Ducks Unlimited Canada
CANADA'S CONSERVATION COMPANY

NATURAL VALUES:
Linking the Environment to the Economy

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Marine Areas

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

With oceans forming three of Canada's borders, it is not surprising that this country has the world's longest coastline at 243,792 kilometres and the largest offshore economic zone at 3.7 million square kilometres.[1] These marine areas provide us with a rich maritime heritage and a number of ecological goods and services including a source of oxygen, food, transportation and recreational opportunities that directly contribute to our economic prosperity and health. Approximately seven million Canadians live in coastal areas with many depending on marine areas and associated tourism for their livelihoods.

However, there are a number of challenges to conserving our marine areas. Pollution, invasive species and unsustainable resource harvesting are threatening these precious resources. In addition, climate change is causing sea levels to rise resulting in coastal erosion and the loss of coastal areas. Globally, sea levels rose by 12-22 centimetres in the last century and increases are expected to be even greater in the next century.[2]

Coastal wetlands in the Great Lakes-St. Lawrence Basin provide a number of ecological goods and services including habitat for numerous plants and animals, protection from flooding and erosion, greenhouse gas sequestration and water purification. Unfortunately, the loss of coastal wetlands in the region to date has been extensive.[3]

Environmental Values

Marine areas:

- Produce half of the world's oxygen
- Sequester greenhouse gases from the atmosphere
- Are essential components of the water cycle
- Play an important role in influencing the earth's climate
- Provide habitat for thousands of species of plants and animals

"The role that oceans have played in Canada's history cannot be overemphasized. They are an inherent part of our environmental, social, cultural and economic fabric."

– Canada's Oceans Action Plan, 2005 [4]

Economic Values

Marine areas 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 problems and associated mitigation costs
2. Decreased quality of life and associated health care costs
3. Decreased recreational opportunities and associated expenditures
4. Decreased commercial fishing revenue and associated expenditures
5. Decreased recreational fishing opportunities, revenue and associated expenditures
6. Decreased property value due to degraded aesthetic qualities
7. Decreased revenues from general tourism activities associated with healthy marine ecosystems

The Value of Canada's Coastal Regions

Ocean related industries contribute $22 billion to the Canadian economy annually.[4]

In Prince Edward Island the ocean sector contributes $247 million, or 10.0% of the GDP. When spinoff effects are considered, the ocean sector contributed $421 million or 17.1% to the Prince Edward Island GDP. [5]

In 2001 the ocean sector contributed approximately $2.62 or 10% to the GDP in Nova Scotia. When spinoff effects are considered, the ocean sector contributed $4.08 billion or just over 15% to the Nova Scotia GDP. [6]

In 2005 the value of Canada's fisheries landings was $2 billion.[1]

Coastal wetlands provide life support for oysters valued at between $54-$6,337/acre/year. [7]

The global value of the ecological goods and services provided by marine areas has been estimated at $577/ha/year (1994 USD).[8]

The global value of the ecological goods and services provided by coastal wetlands has been estimated at $165/ha/year (1994 USD).[8]

DUC Recommends That:

- ***Canadians*** educate themselves on the ecological goods and services provided by marine areas. Become active with a conservation organization that supports marine conservation.
- ***Educators*** incorporate the value of marine areas into science, social studies, geography and economics courses.
- ***Non-governmental organizations*** fund and deliver programs that conserve and restore marine areas.
- ***Governments*** develop and implement policies and legislation that protects and ensures responsible management of marine areas. Governments should also fund research to determine the environmental and economic value of marine areas and provide incentives for individuals and industries that protect marine areas.

Important Links

- www.ducks.ca/conserve/wetland_values/conserve.html
- www.ducks.ca/aboutduc/news/archives/2004/041115.html
- www.dfo-mpo.gc.ca/communic/facts-info/facts-info_e.htm
- www.pac.dfo-mpo.gc.ca/oceans/mpa/strategy_e.htm
- www.dfo-mpo.gc.ca/oceans-habitat/

Endnotes

1 Fisheries and Oceans Canada. 2003. Fast Facts. Accessed June 2007 at: www.dfo-mpo.gc.ca/communic/facts-info/facts-info_e.htm.

2 IPCC. 2007. Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at: ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Pub_SPM-v2.pdf.

3 Environment Canada. 2005. Great Lakes Coastal Wetlands – Science and Conservation. Accessed June 2007 at: http://www.on.ec.gc.ca/wildlife/factsheets/pdf/fs-coastal-e.pdf.

4 Fisheries and Oceans Canada. 2005. *Canada's Oceans Action Plan: For Present and Future Generations.* Accessed June 2007 at: www.dfo-mpo.gc.ca/oceans-habitat/oceans/oap-pao/pdf/oap_e.pdf.

5 Canmac Economics, School for Resource and Environmental Studies, Enterprise Management Consultants and the Secretariat of the Atlantic Coastal Zone Information Steering Committee 2002. *The Value of the Ocean Sector to the Economy of Prince Edward Island*, prepared for the Government of Prince Edward Island and the Government of Canada, 114 p. Accessed June 2007 at: www.mar.dfo-mpo.gc.ca/pande/ecn/pei/e/pei2-e.asp.

6 Gardner Pinfold Consulting Economists Ltd. And MariNova Consulting Ltd. 2005. *Economic Value of the Nova Scotia Ocean Sector*, prepared for the Government of Nova Scotia and the Government of Canada. Accessed June 2007 at: www.mar.dfo-mpo.gc.ca/pande/ecn/ns/e/ns3-e.asp.

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. Accessed June 2007 at: www.ducks.ca/aboutduc/news/archives/ 2004/041115.html.

8 Costanza et al. 1997. *The Value of the World's Ecosystem Services and Natural Capital.* Nature 387: 253-260.

What's Next? Fact Sheet 15: **The Boreal Forest**