

# NATURAL VALUES: *Linking the Environment to the Economy*

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## FORESTS

*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/conserves/wetland\\_values/conserves.html](http://www.ducks.ca/conserves/wetland_values/conserves.html)



**FORESTS PRODUCE A WEALTH OF ESSENTIAL ECOLOGICAL GOODS AND SERVICES**, including air and water purification and are an important form of natural capital. In Canada, we are fortunate to have 10 per cent of the world's forests, which cover almost half of the country's land mass and contain significant wetland areas, many of which are treed such as swamps and fens. The boreal forest is the largest forest region in Canada at almost 6 million km<sup>2</sup> and is one of the largest remaining tracts of intact forest in the world. Forests also have significant economic value; forestry contributes considerably to our gross domestic product and provides employment for almost 400,000 Canadians. Unfortunately, ozone layer depletion, acid rain, industrial development and agricultural and urban expansion threaten the health and sustainability of this valuable resource. Climate change is another serious threat to the future of our forests and may lead to changes in growing conditions, forest hydrology, the carbon cycle, insect and fire disturbance dynamics, and the distribution of plants and animals.

Only 10 per cent of the boreal forest is rigorously protected from development and some of these lands are under interim protection pending final designation. In addition, sustainable development practices are not applied consistently throughout this ecosystem. <sup>1</sup>

### Environmental Values

- Forests use carbon dioxide in the air to produce oxygen and store carbon thereby reducing greenhouse gases in the atmosphere.
- Forests play an important role in our water cycle by pumping water from the soil back into the atmosphere through transpiration. This process also helps to cool the surrounding environment.
- Forests stabilize soil thereby reducing erosion and sedimentation.
- Forests remove airborne particles and ozone from the air and improve air quality.
- Forests provide habitat for two thirds of Canada's species of plants, animals and microorganisms, including approximately 65 per cent of Canada's species at risk designated by the Committee on the Status of Endangered Wildlife in Canada.<sup>2</sup>

## Economic Values

Forests have natural economic values that are often overlooked by society. When forests are permanently removed or degraded there is a financial cost incurred by society to replace the lost ecological goods and services through:

- 1 Increased water treatment costs
- 2 Increased illness and health care costs due to decreased water and air quality
- 3 Decreased property value due to degraded aesthetic qualities
- 4 Decreased revenues from tourism activities associated with healthy ecosystems

*“For Aboriginal peoples across Canada, the forest is fundamental to their traditional, cultural, spiritual and material well being and future self sufficiency.”*

– National Forest Strategy Coalition, 2003 <sup>3</sup>

### The Value of Forests in Canada

In 2004, forestry contributed \$36.8 billion to the Canadian gross domestic product and new capital investments in the industry amounted to almost \$3.1 billion. <sup>4</sup>

The value of the carbon stored by Canada’s boreal forest has been estimated at \$849.2 billion. <sup>5</sup>

In 2004, non-timber forest products including mushrooms, berries, honey, tree saps (e.g. maple syrup), understory plants and wild rice contributed over \$725 million to the Canadian economy. <sup>2</sup>

The watershed services provided by Canada’s boreal forest have been valued at \$18 million. <sup>5</sup>

Acid rain has reduced levels of soil nutrients and tree growth in Atlantic Canada’s forests, resulting in the loss of over half a million cubic metres of wood. The value of this lost wood is in the hundreds of millions of dollars. <sup>6</sup>

The value of all ecological goods and services provided by the forests of the Lower Fraser Valley of British Columbia has been estimated to be worth \$2000/ha/yr. <sup>7</sup>

### DUC Recommends That:

- **Canadians** educate themselves on the ecological goods and services provided by forests. Become active with an organization that supports forest conservation.
- **Industries** that operate in the forest adopt the principles of sustainable development as a business model. Sustainable development integrates and balances ecological, social and economic values.
- **Educators** incorporate the value of forests into science, social studies, geography and economics courses.
- **Non-governmental organizations** fund and deliver programs that conserve and restore forests.
- **Governments** develop and implement policies and legislation that prevent the permanent loss of forest cover and fund research to determine the social, environmental and economic value of forests. Governments should provide incentives for individuals and industries that promote forest conservation and sustain the ecological goods and services that forests provide.

### Important Links

- [www.ducks.ca/conserve/wetland\\_values/conserve.html](http://www.ducks.ca/conserve/wetland_values/conserve.html)
- [www.ducks.ca/aboutduc/news/archives/2004/041115.html](http://www.ducks.ca/aboutduc/news/archives/2004/041115.html)
- [www.foreststrategy.ca/index\\_e.htm](http://www.foreststrategy.ca/index_e.htm)
- [www.nrcan.gc.ca/cfs/](http://www.nrcan.gc.ca/cfs/)
- [www.modelforest.net/](http://www.modelforest.net/)
- [www.sfmnetwork.ca/english/home/enghome.htm](http://www.sfmnetwork.ca/english/home/enghome.htm)
- [www.borealcanada.ca/](http://www.borealcanada.ca/)

### Endnotes

- 1 Canadian Boreal Initiative. No date. About Canada’s Boreal. Accessed July 2006 at: [http://www.borealcanada.ca/about\\_boreal\\_e.cfm](http://www.borealcanada.ca/about_boreal_e.cfm).
- 2 Natural Resources Canada. 2005. *The State of Canada’s Forests 2004-2005*. Accessed August 2006 at: [http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/sof05/pdf/State-of-Forests\\_E.pdf](http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/sof05/pdf/State-of-Forests_E.pdf).
- 3 National Forest Strategy Coalition. 2003. *National Forest Strategy (2003-2008)*. Accessed August 2006 at: <http://www.foreststrategy.ca/strategies/strategy5.html>.
- 4 Natural Resources Canada. 2005. Industry Initiatives. Accessed July 2006 at: [http://www.nrcan-rncan.gc.ca/cfs-scf/national/who-qui/role-ii\\_e.html](http://www.nrcan-rncan.gc.ca/cfs-scf/national/who-qui/role-ii_e.html).
- 5 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.
- 6 Environment Canada. 2005. Clean Air Online. Accessed January 2006 at: [http://www.ec.gc.ca/cleanair-air-pur/Home-WS8C3F7D55-1\\_En.htm](http://www.ec.gc.ca/cleanair-air-pur/Home-WS8C3F7D55-1_En.htm).
- 7 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.

## What’s Next? Fact Sheet 11: Agriculture and the Environment