Backgrounder
Canada's Large Intact Forest Landscapes

Canada's forests provide critically important benefits to the nation? ranging from their economic contributions via the forest products industry to recreational opportunities to life-sustaining ecosystem services, such as soil erosion control and watershed protection. The vast extent of Canadian forests represents one tenth of the world's forested area, one quarter of the world's temperate rainforests, and more than one third of the world's boreal (i.e., northern, conifer-dominated) forests.

Despite the importance and diversity of benefits derived from Canada's forests, until very recently Canadians had little access to information about forests other than timber production statistics. This is now beginning to change, with various national and provincial government agencies and other groups documenting and reporting on a wider range of forest values.

This report presents the results of a multiyear project to map Canada's large, intact forest landscapes and analyze their distribution and level of protection. Intact forest landscapes contain no visible signs of large-scale human activities such as agriculture, logging, mining, roads, pipelines, or powerlines. Mapping these landscapes is important for several reasons.

Intact forest landscapes are becoming increasingly rare at the global level, due in large part to their vulnerability to the effects of large-scale human interventions? effects that are not easily or quickly reversed. The remaining global tracts of intact forest landscapes have intrinsic value as part of the Earth's natural endowment. They are also growing in importance as benchmarks or reference points for understanding managed forest landscapes and designing management schemes that preserve or restore significant aspects of the natural forest landscape. Indeed, intact forest landscapes are areas of opportunity and responsibility, where all land use options? from development to

conservation? are still open. They are areas in which the best available knowledge and technology can be applied to inform effective and responsible decision-making.

This project to map Canada's intact forest landscapes aims to increase knowledge about their extent and location, and to enable better decision-making by providing data in accessible forms for use by government, industry, and the public. It is the result of a unique collaboration among members of the international Global Forest Watch network and was carried out by Global Forest Watch Canada, partner organizations of Global Forest Watch Russia, and the World Resources Institute. The project builds on and extends previous work assessing forest intactness in Canada and is part of a larger effort by the Global Forest Watch network to map intact forest landscapes in important forest countries around the world. The methodology was initially developed by Global Forest Watch to map Russia's intact forest landscapes, and analysts from Global Forest Watch Russia have been key partners in this Canadian study.

For the purposes of this study, we define an intact forest landscape as a contiguous mosaic of natural ecosystems in a forest ecozone, essentially undisturbed by human influence, including both treed and naturally treeless areas. An intact forest landscape must be large enough to contain and support natural biodiversity and ecological processes, and to provide a buffer against human disturbance from surrounding areas. Hence, in this study, we decided to examine forest tracts of 50,000 hectares or larger that are at least 10 kilometres wide, and to refer to them as large, intact forest landscapes. Other forest areas may possess high conservation value, but mapping them was beyond the scope of this study.

This collaboration uses a modified version of the Russian methodology, tailored to suit Canadian circumstances. Compared with previous work on forest intactness in Canada, this study represents the most detailed national assessment undertaken, looking at a wider range of human disturbances and using satellite images and better ancillary information.

The methodology involves identifying intact forest landscapes using high-resolution satellite imagery (Landsat data at a resolution of 30 metres on the ground and ASTER data at a resolution of 15 metres) as well as some medium-resolution Landsat data and ground and aerial photography verification.

The method presumes all forest landscapes to be intact at the outset of the study, and disturbed areas are systematically eliminated through successive efforts to detect positive evidence of human influence on the landscape. Thus, the search is for signs of human disturbance, not for signs of intactness, as the former are much easier to detect. This simple methodology and decision model enables mapping of intact forest landscape areas that is replicable, cost-effective, feasible at the continental level, at a scale of 1:1.5 million, sufficiently detailed to support practical decision making.

In accordance with Global Forest Watch policy, the methods and results of this project have been reviewed by a broad set of experts and stakeholders, including Canadian and international reviewers with expertise in cartography, remote sensing and Geographic Information Systems (GIS), forest ecology, forest management, the forest industry and wildlife management. The reviewers were drawn from a wide spectrum of organizations, including governments, industry, conservation organizations and Global Forest Watch partners. The project went through two major reviews: an initial review of the methods over two workshops in 2001 and 2002, and a final review of draft results in 2003, which went by invitation to approximately one-hundred reviewers. It is important to bear in mind, however, that this methodology likely overestimates the area of intact forest landscapes, as signs of disturbance are more likely to remain undetected than to be mistakenly identified.

Global Forest Watch is committed to providing the best possible information for decisions on forest land use. Thus, we plan to work to refine and expand this analysis to include more detailed data, map smaller undisturbed areas of forest landscape, analyze

the location of social, economic, and conservation values in the forest landscape, and conduct studies tracking past and future forest change. This fall and forthcoming winter we intend to release a series of reports examining the status of Canada's forest-resident aboriginal population, the operations of Canada's forest industry and the management of Canada's forests along its streams, lakes and wetlands. We encourage the Canadian government, industry, and public to join us in these efforts.

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Global Forest Watch Canada is the independent national affiliate of the Global Forest Watch network, a project of the World Resources Institute. The Global Forest Watch network was formed to provide access to better information about the world's forests and the environmental impact of their development.

Canada's Large Intact Forest Landscapes, including maps and data, as well as media briefing materials are available at both www.globalforestwatch.org and www.globalforestwatch.ca