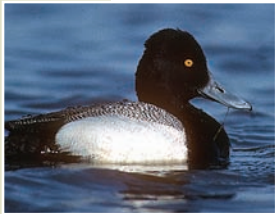


NATURAL VALUES: *Linking the Environment to the Economy*

15

THE BOREAL FOREST

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



CANADA IS HOME TO 25 PER CENT OF THE WORLD'S BOREAL FOREST, WITH THIS ECOSYSTEM COMPRISING 58 per cent of the country's land mass, of which wetlands account for 33 per cent.¹ Canada's boreal region, which is largely public land, provides Canadians with significant wealth and health benefits by providing a range of ecological goods and services (EG&S). These include market goods such as timber, oil and gas, minerals and the numerous ecological services provided by wetlands and forests such as water purification, soil stabilization and climate regulation.² The boreal forest is also home to an estimated 3.5 million Canadians that live in cities, towns, villages and settlements throughout the region, including over one million aboriginal people.^{3,4}

Industrial development including forestry, oil and gas development, mineral extraction and hydroelectric development are having cumulative environmental impacts on the boreal landscape. In addition, climate change is expected to reduce the extent of the boreal forest and its wetlands, and the frequency, area and intensity of forest fires and insect infestations is expected to increase with the warmer and drier conditions.⁵

About half of Canada's 450 species of birds use the boreal forest, and up to five billion individual birds migrate south and return each year.²

Environmental Values

- The soil and peatlands of the boreal forest form the largest terrestrial carbon storehouse on the planet, helping to reduce atmospheric concentrations of greenhouse gases.⁶
- Wetlands within the boreal forest provide water storage and flood control.
- The trees of the boreal forest produce significant amounts of oxygen.
- The boreal forest provides habitat for a multitude of wildlife species including the nationally threatened boreal population of the woodland caribou.⁷
- The forested watersheds in the boreal region capture and store water and contribute to the quantity of water available, seasonal flow and help purify water by stabilizing soils and filtering contaminants.



Economic Values

Boreal forest ecosystems have natural economic values that are often overlooked by society. When they are lost or degraded there is a financial cost incurred by society to replace the lost ecological goods and services through:

- 1 Increased environmental degradation and associated mitigation costs
- 2 Decreased quality of life and associated health care costs due to decreased water and air quality
- 3 Decreased recreational opportunities and associated expenditures
- 4 Decreased revenues from tourism and other non-timber commercial activities (e.g. fishing, outfitting) associated with healthy boreal forest ecosystems

“The boreal performs essential ecological services, from helping to regulate the earth’s climate to preserving biodiversity and conserving water. It is home to a million Aboriginal people, and hundreds of remote and rural communities. Its natural resources support some of the country’s most important industries, including oil and natural gas, mining and forestry.”

– National Round Table on the Environment and the Economy, 2005⁴

The Value of Canada’s Boreal Forest

Industries including forestry, oil and gas, mining and hydroelectricity generate an estimated market value of \$48.9 billion per year (2002\$) and contribute nearly 13 per cent to Canada’s gross domestic product.^{4,6}

The value of the carbon stored by Canada’s boreal forest has been estimated at \$849.2 billion.⁶

The boreal forest’s watershed services that improve water quality and quantity have been valued at \$18 million.⁶

Tourism, including hunting and fishing, is a multimillion-dollar industry throughout the boreal.⁴

Wetlands in the boreal forest provide an estimated non-market value of \$80.4 billion annually in flood control, water filtering and biodiversity values (2002\$).⁶

Non-timber forest products (e.g. wild rice and mushrooms) are valued at \$78 million per year (2002\$).⁶

DUC Recommends That:

- **Canadians** become educated on the economic, environmental and social importance of healthy boreal forest ecosystems.
- **Governments** fund research to increase the understanding of the environmental and natural economic value of healthy boreal forest ecosystems and develop mechanisms to provide incentives for industries that implement environmentally responsible technologies and practices.
- **Governments** lead integrated landscape planning and management in the boreal forest with support of industry and communities to minimize cumulative environmental effects arising from multiple resource development activities.
- **Educators** incorporate the broad values of boreal forest ecosystems into curricula.
- **Non-governmental organizations** promote the EG&S provided by the boreal forest and support land-use decisions that recognize these values.

Important Links

- www.ducks.ca/consERVE/programs/boreal/index.html
- www.ducks.ca/aboutduc/news/archives/2004/041115.html
- www.nrcan.gc.ca/cfs/
- www.sfmnetwork.ca/
- www.borealcanada.ca/
- www.borealforest.org/index.php
- atlas.nrcan.gc.ca/site/english/learningresources/theme_modules/borealforest/index.html#empl

What’s Next? Fact Sheet 16: Conserving Canada’s Natural Capital

Endnotes

- 1 Canadian Boreal Initiative. No date. About Canada’s Boreal. Accessed July 2007 at: www.borealcanada.ca/about_boreal_e.cfm.
- 2 Natural Resources Canada. 2005. *The State of Canada’s Forests 2004-2005*. The Boreal Forest. 2005. Accessed July 2007 at: cfs.nrcan.gc.ca/sof/sof05/index_e.html.
- 3 Canadian Boreal Initiative. 2005. *The Boreal in the Balance: Securing the future of Canada’s Boreal Region*. 66pp.
- 4 National Round Table on the Environment and the Economy. 2005. *Boreal Futures Governance, Conservation and Development in Canada’s Boreal*. 94pp.
- 5 Environment Canada. 2007. Climate Change Overview. Accessed July 2007 at: www.ec.gc.ca/climate/overview_science-e.html.
- 6 Anielski, M. and S. Wilson. 2005. *Counting Canada’s Natural Capital: Assessing the Real Value of Canada’s Boreal Ecosystems*. Published by the Canadian Boreal Initiative and The Pembina Institute. 78 pp.
- 7 Government of Canada. 2007. Committee on the Status of Endangered Wildlife in Canada. Accessed July 2007 at: www.cosewic.gc.ca/.