands National Park are heavily grazed while others are not grazed. One strategy used by park management is intense, short-duration grazing, which complements the moderate, longer-duration grazing common on pastures outside the park, increasing overall landscape diversity. Rest periods have also been shown to improve both habitat diversity and ecosystem health, with songbird populations, such as Baird's and Savannah Sparrow, recovering after one to two years. Grazing in Grasslands National Park also considers the needs of species-at-risk, and can be used to achieve targeted results. For example, beginning in 2018, livestock grazing was applied on roughly 40,000 acres of land in and around Grasslands National Park to create or improve habitat for three species-at-risk: greater sage-grouse, Sprague's pipit, and chestnut-collared longspur. In this way, grazing can be a tool to support conservation goals.

Along with grazing, several other conservation projects have been undertaken in Grasslands National Park. To increase habitat for many grassland species, 1,133 hectares of previously cultivated land in Grasslands National Park were reseeded to native grasses. Native prairie is crucial to the survival

of many grassland species and native grasses improve many ecosystem services, including carbon storage and water filtration. Additionally, active efforts to protect and restore species at risk have been taken. For example, planting of sagebrush was undertaken to enhance greater sage-grouse habitat. Approximately 140 km of fences, which can contribute to sage-grouse mortality, were removed or marked to increase visibility and prevent collisions. Eastern yellow-bellied racer snakes were monitored for locations of road crossings and the speed limit was reduced at these sites. Finally, an extirpated species, swift fox, was reintroduced to the area.

Comparatively, the Prairie Pastures Conservation Area in Saskatchewan, although also prioritizing conservation, has a much greater focus on livestock grazing. Like Manitoba's Community Pastures, these lands were formerly administered under the federal Community Pastures program. The current state of the 80,093-hectare area, which retains over 95 percent of the native prairie, is a testament to the achievements of the program. The area currently provides habitat for at least 12 species-at-risk, and has been recognized as a High Priority Conservation Area. Since 2020, these lands have been managed by Environment and Climate Change Canada's (ECCC) Canadian Wildlife Service (CWS) for grassland ecosystem and species-at-risk conservation. A management strategy is being developed through consultation with stakeholders, including local landowners and ranchers, Indigenous Peoples, and conservation groups.

Livestock grazing remains a significant land use in the Prairie Pastures Conservation Area. To ensure conservation objectives are met, grazing standards and range health assessments are applied and grazing limits are adjusted according to the soil, climate and seasonal conditions. As with Alberta, the range health assessments compare the plant composition to reference communities and assess soil erosion, litter amount and invasive weeds. Saskatchewan, in addition to the grazing principles set in Alberta, defines

additional goals of range and pasture management: maintain healthy watersheds and soil; meet the physiological needs of the animals; optimize livestock gain per acre; and be economically sound, practical to implement, simple to operate and flexible. Despite the recent emphasis on conservation in the Prairie Pastures Conservation Area, there has not been a need for grazing to be reduced. Additional restoration activities are being considered, including improving soil health, reclaiming barren or disturbed sections, and conducting assessments for species-at-risk. The management of the Prairie Pastures Conservation Area suggests these additional conservation activities can be undertaken with little or no compromise to grazing.

Alberta - Conclusion

Alberta's grazing management principles are acknowledged to help promote healthy grasslands, applying standards and range health assessments common to

the prairies. However, while these standards prevent degradation, they are aimed at maintaining sustainable forage systems. To combat the rapid loss of native prairie and the decline in species reliant on these systems, current approaches to grazing management alone may not be enough. One possibility to encourage conservation values is to expand grazing principles to include consideration for watersheds and wildlife, as in Saskatchewan, or encourage monitoring of defoliation, like Manitoba.

Some federally listed species at risk, like Mountain Plovers and Thick-billed Longspurs, favour areas of heavy grazing or recently burned grasslands, especially in the Dry Mixedgrass Natural Subregion. Others species at risk like Sprague's Pipits and Baird's Sparrows prefer lightly grazed or ungrazed areas. Therefore, it is important to maintain suitably-sized patches of various grazing regimes on the landscape so all species can thrive.

Implementing strategies to increase landscape diversity, including

species-at-risk assessments in land management plans, or more widely applying recovery plans could help halt the decline of endangered populations, while reseeded cultivated or degraded sections to native grasses could increase and improve grassland habitat. As the management of pastures in other provinces suggests, these changes can be made with minimal impacts to grazing. Although grazing pastures are already valuable for retaining native prairie, complementing existing grazing management with conservation actions using new approaches to grazing management may be necessary to prevent further loss of grasslands and the species reliant on these habitats. ▲

Cattle grazing on healthy, abundant grasslands in southern Alberta. Photo ©C. Campbell

