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Economic Impact of Invasive Species

The arrival of an exotic or invasive species in an environment can threaten the survival of native species, but it can also have significant economic consequences. One study estimates invasive species in the United States caused “major environmental damages and losses adding up to almost \$120 billion per year.” This list includes sources discussing the economic impact of exotic species on British Columbia, Canada and the United States.

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THE ECONOMIC IMPACT OF INVASIVE SPECIES

Invasive species are “plants, animals and microorganisms from one part of the world that are transported beyond their natural range and become established in a new area.”¹ The arrival of an exotic or alien species in an environment may threaten the survival of native species, but it can also have significant economic consequences. One study has estimated invasive species in the United States caused “major environmental damages and losses adding up to almost \$120 billion per year.”² The threat of invasive species can also prompt trading partners to impose restrictions, causing economic losses.³ The 2008 British Columbia Agricultural Plan identified as a key objective the strengthening of a knowledge base critical to invasive plant management, including “gaining a better understanding of which invasive plants have the greatest impact on the BC economy and environment.”⁴

This Current Issues lists available sources discussing the economic impact of exotic species on British Columbia, Canada and the United States.

Websites

“Alien Species in British Columbia: What are the Economic Costs?” Website of British Columbia Ministry of Environment, Environmental Stewardship Division. [Accessed May 15, 2008.]

http://www.env.gov.bc.ca/wld/aliensp/alien_ecohuman.html

“Economic Impacts.” Website of (U.S.) National Invasive Species Information Center. Last modified May 9, 2008. [Accessed May 15, 2008.]

<http://www.invasivespeciesinfo.gov/economic/main.shtml>

“Impacts of Invasive Plants: Economic.” Website of (U.S.) Center for Invasive Plant Management. Last updated Dec. 12, 2007. [Accessed May 15, 2008.]

http://www.weedcenter.org/inv_plant_info/impacts.html

Magazine Articles

“Economic Dimensions of Invasive Species.” Edward A. Evans. *Choices*. June (2003).

<http://www.choicesmagazine.org/2003-2/2003-2-02.htm>

“Paying for Protection from Invasive Species.” Peter T. Jenkins. *Issues in Science and Technology*. Fall (2002). <http://www.issues.org/issues/19.1/jenkins.htm>

Reports and Recommendations

Environmental and Economic Costs of Alien Invasive Species in Canada. RNT Consulting Inc. Picton, Ont.: RNT, 2002.

http://www.cise-scie.ca/english/library/bg_papers/biodiversity/enviro_economic_costs_alien_invasive_species/Invasives.pdf

“Chapter 4: Invasive Species” in *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*. Canada, Commissioner of the Environment and Sustainable Development, Office of the Auditor General of Canada. Ottawa: Auditor General, 2002.

<http://www.oag-bvg.gc.ca/internet/docs/c20021004ce.pdf>

- See especially pg. 8

Invasive Alien Species Framework for BC: Identifying and Addressing Threats to Biodiversity: A working document to address issues associated with biodiversity in British Columbia: Prepared for: Biodiversity Branch, Ministry of Water, Land & Air Protection. C. Rankin and Associates. Victoria: The Ministry, 2004.

http://www.env.gov.bc.ca/wld/documents/alien_species_framework_BC_0205.pdf

- See especially pgs. iii, 4-7.

Assessment of Models for the Collation and Communication of Information on the Economic Impacts of Invasive Plants: Report #2. Invasive Plant Council of British Columbia. Williams Lake, B.C.: IPCBC, 2007.

<http://www.invasiveplantcouncilbc.ca/publications/ipcbc-reports/IPC-Report2-Economic-Impacts.pdf>

Book Chapters

“Ecological and Economic Impacts of Alien Species: A Phenomenal Global Change.” Daniel Simberloff. In *Alien Invaders in Canada’s Waters, Wetlands, and Forests*, edited by Renata Claudi, Patrick Nantel, and Elizabeth Muckle-Jeffs. Ottawa : Canadian Forest Service, Science Branch, 2002.

“Human Dimensions of Invasive Alien Species.” Jeffrey A. McNeely. In *Invasive Alien Species: A New Synthesis*, edited by Harold A. Mooney, et al. Washington: Island Press, 2005.

“Plant Quarantine: Preventing the introduction and spread of alien species harmful to plants.” Marcel Dawson. In *Alien Invaders in Canada’s Waters, Wetlands, and Forests*, edited by Renata Claudi, Patrick Nantel, and Elizabeth Muckle-Jeffs. Ottawa: Canadian Forest Service, Science Branch, 2002.

- See especially page 243.

“Who should pay? Economic dimensions of preventing harmful invasions through international trade and travel.” Peter T. Jenkins. In *The Great Reshuffling: Human Dimensions of Invasive Alien Species*, edited by Jeffrey A. McNeely, Cambridge: International Union for Conservation of Nature and Natural Resources, 2001.
<http://www.iucn.org/dbtw-wpd/edocs/2001-002.pdf>

Papers and Academic Articles

“Characterised and projected costs of nonindigenous species in Canada.” Robert I. Colautti, et al. *Biological Invasions* 8, No. 1. January 2006.
<http://web2.uwindsor.ca/courses/biology/macisaac/pages/econ.pdf>

“Economic impacts of aquatic invasive species: a review of the literature: Working Paper 05-02.” Sabrina J. Lovell, Susan F. Stone. Washington: US Environmental Protection Agency, National Center for Environmental Economics, 2005.
<http://yosemite.epa.gov/EE/epa/eed.nsf/WPNumberNew/2005-02?OpenDocument>

“Environmental and economic costs of nonindigenous species in the United States,” David Pimentel, et al. *BioScience* 50, Issue 1, January 2000.

Invasive Non-Native Species: Background and Issues for Congress: Report for Congress. M. Lynne Corn, et al. Washington: Congressional Research Service, 2002.

“Potential impacts of exotic forest pests in North America: a synthesis of research.” E. Krcmar-Nozic, B. Wilson and L. Arthur. Victoria: Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre, 2000.
Microlog No. Information Report BC-X-387.
<http://dsp-psd.pwgsc.gc.ca/Collection/Fo46-17-387E.pdf>

- See especially pg. 11-15.

“Update on the environmental and economic costs associated with alien-invasive species in the United States.” David Pimentel, Rodolfo Zuniga, Doug Morrison. *Ecological Economics* 52. 2005.

http://www.weedcenter.org/inv_plant_info/pimentel_update%202005.pdf

¹ British Columbia, Ministry of Environment, Environmental Stewardship Division website, “Alien Species in BC: What Are Alien Species?” <http://www.env.gov.bc.ca/wld/aliensp/index.html> Accessed May 15, 2008.

² David Pimentel, Rodolfo Zuniga and Doug Morrison, “Update on the environmental and economic costs associated with alien-invasive species in the United States,” *Ecological Economics* 52. 2005, p. 273.

³ C. Rankin and Associates, *Invasive Alien Species Framework for BC: Identifying and Addressing Threats to Biodiversity*, Victoria: The Ministry of Water, Land and Air Protection, 2004, p. 7.

⁴ British Columbia, Ministry of Agriculture, *The BC Agriculture Plan: Growing a Healthy Future for B.C. Families*, Victoria: The Ministry, 2008, p. 19.