



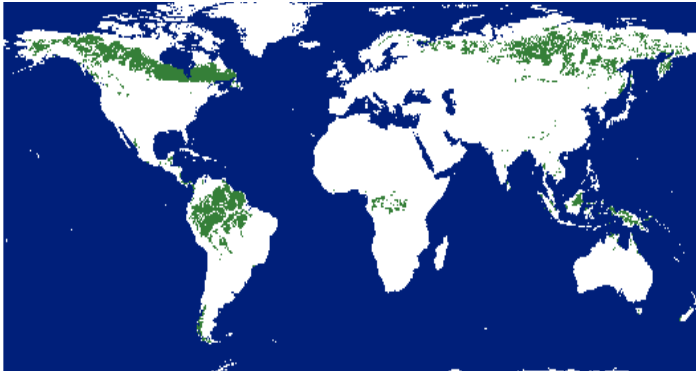
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GLOBAL FOREST WATCH CANADA Mapping Canada's Forests

By Peter Lee



Frontier Forests 8,000 years ago



Frontier forests today

A recent study by Global Forest Watch Canada and World Resources Institute¹ reported that Canada has one of the world's major repositories of northern forest. The maps to the left show the global decline of forests and Canada's critical remaining boreal forest.²

Canada is home to over a third of the world's boreal forest and a tenth of total global forest cover. Largely unsuited to agriculture, these forests have escaped widespread conversion to farmland and ranches—key threats in tropical regions. This provides a world-class conservation opportunity!

However, a major challenge is to ensure the maintenance of this global ecological treasure in the face of massive, imminent industrial pressures. As part of a larger global effort by Global Forest Watch international, in order to contribute to the maintenance of Canada's forests, Global Forest Watch Canada and World Resources Institute have undertaken a major project to map,

using satellite imagery, the forest extent, forest disturbances and remaining intact forests throughout the commercial zone of Canada.

The Opportunities: Over the last few years, revolutionary advances in computer and communications technologies have cut the costs of environmental monitoring. NGOs in many parts of the world are now taking advantage of these technologies to marry existing information

¹ World Resources Institute. 2000. *Canada's Forests at a Crossroads: An Assessment in the Year 2000*. A Global Forest Watch Canada report.

² Dirk Bryant, Daniel Nielsen and Laura Tangle, *The Last Frontier Forests: Ecosystems and Economies on the Edge*, (World Resources Institute, Washington DC, 1997).



held by government agencies and research organizations with satellite imagery and field data collected through their grassroots networks, to track the status of, and changes in, forest resources. Geographic Information Systems (GIS) make it possible to store and analyze vast amounts of data using low-cost desktop programs, while the internet offers a means for sharing and disseminating this information across great distances, instantaneously, and to millions of users.

As well as technological opportunities, several major U.S. and European companies that purchase wood from Canada's boreal forest have recently committed to cease buying wood from what they have variously termed 'endangered forests' and 'high conservation value forests' and to ensure that their 'good wood' purchases comes from sustainably-managed forests. From the ongoing debate on 'sustainable forestry,' 'endangered forests' and 'high value conservation forests' is emerging a growing recognition of the need to identify where the remaining intact forests are in Canada's vast forest regions.

Canada is the world's leading exporter of timber products and four-fifths of all Canadian forest products are exported to the United States. The companies who have made the recent commitments – including Home Depot, Lowe's, and IKEA – account for around 25 percent of total U.S. wood retail volume and other companies may follow this lead. Meanwhile the U.S. Treasury, the World Bank, and others are devising new conditions to govern support for forest projects that involve similar commitments. These commitments point to a new opportunity to advance sustainable forestry and conservation of remaining intact forests, which will help to preserve biological diversity and provide the nucleus for future ecosystem restoration. Global Forest Watch Canada, World Resources Institute and Global Forest Watch international have capitalized on these opportunities to initiate a project: Mapping Canada's Intact Forests.

The Problems: Canada's boreal forest is rapidly being opened up for its timber, energy, and mineral resources. Some of the key problems identified in Global Forest Watch Canada's *Crossroads* report that will be addressed by mapping Canada's intact forests follow:

- **Canada's forests are managed predominantly for timber. However, the Canadian public values forests primarily for nontimber uses** - Some 94 percent of Canada's forests are held in the public trust by federal and provincial governments. Polling data indicate Canadians most value forests for nontimber uses: for species habitat; for ecosystem services such as watershed protection and carbon storage; and for intrinsic wilderness value. Mapping Canada's intact forests will identify for Canadians important areas for wild life, wilderness and other nontimber uses.
- **Canada's most species-rich and productive forests have been extensively modified by development activities** - Over half of the forests in 7 of Canada's 10 major forest regions have been fragmented by roads and other access routes. The intact forest mapping project will map where the most modified areas and where the intact forests are located.
- **Development increasingly extends into Canada's northernmost forests** – Although almost 50% of Canada's boreal forest region is under logging tenure, much of the remaining 50% is intact forests and more the northerly forest-tundra region is mostly intact, but threatened with mining, energy and other developments. The intact forest mapping project will help identify the best remaining opportunities to focus future conservation efforts.

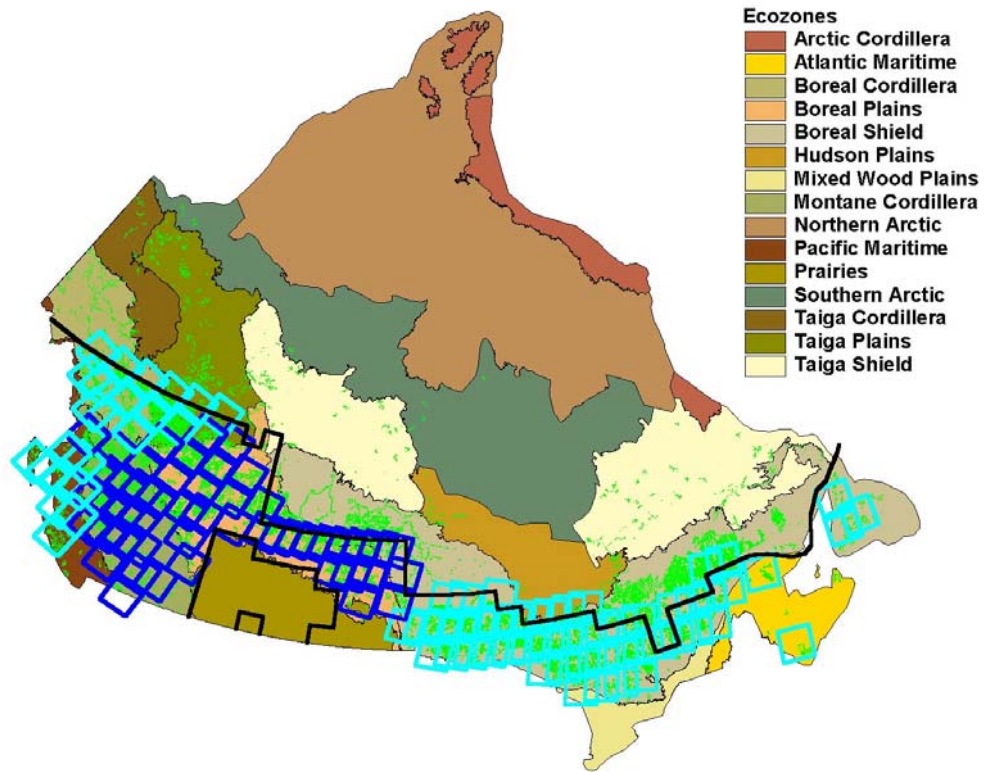




From the results of Global Forest Watch Canada's intact mapping project, it is exciting to visualize future mapping and analysis products that can help to improve forest management decisions throughout Canada. For examples: identifying intact forests in relation to companies' operating areas, in relation to forest ecological zones, in relation to political jurisdictions and First Nations, and in relation to existing gaps in representation for protected areas, buffers and connecting corridors, and; documenting the remaining intact forests in the face of increasing development that extends into Canada's northernmost forests.

Lacking comprehensive data on forest condition, development and its impacts, Canadian government resource agencies and the private sector are often unable to make informed decisions about how they manage their forest resources. NGOs and advocacy groups, which might otherwise play an oversight role assuring that these areas are being managed in the public interest, have been similarly hampered. Detailed and up-to-date maps and satellite images of the location of remaining intact boreal forest need to be a key input to bioregional planning approaches and to advocacy efforts in Canada which balance economic and conservation needs.

Where We Are Now: As of June 2000, we have purchased an initial 50 Landsat TM/ETM+ images for the boreal plains and montane cordillera ecozones. Most of these images are now available for downloading or CD purchase. We are using two image dates for each area, 7-10 years apart, for the fine-scale mapping. The use of two dates allows better analysis of forest change. The output for the Boreal Plains Ecozone is targeted for formal review by September/October 2001 and will consist of a forest cover map, a forest disturbance map and an intact forest map.



Review of methods and products will be an on-going component of the mapping project. A wide-range of experts reviewed the initial methodology and these comments have been incorporated into this revision. The final maps for each ecozone will be reviewed by regional experts, as well as validated using ancillary data.

The Canada forest mapping project is the first step in a comprehensive, long-term effort to assess and monitor forest condition.³ Funding permitting, future work will build on our present mapping efforts and will focus on filling in gaps in the satellite imagery within the commercial forest zone, expanding our mapping efforts north of the commercial forest zone, and on fine-scale identification of other forests with high conservation value such as forest areas for biodiversity protection and forest areas containing threatened ecosystems, communities or species. Additionally, we are committed to regular future monitoring of forest condition at appropriate intervals.

Global Forest Watch Canada: GFWC's mandate is to provide objective, balanced information on Canada's forests to as wide an audience as possible. One of our goals is to complete an intact forest mapping project for Canada's commercial forest zone by the summer of 2002. Our

³ There are many local or regional specific mapping efforts such as those of the Sierra Club of British Columbia.



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**ALBERTA WILDERNESS
ASSOCIATION**



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Strategic Plan, detailing our mission, purposes, goals and describing our major projects is available at www.globalforestwatch.org.

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