

PFRA GRAZING MANAGEMENT CONSERVES BIODIVERSITY

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ABSTRACT

Shrinking grassland habitats across Prairie Canada are resulting in increased societal values for biodiversity within the remaining rangeland resources. The Prairie Farm Rehabilitation Administration (PFRA) manages 929,000 hectares in the Prairie and Boreal Plain Ecozones across three Prairie Provinces. Management of these range resources accomplishes two main objectives: (1) sustaining economic viability of the rural community through provision of livestock grazing and (2) conservation of soil, water and biodiversity resources. PFRA uses the tools of inventory, research and management to accomplish these objectives. The 87 pastures are managed toward the “good and excellent” range condition classes which conserves biodiversity and is a working model of sustainable management.

KEYWORDS

rangelands, conservation

INTRODUCTION

The PFRA Community Pasture Program originated in 1935 with the passage of the Prairie Farm Rehabilitation Act. By 1940, 45 community pastures had been designated in the Palliser Triangle of southern Saskatchewan. These lands were assembled from a combination of overgrazed native range and blown-out cereal cropland that had been mainly abandoned by homesteaders due to drought. These lands were fenced and reclaimed using tame forages (mostly crested wheatgrass *Agropyron cristatum*), and eventually opened for controlled grazing. Over the next 20 years, additional land containing marginal arable soils were acquired in Manitoba, Alberta and Saskatchewan, and now there are 87 community pastures encompassing 929,000 ha in total. Currently, 84% of the Community Pasture system is composed of native rangeland.

PFRA Community Pastures are recognized as significant reservoirs of rangeland biodiversity. Many wildlife agencies and conservation groups are becoming increasingly supportive of PFRA's grazing management. Since North American rangelands evolved under conditions of bison grazing and prairie fires, the role of grazing in maintaining ecosystem function and biodiversity is now generally accepted. The two major objectives of the PFRA Community Pasture Program are: 1) to manage the rangeland resource by maintaining a permanent, healthy cover of native vegetation and ensuring biodiversity conservation within the pastures. 2) to contribute to rural economic development and stability by providing grazing opportunities and a high quality cattle breeding service to local farmers and ranchers.

METHODS

There are three primary tools that PFRA utilizes to insure the continued maintenance of biodiversity and rangeland resources within the Community Pasture system. They are: inventory, research and management.

Inventory. PFRA has been conducting range condition assessments and inventories of its Community Pastures for the past 15 years. The concept of range condition classes discussed in this report refers to standard range assessment guidelines and is based on the response of range plants to continued heavy grazing (Abouguendia, 1990). To date, 47 of the 87 pastures have been assessed for range condition,

with approximately half having range management plans developed by rangeland biological staff. PFRA data shows that 75% of the areas surveyed are in ‘good or excellent’ Range Condition Classes.

The Community Pastures are important assemblages of wildlife habitats. As an agency, PFRA cooperates with provincial wildlife agencies to conduct annual surveys for both game and non-game species. For example, annual sharp-tailed grouse (*Tympanuchus phasianellus*) breeding population surveys are conducted on at least seven PFRA pastures (SERM, 1996).

PFRA pastures are home to several threatened or endangered species of wildlife. A PFRA analysis utilizing Saskatchewan Conservation Data Centre data shows that 49 of 68 pastures in Alberta and Saskatchewan contain species at risk. PFRA played an important role in the early phase of the Swift Fox (*Vulpes velox*) release program, is actively involved in recovery programs for the sage grouse (*Centrocercus urophasianus*) and burrowing owl (*Athene cunicularia*) and currently is the steward of a black-tailed prairie dog (*Cynomys ludovicianus*) colony. PFRA's Shelterbelt Centre is also actively involved in planting new trees for ferruginous hawk (*Buteo regalis*) nest sites in the pastures.

Research. The PFRA pasture system is becoming increasingly important in the investigation of biodiversity and ecosystem function. The Auvergne Wise Creek Pasture, in southwest Saskatchewan was the site of an inventory of arthropods by Saskatchewan Environment and Resource Management.

PFRA is involved in grazing management at the jointly managed Suffield Military Base in southeast Alberta, with the Department of National Defence and Environment Canada. Biologists from the Canadian Wildlife Service have been gathering and interpreting information on the biodiversity components of the mixed grass ecosystem. This biophysical research is needed to address complex resource development issues in the Suffield National Wildlife Area.

The Saskatchewan Conservation Data Centre (CDC), with funding from the Canada-Saskatchewan Agriculture Green Plan Agreement conducted a two year assessment of the biodiversity of native rangeland plant communities (Gerry, 1997) and describe the full range of rangeland plant communities. Two community pastures were examined, one provincial pasture and the Monet PFRA pasture in west central Saskatchewan. The findings will be used to predict rangeland biodiversity elsewhere in the province and is intended to compliment data collected in traditional range assessments.

Management. PFRA range management plans are designed to allow livestock grazing at a level that leaves most range sites in the ‘mid-good’ range condition class or better. PFRA has been active in adopting new management plans for many of its community pastures. By constructing new fences and watering points most pastures have limited the amount of rangeland that is still managed as seasonlong and incorporated either complementary, deferred or rest rotation management systems.

Grazing management systems, such as deferred rotation and complementary, distribute the livestock more evenly for a shorter

period of time over the pasture unit, forcing the livestock to search for palatable forage some distance from the watering sites. This patchy grazing insures that spot overgrazing is limited and provides increased diversity in plant species and canopy structure over a larger area. By their extensive nature, community pastures are typically never grazed off 'evenly'. A benefit of operating at this level of grazing is that it fosters increased biodiversity in plant communities as was found in Willoughby's study of species diversity in the rough fescue (*Festuca scabrella*) rangelands of Alberta.

This method of grazing management has made PFRA community pastures attractive as suitable habitat for wildlife conservation agencies such as Ducks Unlimited Canada. At the Monet and Mount Hope - Prairie Rose Community Pastures, PFRA and Ducks Unlimited Canada are cooperating in a deferred rotational grazing system to manage for enhanced waterfowl nesting habitat and provide additional benefits for livestock production.

RESULTS AND DISCUSSION

Following the signing of the Convention on Biodiversity in 1992 at the Rio de Janeiro Summit, governments in Canada developed the Canadian Biodiversity Strategy. On its community pastures, PFRA has long been committed to good range management practises. Although there was no conscious commitment in our history to biodiversity, some secondary benefits from our management fit into new initiatives emerging from recently announced biodiversity Strategies and Federal and Provincial Action Plans.

PFRA promotes biodiversity conservation because both the rural economy and resource sustainability are dependent on it. Use of the land, water and biological resources needs to be integrated because they are the cornerstones of sustainable development. With the advent of integrated resource management and ecosystem planning PFRA will continue to conserve biodiversity on the Canadian Prairies.

The Prairie Ecosystem has been highly altered by human activity over the past 100 years with only 25% remaining as native rangeland. "At this time it is not possible to recreate the original grasslands of the prairies, but as resource stewards we can ensure that what remains of this precious resource remains in perpetuity" (Environment Canada, 1992).

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