

NATURAL VALUES:

Linking the Environment to the Economy

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FRESHWATER

Natural Values: Linking the Environment to the Economy was developed 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 installments in this series, visit www.ducks.ca/conserves/wetland_values/conserves.html



FRESHWATER SUSTAINS PEOPLE, OUR ENVIRONMENT AND THE CANADIAN ECONOMY. In Canada, we have seven per cent of the world's renewable freshwater – and a relatively small population – leading many Canadians to assume that we have an unlimited supply of high quality freshwater at our disposal. And while Canada does have a relative abundance of freshwater, our water is not where it is needed. Sixty per cent of our freshwater flows north to Hudson Bay and the Arctic Circle, and is unavailable to 85 per cent of the Canadian population, which resides within a few hundred kilometres of the United States border.



This regionally concentrated population has a high per capita water use, and places a heavy burden on local water supplies. Between 1994 and 1999, approximately 26 per cent of Canadian municipalities reported water shortages due to excessive consumption, drought or infrastructure problems. Municipalities that were reliant on groundwater reported shortages most frequently. Communities such as Walkerton, Ontario and North Battleford, Saskatchewan have recently experienced drinking water contaminations that have resulted in significant economic costs, illness and death.

Natural areas – including wetlands, riparian areas and uplands – help ensure a continued supply of high quality freshwater by filtering sediment, bacteria, excess nutrients and other contaminants from our water.

Environmental Values

- Many of the earth's ecosystems, including wetlands, grasslands and forests, require freshwater in order to function. Ecosystems have collapsed due to poor management of water resources.
- Ecosystems that require freshwater produce countless essential ecological goods and services such as the maintenance of human health, purification of air and water, nutrient cycling, production of food and waste treatment.
- Freshwater ecosystems provide habitat for numerous species of plants and animals including fish, shellfish, mammals and birds.

Economic Values

When freshwater decreases in quantity and quality there is a financial cost to replace lost ecological goods and services:

- 1 Increased costs for household water
- 2 Increased costs of water and sewage treatment
- 3 Water hauling and deeper wells required
- 4 Decreased swimming/fishing opportunities
- 5 Tourism losses

(continued)

- 6 Irrigation water shortage
- 7 Decreased property value
- 8 Decreased quality of drinking water and food
- 9 Increased illness and health care costs

A growing number of water users are competing for the available supply of water to satisfy basic needs, to enable economic development, to sustain the natural environment and to support recreational activities. We must reconcile these diverse needs and promote the use of water in a way that recognizes its social, economic, and environmental benefits.

– Government of Canada, 2003

The Value of Freshwater in Canada

The value of freshwater to the Canadian economy is estimated to be between \$7.5 and \$23 billion annually, amounts that are equal to the gross figures for agriculture and other major economic sectors.¹

Caledon, Ontario relies on groundwater as its only source of drinking water. The cost of replacing Caledon's drinking water service is estimated at \$33 million annually.¹

The value of the groundwater in the Assiniboine Delta aquifer, located in an agricultural region of Manitoba, has been estimated to be between \$85 million and \$4 billion.²

In 2003, the Canadian commercial freshwater fishery produced revenue of \$83.7 million.³

Each year, approximately four million people participate in recreational fishing in Canada, producing an annual revenue of \$4.4 billion.⁴

The total economic cost of the contamination of drinking water with *E. coli* in Walkerton, Ontario was estimated to be between \$64.5 and \$155 million.⁵

DUC Recommends That:

- **Canadians** educate themselves on the importance of freshwater and the threats to this resource. Become active with an organization that conserves and protects freshwater.
- **Educators** recognize and incorporate the environmental and economic values of freshwater into their science, social studies, geography and economics curricula.
- **Non-governmental organizations** fund and deliver programs that conserve and protect freshwater.
- **Government** fund freshwater research and programming; develop policies and legislation to protect our freshwater; provide incentives for those who protect freshwater.

What's Next? Fact Sheet 3: Soil

Important Links

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

Endnotes

- 1 Environment Canada. 2004. Threats to Water Availability in Canada. National Water Research Institute, Burlington, Ontario. NWRI Scientific Assessment Report Series No. 3 and ASCD Science Assessment Series No. 1. 128 p.
- 2 Kulshreshtha, S.N. 1994. Economic value of groundwater in the Assiniboine Delta aquifer in Manitoba. Social Science Series No. 29. Ottawa, Ontario: Government of Canada. Accessed August 2005 at: www.ec.gc.ca/water/en/info/pubs/sss/ss29.pdf
- 3 Fisheries and Oceans Canada. 2005. Statistical Services. Accessed August 2005 at: www.dfo-mpo.gc.ca/communic/statistics/commercial/landings/freshwater/2003_e.htm
- 4 Government of Canada. 2003. Canada and Freshwater – Experience and Practices. Accessed September 2005 at: www.sinfo.gc.ca/reports/en/monograph6/wateruse.cfm
- 5 CBC News Online. October 18, 2004. Indepth: Inside Walkerton. Ontario's heartland in shock. Accessed September 2005. www.cbc.ca/news/background/walkerton/



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