

NATURAL VALUES:

Linking the Environment to the Economy

7

GRASSLANDS

Natural Values: Linking the Environment to the Economy was developed by Ducks Unlimited Canada (DUC) to improve the environmental and economic understanding of natural systems. In Canada, policy, legislation and regulation efforts must accelerate to protect our important resources. To view other instalments in this series, visit www.ducks.ca/consERVE/wetland_values/consERVE.html



VAST GRASSLANDS ONCE COVERED MUCH OF CANADA. Today, they are North America's most threatened ecosystem and the majority have been lost and converted for uses such as agricultural production. In Prairie Canada, up to 75% of grasslands have been lost. Grasslands provide us with a number of ecological goods and services that have both direct and indirect monetary value. They provide habitat for numerous plants and animals; filter sediment and pollutants before reaching our freshwater sources; increase water infiltration; prevent soil erosion; and provide pest control and pollination services that are vital to agriculture. The loss of grasslands is environmentally and economically costly.

Less than one per cent of Canada's Tallgrass Prairie remains. ¹

Environmental Values



- Grasslands help **maintain soil stability and prevent soil erosion.**
- Grasslands slow surface runoff and trap sediments thereby **reducing the amount of sediment, nutrients and pesticides in our water system.**
- Grasslands **remove and store greenhouse gases** that contribute to global warming.
- Grasslands increase the infiltration of water into soil and thereby **maintain the water table** that provides drinking water for many communities.
- Grasslands **provide habitat for numerous plants and animals including species at risk.**
- Grasslands provide habitat for bees and other animals that provide **pollination services** that are vital to agriculture.
- Grasslands provide habitat for wildlife that **provide pest control services** in agriculture.

Economic Values

When grasslands are lost or degraded, there is a financial cost incurred by society to replace the ecological goods and services these grasslands provided, such as:

- 1 Increased water treatment costs
- 2 Increased costs of agricultural production
- 3 Increased illness and health care costs
- 4 Water shortages
- 5 Decreased property value due to degraded aesthetic qualities
- 6 Decreased revenues from tourism activities associated with healthy ecosystems

“Without the grasslands, Canadians would be deprived of an important source of recreation, enjoyment, applied research opportunity, and economic gain.”

–Trotter, 2002²

The Value of Grasslands in Canada

Soil erosion reduces the annual profits of agricultural producers by \$12 per cropped hectare. Each year, soil erosion on the Prairies decreases the profits of crop production by an additional \$6 million.³

The value of the carbon sequestered by grassland soils in the Upper Assiniboine River Delta of Manitoba and Saskatchewan has been estimated at \$19.60/ha/year.⁴

The value of improved water quality provided by the grasslands of the Upper Assiniboine River Delta is estimated at \$4.62/ha/year.⁴

The global value of pollination services provided by animals in grasslands, rangelands and croplands has been estimated at \$117 billion/year.⁵

Expenditures related to wildlife viewing in the Upper Assiniboine River Delta are estimated to generate revenue of \$4.61/ha/year.⁴

Hunting in the Upper Assiniboine River Delta has been estimated to generate revenue of \$10.71/ha/year.⁴

DUC Recommends That:

- **Canadians** educate themselves on the ecological goods and services provided by grasslands. Become active with a conservation organization that supports grassland conservation and restoration.
- **Educators** incorporate the value of grasslands into science, social studies, geography and economics courses.
- **Non-governmental organizations** fund and deliver programs that conserve and restore grasslands.
- **Governments** fund research to determine the environmental and economic value of grasslands. Provide incentives for landowners that conserve and restore grassland habitat.

What's Next? Fact Sheet 8: Lakes & Rivers

Important Links

- www.ducks.ca/conserve/wetland_values/conserve.html
- www.ducks.ca/aboutduc/news/archives/2004/041115.html

Endnotes

- 1 Environment Canada. 2004. *How Landowners Can Help Conserve Raptors*. Accessed April 2006 at: <http://www.pnr-rpn.ec.gc.ca/nature/whp/raptors/dc17s02.en.html>.
- 2 Trotter, G. 2002. *A Landowner's Guide: Conservation of Canadian Prairie Grasslands*. Published by the Canadian Wildlife Service of Environment Canada.
- 3 Agriculture and Agri-Food Canada. 2003. *Prairie Soils: The Case for Conservation*. Accessed December 2005 at: http://www.agr.gc.ca/pfra/pub/prairiesoils_e.htm.
- 4 Olewiler, N. 2004. *The Value of Natural Capital in Settled Areas of Canada*. Published by Ducks Unlimited Canada and the Nature Conservancy of Canada. 36 pp.
- 5 Costanza et al. 1997. *The Value of the World's Ecosystem Services and Natural Capital*. Nature 387: 253-260.



Ducks Unlimited Canada
CANADA'S CONSERVATION COMPANY