

# THE POTENTIAL IMPACT OF ENDANGERED SPECIES LEGISLATION ON FEDERAL GRAZING LANDS AND THE LIVESTOCK INDUSTRY

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## ABSTRACT

Crown based grazing is an integral part of the management structure of cattle operations, and is very important to the economic fabric of rural communities. Federal crown lands, such as the PFRA operated community pastures are an integral part of the resource conservation efforts in western Canada. These lands represent a significant reservoir of the remaining natural lands which are important for wildlife habitat. Sustainable management of such contiguous blocks of land is essential for the maintenance of biodiversity. Proposed endangered species legislation would require the development of recovery plans on federal lands for endangered, threatened and extirpated species. Rural communities have a significant and vested interest in endangered species legislation due to potential economic impacts. Analyses show multi-million dollar impacts, even at low levels of stocking rate reduction. Stakeholders must be involved in both the development and implementation of endangered species recovery planning.

## INTRODUCTION

National and international concerns have resulted in the Canadian Government's commitment to the conservation of biodiversity and the protection of rare and endangered species. The globalization of the world's developed economies and declining government grain-based support programs, have reinforced the vital contribution to sustainable agriculture of a competitive livestock industry in western Canada. Thus, the linkages of this industry to the role of existing native rangelands are of increasing importance.

Historically, areas of native rangelands have been declining with increasing fragmentation and diminished habitat quality. Recent legislative proposals by Canada's Parliament could impose obligatory planning for endangered species upon federal lands, including the community pastures managed by Agriculture and Agri-Food Canada's Prairie Farm Rehabilitation Administration (PFRA) on the Canadian Prairies. The relationship between agricultural use and non-agricultural objectives was an important issue in the endangered species legislation debates.

A proper understanding of sustainable grassland management and endangered species conservation must integrate questions of habitat requirements and the economic importance of PFRA pastures to livestock operations and rural communities. It is recognized that sustainable management of private rangelands is essential to the maintenance of biodiversity.

Crown grazing is an integral part of the structure of cattle operations, and is very important to the economic fabric of rural communities. Grazing allocations on PFRA pastures are designed to stabilize local ranches, while ensuring the integrity of the resource base as an economically viable and environmentally positive alternative to the annual cultivation of erosion prone lands. The cattle industry provides a valuable contribution to local communities and the nation with a total dollar value of about \$20 billion (Canadian Cattlemen's Association, 1996). Numerically, about 46 percent of prairie farms report beef cattle, with an average of 47 head per farm (Statistics Canada, 1991). The annual production value of beef is estimated at \$325 million in Manitoba, and \$635 million in Saskatchewan. Collectively, in Manitoba and Saskatchewan, PFRA pastures

constitute about 20 percent of the crown owned grazing lands. These pastures represent some of the largest contiguous blocks of grasslands in Canada, and are examples of functional prairie ecosystems (PFRA, 1996).

The pressures for additional environmental objectives upon such landscapes, is evidenced by the interest in formal partnerships by various public interest groups and wildlife agencies with PFRA on projects related to specific plant and animal species. (North American Waterfowl Management Plan, 1996).

This study evaluates the contribution of PFRA pastures to rural farm economies, and through sensitivity analysis examines the range of possible impacts of implementation of endangered species legislation on federal lands.

## MATERIALS AND METHODS

A comparative analysis was made of various data bases related to livestock production, habitat and ecosystem classification, PFRA pasture locations, and economic evaluations of livestock production. Analyses were conducted using Geographic Information System techniques to compare livestock enterprise profiles with PFRA pasture allocations, by ecozone, and the relative occurrence of rare and endangered species. Comparisons of economic activity in each of the ecozones were derived based on the 1991 Census of Agriculture, industry estimates of the value of livestock production, and published reports on the economic contribution of rangelands.

## RESULTS AND DISCUSSION

The PFRA pasture system totals 929 000 hectares, and is managed as 87 pasture units throughout the Prairie and Boreal Plain Ecozones. Research and biophysical inventories, conducted on the pastures by PFRA range ecologists and wildlife agencies, confirm the value of PFRA pastures as critical wildlife habitat including that for rare and endangered species. Assessments show that 600 000 hectares of the Saskatchewan PFRA pastures remain in native vegetation, with 50 percent classed as "critical wildlife habitat" (Saskatchewan Parks and Renewable Resources, 1983). Another assessment determined that the majority of the PFRA pastures in Saskatchewan and Alberta contain rare and endangered species (Saskatchewan Conservation Data Centre, 1996).

In Saskatchewan, about seven percent of the cattle in the Prairie and Boreal Plain ecozones are grazed on PFRA community pastures (Table 1). This increases to 13 percent of the cattle in the Mixed Grassland and Moist Mixed Grassland ecoregions, where most endangered species occur. In these two ecoregions, it is estimated that 93 percent of PFRA patrons could be impacted by endangered species legislation.

Preliminary analyses indicate an annual direct economic benefit of \$22.4 million from cattle grazing on PFRA community pastures in Saskatchewan, and \$8.7 million in Manitoba (Table 2). In addition, indirect economic activities are estimated at two to three times, for a total economic impact in excess of \$100 million in Saskatchewan and Manitoba.

Necessary grazing adjustments to accommodate endangered species

objectives are uncertain at this time. PFRA co-management with non-agricultural partners, for wildlife initiatives, has resulted in stocking rate adjustments ranging from nil to 40 percent below rates of adjacent private sites (PFRA Suffield Community Pasture, 1995; PFRA Monet Community Pasture, 1992; and PFRA Mount Hope - Prairie Rose Community Pasture, 1990). At Suffield, reduced grazing intensity readily improved range conditions above "high-good". However, operating costs can exceed grazing revenues under regimes that incorporate additional wildlife grazing objectives (PFRA, 1995).

The proposed endangered species legislation would require the development of recovery plans for endangered, threatened and extirpated species. Current recovery plans for affected species such as Burrowing Owl, Ferruginous Hawk and Swift Fox are not expected to constrain PFRA pasture operations. However, additional recovery planning and management for "vulnerable" and provincially listed species could further impact stocking rates. A 10 percent reduction in stocking rates would create a 10 percent reduction in PFRA pasture revenues, and increase the average cost for the remaining herd by 11 percent. Revenue losses to PFRA would exceed \$1 million. Other reductions could be expected due to restrictions on surface leases, and reduced recovery of tax levies paid by patrons. At a 50 percent stocking rate reduction, grazing charges could increase by 50 percent for the remaining herd. In this scenario, maintenance of a break-even breeding program becomes very difficult. In addition, for all scenarios, public costs can be expected from administering the legislation.

Compensation for potential economic losses to pasture patrons continues to be an issue. PFRA pastures are an integral part of patrons' farming operations. Reductions in allocation would have a direct impact on farming operations and incomes. Significant local economic impacts are projected, even at low levels of reduction in the stocking rate. Projected economic losses due to stocking rate reductions of 10, 25 and 50 percent are: \$12 million, \$31 million and \$62 million, respectively, for Saskatchewan and Manitoba PFRA pastures. In addition, the provision of community pasture grazing allows for better utilization of roughage, feed grains, and chaff resources on patrons' farms. Patrons may be faced with the options of reducing herd size, or converting annual cropland to forage. For patrons getting out of the livestock industry, private forage and pasture lands may be put into annual cultivation.

## CONCLUSIONS

The analysis supports the need for serious consideration of measures to assist pasture patrons in properly dealing with any negative impacts to livestock grazing due to the implementation of the legislation. Such measures would be helpful in encouraging the continuing stewardship on their own lands, and gaining their acceptance of obligatory grazing impacts on federal lands. Compensatory and cooperative approaches are consistent with the positions of the National Agriculture Environment Committee and the Canadian Cattlemen's Association expressed to the Standing Committee on Environment and Sustainable Development.

Agricultural producers have a significant direct interest in the pending endangered species legislation. PFRA community pastures are a significant contributor to farm and rural economies, and form an integral element of a large proportion of cattle enterprises. Rural communities also have a significant and vested interest in endangered species legislation due to potential direct and indirect economic losses. Although not available, a full cost accounting of the benefits and associated impacts of biodiversity conservation would be useful. Stakeholders, especially PFRA patrons, must be involved in both

the development and implementation of endangered species recovery planning. At this preliminary stage, objectives remain vague and the impacts of legislative proposals are difficult to quantify. Experience at co-managed sites, and in other jurisdictions, suggests a range of possible stocking rate adjustments. Reductions, even at low levels, create multi-million dollar impacts in decreased economic activity, tax losses and increased costs to remaining patrons. Environmental impacts are also a concern as a result of shifts in grazing from PFRA pastures to native range on Provincial grazing leases and private pastures. This shift could negatively impact biodiversity and long term sustainability of endangered species habitat on these Provincial and private lands.

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**Table 1**  
PFRA Pastures: As a Contribution to Saskatchewan Grazing

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Ecozones - ecoregions of Saskatchewan (number of pasture units)	% of Cattle Farms with Livestock on Pasture	PFRA Grazing as a % of Total Herd	Average Farm Herd Size	Average PFRA Allocation Per Patron
- Aspen Parkland (8)	5	3	51	27
- Moist Mixed Grassland (23)	19	11	54	31
- Mixed Grassland (28)	20	14	48	34
Prairie Ecozone Total (59)	13	8	52	32
- Mid Boreal Upland (4)	26	20	55	41
- Boreal Transition (2)	4	3	58	40
Boreal Plain Ecozone Total (6)	7	5	58	41
Saskatchewan Average	12	7	53	33

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Source: Statistics Canada, Census of Agriculture 1991 and PFRA Land Management Service 1995-96 Annual Report.

**Table 2**

Economic Contribution of PFRA Grazing in Manitoba and Saskatchewan (\$millions)

Province - ecozone (number of pasture units)	Direct	Indirect	Total	Total Value of Cattle Production
<b>Saskatchewan</b>				
Prairie Ecozone Total (59)	\$19.2	\$57.7	\$76.9	
Boreal Ecozone Total (6)	3.2	9.7	12.9	
Saskatchewan Total (65)	\$22.4	\$67.4	\$89.8	\$635.0
<b>Manitoba</b>				
Prairie Ecozone Total (13)	\$6.1	\$18.4	\$24.5	
Boreal Ecozone Total (11)	2.6	7.6	10.2	
Manitoba Total (24)	\$8.7	\$26.0	\$34.7	\$325.0

Sources: Statistics Canada, "Census of Agriculture"; PFRA Land Management Service 1995-96 Annual Report; and "The Importance of Rangelands in Sustaining the Economies of Rural Communities", Fifth International Rangeland Congress, 1995.