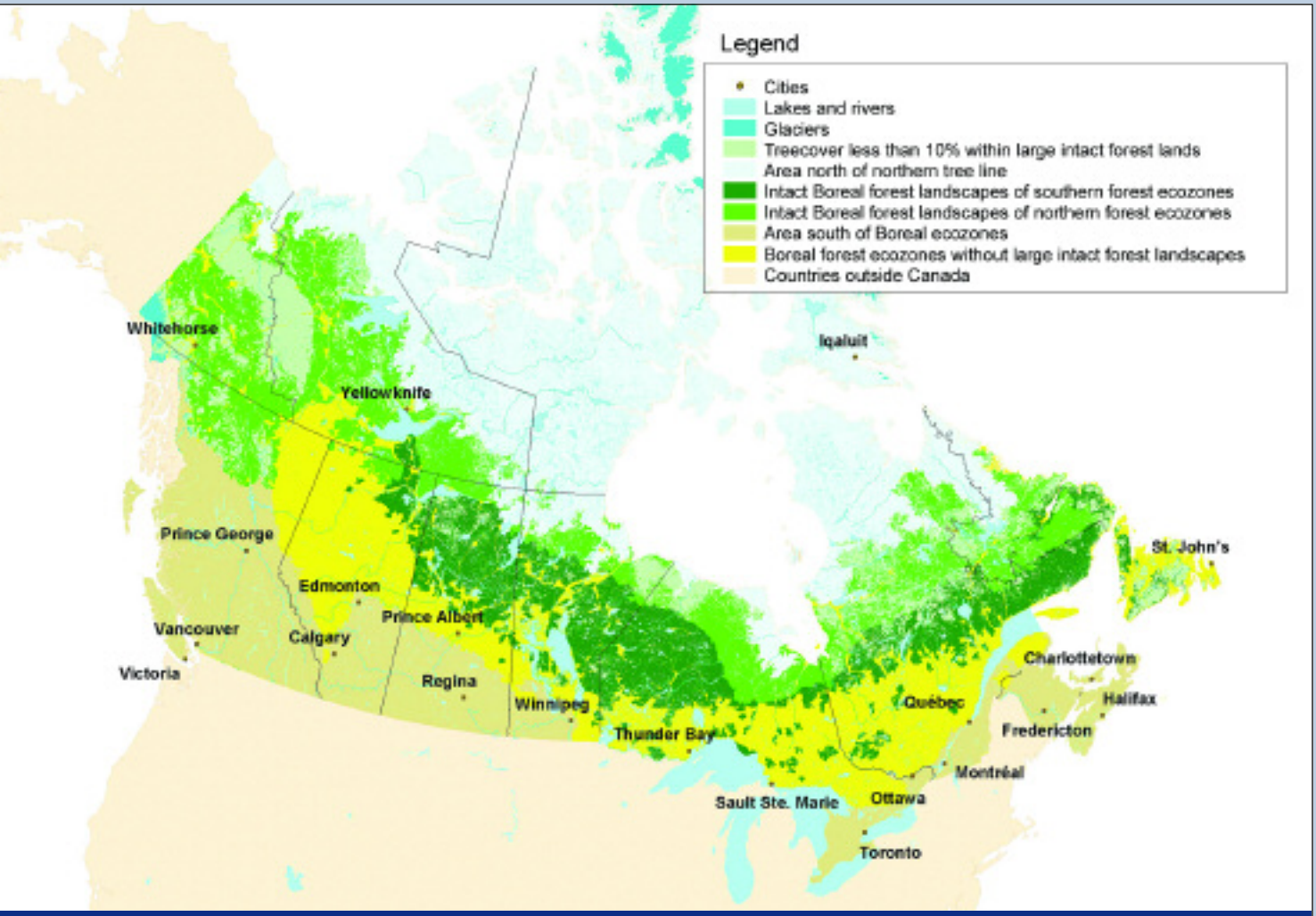
A ForestEthics Report

BRINGING DOWN THE BOREAL

How U.S. Consumption of Forest Products is Destroying Canada's Endangered Northern Forests



Intact Forest Landscapes of the Canadian Boreal

The Canadian Boreal forest is one of the world's largest remaining intact forest landscapes undisturbed by roads or industry. While about three quarters of the Earth's original forest cover has been lost or degraded, the Boreal in Canada is still mostly intact.

In the map above, the light green, dark green and yellow areas together constitute the Canadian Boreal region. The light and dark green areas represent intact landscapes greater than 123,500 acres in size, while the yellow indicates areas that have been fragmented by roads and industry as mapped by Global Forest Watch Canada. Intact forest landscapes are endangered on a global scale as industrial resource development expands.

Other Endangered Forest values not depicted above, and yet to be mapped in most of the Boreal, include the core habitat of focal species, smaller intact areas, old-growth habitat and representative forest types in the southern Boreal landscape where less intact forest remains.

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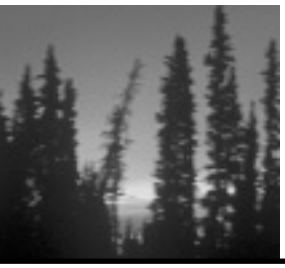


Brian Evans

Northern Images by Wayne Sawchuk

John Kormendy

EXECUTIVE SUMMARY

The Canadian Boreal forest is North America's greatest remaining conservation opportunity. Stretching from Alaska to the Atlantic across the center of Canada, the Canadian Boreal (herein the "Boreal") contains one-quarter of the world's remaining intact, original forests. Most of the Boreal is the traditional territory of Canada's Aboriginal Peoples. More than twelve times the size of California, the Boreal forest provides globally important habitat for large carnivores like bear, wolves and lynx along with some of the world's largest herds of woodland caribou. The Boreal landscape's mosaic of forest, rivers, wetlands and lakes is also the nesting and breeding ground for billions of North America's birds which migrate to and from the Boreal through America's back yards and lakes each spring and fall. Locked in its rich peat lands, mosses, soils and trees, the Boreal stores more carbon than any other terrestrial ecosystem, helping to regulate the Earth's climate. Entwined with the forest are the Boreal's waterways of wetlands, rivers and lakes that provide more freshwater than any other place on Earth.

The logging of the Boreal forest has a surprisingly strong connection to the United States. The United States is the primary market for Canadian Boreal forest products.

Unfortunately, industrial development—primarily logging, oil and gas, mining and hydro-electric projects—is threatening Canada's Boreal forest. Among these industries, logging in the Boreal—the subject of this report—is widespread and growing. Canadian governments have already allocated most of the productive timber lands—about 30 percent of the Boreal forest—to logging companies. The vast majority of these allocated forests have been licensed to sixteen corporations.

In the southern Boreal, most of the landscape is devoted to logging. Almost all of this logging is done through clearcuts—some reaching as large as 20,000 acres in size. In many areas logging of the Boreal is unsustainable,[1] with cut levels often determined by mill capacity rather than ecological capacity. Timber companies tend to target old-growth stands, thereby degrading key values in many of the most ecologically significant areas of the landscape. The predictable results on wildlife populations, plant communities, water supplies, and human communities that rely on intact forest ecosystems are now appearing in the Boreal as they have everywhere else in the world where unsustainable logging has occurred.

The logging of the Boreal forest has a surprisingly strong connection to the United States. The United States is the primary market for Canadian Boreal forest products. These products take the form of two-by-fours, newsprint, toilet paper, copy paper, catalogs, and market pulp (turned into paper products in the U.S.), and their consumption is driving logging in the Boreal. The United States imports a staggering 80 percent of all Canadian wood and paper exports. This report finds that:

- Canadian logging causes almost five acres of forest to be lost every minute, every day, principally to feed U.S. demand;
- The Canadian Boreal provides about 20 percent of the world's supply of market pulp for paper products;
- U.S. consumers buy more than half of all Boreal wood and paper production;
- Forty-six percent of all newsprint consumed in the United States was once Canadian forest habitat—principally originating from the Boreal;
- Many of North America's largest catalogs and tissue product manufacturers use virgin boreal pulp.

This report suggests that companies and consumers in the United States have a special responsibility to ensure their actions shift the current situation and contribute to a positive conservation outcome for the Boreal.

Although the logging of Canada's Boreal has started it down the same path that has degraded three-quarters of the world's original forests, there is still time to do things differently in the Boreal, to conserve and save this global treasure. About two-thirds of the region is intact, undisturbed by roads or industry, yet only eight percent of the Boreal is legally protected. The Boreal's status as one of the last places remaining in the world with these outstanding values, but under threat and lacking credible land-use planning, Endangered Forest mapping, and conservation areas design and establishment, makes it an Endangered Forest (see page 18). And practical solutions and alternatives exist such as using recycled paper, mapping and protecting Endangered Forest values, buying Forest Stewardship Council eco-certified products and supporting the Canadian Boreal Forest Conservation Framework, a new model to conserve the entire Boreal through a protected areas network and sustainable development.

The U.S. marketplace has a key role to play in determining the ultimate fate of the Boreal. Already, several leading logging companies and Boreal customers have broken with the status quo, embraced this conservation model and are changing their production and buying behaviors. This report is a resource and a guide to both encourage and challenge companies that produce and buy Boreal forest products to be part of this solution. How producer and consumer companies respond to this urgent conservation need, in their policies, practices and procurement, will position them as either pariahs or champions in the public imagination and will help secure market supply and market share well into the 21st Century.

Recommendations

Forest product producer and consumer companies that demonstrate environmental responsibility and leadership are better positioned to inspire customer and investor confidence, secure market access and attract investment. We urge consumers of boreal forest products to:

1 Eliminate Canadian Boreal forest products from your company's supply chain unless sourced from suppliers that are:

- Publicly committed to Forest Stewardship Council (FSC) certification of all their logging operations and tenures and actively engaged in becoming FSC certified (see p. 19 for a description of the FSC);
- Publicly committed to and active in deferring logging in areas containing Endangered Forest values in their tenures, supporting mapping of these ecological values, and advocating permanent legal protection for these areas;
- Supporting policy and legislative change that is consistent with the FSC National Boreal Standard; *and*
- Signatories implementing the Boreal Forest Conservation Framework or the British Columbia operations of companies in the Great Bear Rainforest's Joint Solutions Project.

2 Eliminate Canadian Boreal forest products in your company's supply chain from operations or suppliers that do not have the the prior informed consent of elected and traditional leadership of Aboriginal Peoples on whose traditional territory logging is taking place.

FOREST AND PAPER PRODUCTS GENERALLY:

3 Work with ForestEthics to establish strategies, benchmarks and timelines to identify and then eliminate Endangered Forest and controversial products and suppliers from your company's supply chain.

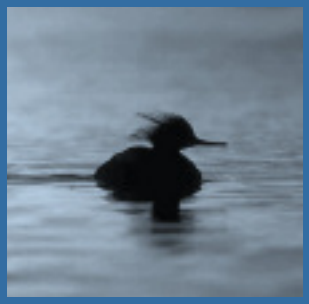
4 Work with ForestEthics and other environmental organizations to identify environmentally responsible wood and paper products including those with recycled, agricultural residue and FSC certified fibers.

5 Adopt the goals, recommendations and best practices described in the "Common Vision for Transforming the Paper Industry" and identify efficiency and savings measures to reduce overall fiber consumption. See **www.environmentalpaper.org**

Stuart Elgie

About This Report

Wayne Sawchuk



Bringing Down the Boreal is an introduction to the Canadian Boreal forest, the threats it faces from logging and options for its conservation. ForestEthics has undertaken research to extract relevant market data on Canadian Boreal forest products and the supply chain from the forest to the U.S. market. *Bringing Down the Boreal* reveals the international market context of the Canadian Boreal and its links to consumers in the United States.

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This report is a resource and a guide to both encourage and challenge consumers to be part of the conservation solution.

PART 1 introduces you to the boreal ecosystem, indigenous peoples of the Canadian Boreal and the threats facing them, particularly from logging.

In PART 2 we identify the sectors and some of the products that contain Endangered Canadian Boreal fibers and provide information on the primary logging companies so that producers and consumers can initiate a supply chain audit to see if their wood and paper sources implicate them in the controversial and destructive logging practices predominant across the Boreal.

PART 3 describes opportunities for moving beyond the status quo and outlines practical solutions and alternatives for maintaining key environmental and cultural values of the Boreal.

Part One

THE BOREAL FOREST:
Global Importance, Indigenous Peoples, Threats

The Global Importance of the Boreal

The Canadian Boreal forest is an ecological gem, a refuge of wilderness in a world where more than three-quarters of all original forests are have been lost or degraded.[2] It stretches from Alaska to the Atlantic across an area more than twelve times the size of California. About two-thirds of this landscape is intact, undisturbed by roads or industry. The Canadian Boreal contains 25 percent of the Earth's remaining intact forest and is, along with the Amazon and Russian taiga, one of the three largest intact forest landscapes remaining on Earth. Because these values are so rare (see page 18) on a global scale, the Boreal is an Endangered Forest region. The Boreal's size and intactness are matched by its value as habitat for wide-ranging species such as the grizzly bear, wolf and woodland caribou; its global significance for migratory birds; the abundance of other species such as pine marten, wolverine and moose and the diverse array of insects, lichen and fungi.[3]

The global climate depends on a healthy boreal ecosystem.

The boreal landscape forms a "green halo" circling the northern part of the Earth. It is the product of ten thousand years of post-glacial evolution that has produced a vast mosaic of wetlands, forests, rivers and lakes. While extreme cold produces some elements of the ecosystem, natural fires occur in boreal forest stands at intervals up to 350 years or longer, often affecting half a million acres or larger in a single burn. The boreal ecosystem is adapted to periodic burns as a rejuvenating process that happens in a patchwork, alternating across the landscape.

The Boreal Helps Regulate Global Climate

The global climate depends on a healthy boreal ecosystem. The soils, peat bogs and trees of boreal ecosystems store an enormous amount of carbon, keeping it from release into the atmosphere as carbon dioxide or methane, two gases that are causing human-induced global warming.[4] Regionally and locally, the forests provide protection for water-dominated ecosystems such as the vast wetlands and the more than a million pristine lakes that dot the Canadian Boreal landscape. They also protect important nutrient cycling and food sources for animals and people alike.

The Boreal Is Critical Habitat for Hundreds of Species

The Boreal is home to numerous species in a world where the great predators and charismatic mammals are being driven to extinction because of human pressures on their habitat. Mammals such as woodland caribou, wolves, wolverine, pine marten and many others range across the wild expanse of the Boreal forest. These species need large areas to survive and many require old-growth habitat.

Woodland caribou, pine marten, and wolverine in particular are threatened by industrial development. Species like these require old-growth habitat for shelter, food and breeding grounds. According to the Canadian Parks and Wilderness Society "Woodland caribou have steadily retreated across Canada over the last century as logging operations have moved northward."[5]

Boreal Old-Growth Forest

Although the ages of some boreal larch and black spruce trees have been found to exceed 350 years, the unifying feature of Canada's boreal's old-growth is generally not age *per se*, ...but the set of structural characteristics shared by many forest types in the later stages of succession. Relative to younger stages, old stands have trees of many ages and sizes and often have more large canopy trees, large snags, and large downed logs. Overall, structural diversity is highest in old stands, and this is reflected in unique plant and animal communities as well as high overall species richness relative to younger stands.

Because of their high structural and functional diversity, old-growth or late seral forests provide some of the highest quality habitat available. Structural attributes such as large snags and logs, and buried wood in various stages of decay, provide niches for a host of invertebrate species and cavity-requiring birds and mammals and processes such as bacterial nitrogen-fixing in logs. An abundance of decaying organic matter in some old-growth forests fuels detritus food webs involving arthropods and other invertebrates, fungi, bacteria, and their predators.

Many rare, uncommon or threatened species—such as bay-breasted, Cape May, and black-throated green warblers, winter wren, brown creeper, woodland caribou, grizzly bear, northern long-eared bat, and flying squirrel—are habitat "specialists" and attain highest abundance in the habitat provided by old-growth. Streams traversing old-growth forests typically provide optimal fish habitat due to in-stream structure and high water quality, and thereby provide both healthy fisheries and high quality water for human users downstream.

— Peter Lee, National Coordinator
Global Forest Watch Canada

boreal science

Billions of Birds Depend on the Boreal

For the millions of North Americans that look forward to the annual spring migration of birds, the Boreal is the one of the world's most important ecosystems.[6] Billions of migratory birds breed in the Boreal. Many of those are in decline, especially where old-growth habitats of the Boreal are cut and roaded. Approximately 40 percent of all North American waterfowl, a great number of which grace U.S. lakes and wetlands during the winter and migration, breed in the Boreal.[7]

A recent report by Bird Studies Canada also found that almost one-third of all North American 'landbirds'* breed in the boreal region, including owls, thrushes, sparrows, warblers, finches, woodpeckers, grouse, eagles, and fly-catchers; and that seventeen percent of birds visiting bird feeders in the United States each winter depend on the Canadian Boreal forest for breeding habitat. In all, there are over 300 regularly occurring bird species in the Canadian Boreal.[8]

The Boreal Is a Land of Lakes and Wetlands

Unlike many other forest ecosystems, the boreal forest is rich in aquatic habitats. There are estimated to be 1.5 million lakes across the Canadian Boreal.[9] There are also numerous rivers that traverse the forest providing rich riparian habitat. Wetlands comprise twenty percent of Canada's Boreal region and include swamps, marshes, bogs and fens.[10] The regions that are so rich in wetlands, lakes and rivers are highly valuable wildlife habitat. The western boreal zone alone is the breeding ground for one million to four million each of scaup, scoters, mallards, American wigeon and green-winged teal, as well as significant summer residents of almost twenty other species of waterfowl.[11]

** Landbirds include sparrows, thrushes, finches, waxwings, warblers, woodpeckers, grouse, and others and exclude waterfowl (i.e., ducks and geese), pelagic birds (i.e., sea birds such as petrels and albatrosses), and shorebirds.*

Indigenous Peoples, Indigenous Forests

"...the forestry regime and the industry it serves are causing havoc with our way of life, seriously harming the environment and ignoring our constitutional rights. Things simply can not continue as they have... There must be dramatic and immediate change. The boreal forest is in peril. Our way of life is threatened."

— Romeo Saganash, Grand Council of the Cree, August 2001

Aboriginal Peoples are the primary inhabitants of the Boreal forest region. An estimated one million people live in more than 600 First Nations communities across Boreal Canada.[12] Many rely on traditional use of the land for their livelihood. Over the millennia, Aboriginal Peoples have been stewards of the land and have developed valuable knowledge and cultures that provide a key basis for sustainable development and conservation in the Boreal. The Boreal presents Canada and the customers of Canadian products the opportunity to acknowledge and respect the leadership role of Aboriginal Peoples in achieving conservation and sustainable development within their traditional territories.

The public and private lands of Canada have consumed the traditional territories of Aboriginal Peoples. Throughout most of the Boreal region, historic treaties and modern land claims outlining Aboriginal and treaty rights were established or are in litigation. To date, however, there has been a lack of meaningful consultation or involvement of Aboriginal Peoples in the decision-making processes that govern forest management on their traditional and treaty lands. Too often, resource companies and governments have pushed through development, heedless of the long-term impacts on Aboriginal Peoples, their rights and the environment.

There have been numerous legal challenges and efforts by Aboriginal Peoples to retain their identity, to have their rights respected, to equitably share benefits and to conserve the ecosystems upon which they rely. There has been an absence of an effective response to these efforts, and worse, there have been severe cultural, social, economic and health impacts on many Aboriginal Peoples and communities. Acknowledging and respecting the leadership role of Aboriginal Peoples in achieving conservation and sustainable development is absolutely essential for changing the status quo and realizing conservation of the Boreal region.

Grassy Narrows First Nation—Taking a Stand

The Grassy Narrows First Nation in Ontario has suffered dramatic impacts from logging in its traditional territory and has a painful history of disenfranchisement. Decades of logging have resulted in the loss of all but six percent of the old-growth forests in their territory. Clearcutting of trap lines (traditional trapping areas) has caused cultural losses and economic hardship. The community is a leading voice in changing the status quo and actively opposing further degradation of their rights, culture and lands.

Christian Peacemakers Team

"In 1972 we were shocked to find out that our fresh water was contaminated with mercury that was dumped from a paper mill 320 kilometers upstream. We have lived with the negative effects since then: mercury poisoning which has produced various health problems, loss of traditional food and harvesting, the loss of commercial fishing, and the loss of self esteem within the family circle. Grassy Narrows received compensation in the 1980's from the Reed Paper Company and the Federal government.

Our community is increasingly surrounded by clear cuts; and despite our fight to stop clear cutting activities, we are not being heard. This issue has been ongoing as far back as late 1993. Associated with the actual impact of removing the trees are the other effects such as oil spills, garbage, use of herbicides, etc. Also hundreds of trees are commonly cut, piled and abandoned.

The issue of the 1990's is the further erosion of our culture by eradication of the last remaining areas of old-growth forests within our Traditional Land Use Area. This area lies outside of our 14 square mile reserve. It has sustained us and our culture for thousands of years. The liquidation of the forest will restrict our culture and traditional activities and even eliminate many aspects of it (berry picking, hunting, trapping, medicine gathering).

OUR CONCERNS ARE FOR THE HEALTH OF THE PLANET AND THE SURVIVAL OF OUR CULTURE.

Signed,
The Grassy Narrows Environmental Group"
For more information, visit www.friendsofgrassynarrows.com

Threats to The Boreal Forest

"There is ample evidence to show that 'current' forest use and management practices are destroying our legacy, that we are cutting too many trees over too large an area and that our forest policies have been ill-advised. Yet, on paper at least, Canada has an enlightened, sustainable forest policy."

—- *Competing Realities: The Boreal Forest at Risk*, Canadian Senate Subcommittee on the Boreal Forest, 1999

Industrial development—primarily logging, oil and gas development, mining and hydro-electric projects—is causing serious decline of the forest ecosystem including plant and animal species. Seismic lines for oil and gas development cut through the forest, hydro-electric projects flood valleys leaching previously inert mercury into water courses, while logging in the Canadian Boreal clears over a million acres of forest a year and roads are built for industrial access.

Northern Images by Wayne Sawchuk

Nearly all of the Canadian Boreal forest is publicly owned (known as 'Crown Land') and controlled by provincial and territorial governments. The only national examination of the Canadian Boreal—"Competing Realities: The Boreal Forest at Risk" by the Canadian Senate Subcommittee on the Boreal Forest—confirmed that current forest practices are unsustainable and "destroying our legacy." More than 30 percent of the Boreal landscape, most of the southern Boreal, representing the vast majority of economically viable forest for the logging industry, has already been allocated to industrial logging and pulp companies in long term timber licenses called "tenures." With excessive mill capacity helping to drive ecologically unsustainable harvest rates in many areas, some companies are now eyeing the intact, unallocated northern Boreal as a new source for fiber. And yet, only about eight percent of the Boreal landscape is legally protected. Below we bring together studies by forest scientists, ecologists and registered professional foresters to describe what is happening, on the ground, as a result of unsustainable logging practices.

Logging Practices: Clearcutting It All Away

Clearcutting, the practice of removing virtually all the trees in the prescribed block, is the method for 90 percent of the logging in the Canadian Boreal. Single clearcuts have been documented recently exceeding 17,000 football fields in size. A Sierra Legal Defense Fund and Earthroots review of logging approvals in Ontario between 1998 and 2000 documented that in 70 percent of the tenures investigated the Ontario Ministry of Natural Resources approved forest management plans with clearcuts regularly exceeding the regulatory 625 acre limit.[13]

Many logging companies over harvest and target late seral or "old-growth" forests at levels that are not sustainable.[14] They often base such practices on the antiquated and scientifically unjustified theory of "Sustained Yield." Industry spokespeople justify large clearcuts as emulating natural disturbance, usually fire. In fact, clearcuts not only reduce the forest to a single age class, but remove many crucial differences across the landscape[15] and therefore reduce biodiversity (see page 6). In many parts of the Boreal, current logging practices also lead to drastic changes in forest composition and, in this way, further degrade habitat and other forest values.[16]

Forest Clearing and Fragmentation Cause Habitat Loss and Ecosystem Breakdown

Assessing the impacts of logging activities must be placed in the context of the cumulative historical industrial alteration of the landscape. The cumulative impacts of roads and industrial activities are devastating to many species. When wilderness becomes a checkerboard of clearcuts criss-crossed with roads, the forested sections become like isolated islands, exposing forest interior species to predation and parasitism. These islands have limited capacity to support old-growth dependent species. For example, logging old-growth increases access and younger forest stands. This brings deer and moose into the younger forest thus attracting wolves into areas where previously isolated caribou become prey. Across the Boreal forest, scientists have found that as logging moves into and fragments caribou habitat, caribou herds become increasingly smaller and then disappear altogether. [17]

Many logging companies over harvest and target late seral or "old-growth" forests at levels that are not sustainable.

Fragmentation is perhaps most damaging in riparian ecosystems. Logging riparian forests can seriously interrupt the seasonal movements of animals such as marten, grizzly bear and caribou.[18] Damaging or removing the regulatory role of riparian forests in both the water and photosynthetic energy systems has had serious negative consequences for indigenous economies and ways of life. Many traditional wild rice harvesting areas of Aboriginal Peoples have literally dried up, while principal areas for gathering medicinal plants, collecting food from the land and trapping have vanished.[19]

Carbon Storage and the Global Climate

Boreal regions, principally large areas of Canada, Russia, Finland, Sweden, Norway and Alaska, accumulate and store large amounts of carbon due to slow decomposition and relatively greater net primary production.[20] In lakes, peatlands and wetlands this results from anaerobic, or non-oxidizing, conditions, while the woody matter of plants and the slow decomposition process of litter are the principal storage mechanisms of forests.[21]

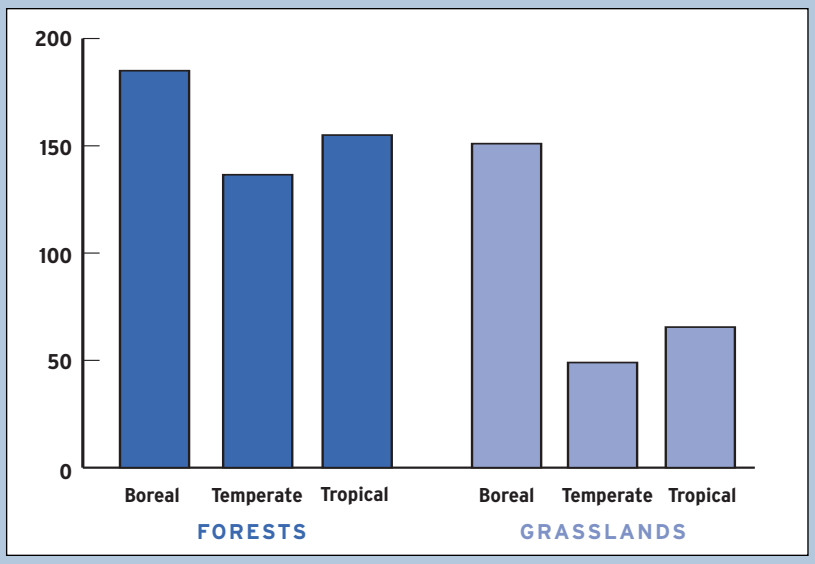
Of the total terrestrial carbon storage on the planet, boreal regions sequester approximately one third, or 830 gigatons (Gt.). Of that, 64 Gt. are stored in forests and other terrestrial vegetation, 247—286 GT are stored in soils, and an additional 120 Gt. are stored as sediments in lakes.[22] Over the long-term, boreal regions have served to significantly decrease carbon in the atmosphere.

However, changes in net primary production rates or decomposition rates due to human-induced climate change can alter the carbon budget of boreal regions drastically.[23] In addition, the interplay between carbon storage and cyclic balances of carbon dioxide (CO_2) and methane (CH_4) can have important effects on the carbon cycle.[24]

Road-building, forest harvesting and other industrial activities release significant amounts of carbon that these forests contain. According to a study prepared for the Sierra Club of Canada, "the opening of new areas to forest management may have large impacts on Canada's greenhouse gas emissions."[25]

The chart below depicts the average mean carbon storage of different ecosystems worldwide.[26] As the chart demonstrates, boreal forests hold the greatest amount of carbon of any terrestrial ecosystem per unit area.

MEAN CARBON STORAGE (TONS OF CARBON PER HECTARE)



Climate Change—Unlocking the Storehouse

Boreal ecosystems play a major role in regulating the climate. The boreal forest is the world's largest terrestrial storehouse of carbon, a key regulator of the world's climate. Although the trees themselves hold a great deal of carbon, the soils, peat bogs and detritus of the boreal forest are exceptionally good at storing carbon and therefore at protecting the world from human-induced global warming.

The cycle of carbon release is exacerbated as global warming increases forest fires and melting of the permafrost in the increasingly less resilient ecosystems. Poor management affects how much carbon remains stored and undermines an irreplaceable asset in an era of global climate change.

Canadian Federal and Provincial Governments Subsidize the Destruction

There are direct and indirect subsidies to the logging and pulp industry in Canada. Direct subsides include cash handouts, tax write-offs (e.g., for high impact activities such as road building) and below market value stumpage rates. Indirect subsidies include lax regulations, and lack of full cost accounting for impacts. The Canadian system of stumpage—the fee that logging companies pay the government for the wood they log from public lands—is often set below the fair market value of the wood. This makes areas that would otherwise be unprofitable to log marginally to very profitable.

Cortesi/ForestEthics

Boreal Logging Case Study

Ian McAlister/Raincoast.org

John Kormendy

Northern Images by Wayne Sawchuk

WELDWOOD/INTERNATIONAL PAPER

An Example of Irresponsible Forest Management Found Across the Boreal

The Little Smoky Endangered Forest is part of one of the most extensive and least disturbed wildlife habitats remaining in Alberta's Rocky Mountain Foothills. Less than two percent of the Foothills Ecoregion is protected in legislated protected areas. The Little Smoky Endangered Forest contains a wonderful diversity of pine, spruce and mixed-wood forest of all ages, including old-growth. Its valleys have some of the most extensive and productive riparian woodland habitat in the Upper Foothills. The area is adjacent to the magnificent Jasper National Park and contains key intact forest areas. Woodland caribou, grizzly bear, cougar, wolf, wolverine, fisher, marten, moose, elk, and deer still roam freely in this area, and its rivers and streams provide key habitat for a diversity of fish including bull trout, arctic grayling and mountain whitefish.

A significant part of the Little Smoky Endangered Forest falls within the Weldwood Hinton Forest Management Area (FMA). The FMA is about 2.5 million acres in size and licensed to Weldwood of Canada Limited, a wholly owned subsidiary of International Paper. While much of the Weldwood FMA is fragmented by roads, clearcuts and other industrial features, the Little Smoky contains a cluster of key ecological values that need full protection. Despite objections by conservationists and tourism businesses that utilize the area and contrary to a precautionary approach and to best available scientific knowledge, Weldwood continues to fragment and clearcut the Little Smoky and to degrade the remaining natural forests outside it, converting them to homogeneous stands. Their plans show a significant reduction in older and old-growth forest in their FMA (in some cases a 65% loss). The woodland caribou herd in Weldwood's FMA has declined by 20 percent over 20 years and Weldwood's plans for continued logging threaten its very existence. Weldwood turns this native forest into dimensional lumber and bleached kraft pulp—much of it destined for U.S. markets.

Part Two

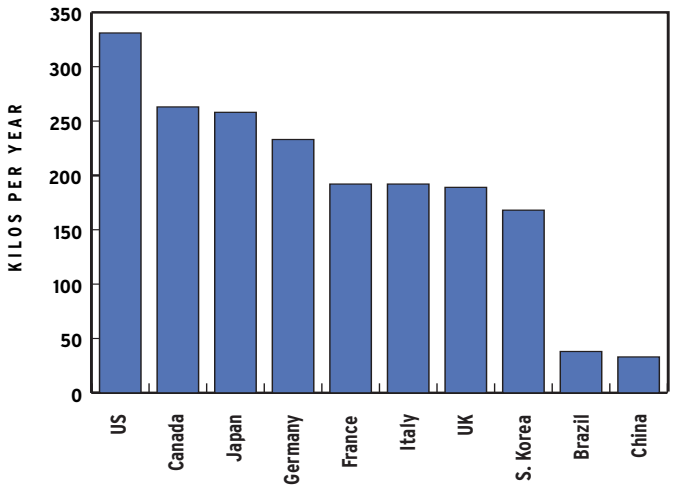
U.S. CONSUMPTION OF BOREAL PRODUCTS

As the Boreal forest increasingly captures the public eye, companies are finding themselves in the midst of an international environmental controversy. Whether it is catalog companies, printers, home builders or office supply retailers, customers of forest products often do not know the forests from which their paper and wood is sourced, nor the ecological impacts of the paper and wood products they are buying. They are at different points along a supply chain in which there is very little transparency and poor tracking systems. Because there is a frequent, if sometimes hidden, connection between forest products, unsustainable forest management and the degradation of key ecological or Endangered Forest values, consumers need to be proactive in order have certainty about their supply chain. Table 1 (p. 12-13) will help consumer companies to identify suppliers and products linked to Endangered Boreal Forests in their supply chain. Buying from the logging companies listed could mean your company is associated with controversial and destructive practices.

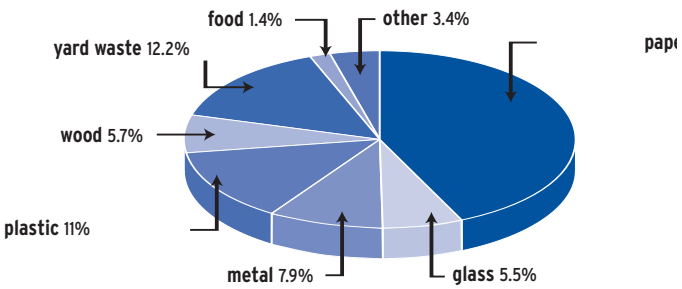
Both in terms of use per person and total consumption, Americans use more paper than any other nation.

Despite most Americans' desire to protect wilderness, old-growth forests and other important ecosystems, our consumption of wood and paper products endangers these places. Both in terms of use per person and total consumption, Americans use more paper than any other nation (see chart). Catalogs, junk mail, magazines, books, newspapers, packaging retail inserts and disposable products like tissues all demand an enormous

PER-CAPITA PAPER CONSUMPTION BY THE TOP TEN PAPER CONSUMING COUNTRIES



U.S. MUNICIPAL SOLID WASTE BY MATERIAL 2001



MAJOR COMPANIES OPERATING IN THE CANADIAN BOREAL (TABLE 1)

COMPANY	PROVINCES	BOREAL PUBLIC LAND LICENSE (million hectares)	ANNUAL BOREAL TIMBER HARVEST (million cubic meters)	KEY PRODUCTS	FSC† CERTIFIED AREA (in Canada only)
Abitibi-Consolidated	BC, NF, ON, QC	22.0	13.6	Newsprint, catalog and magazine papers, book paper, lumber, pulp	0
Weyerhaeuser Co.	AB, BC, NB, ON, SK	11.0	10.2	Copy paper, lumber, other printing and writing papers	0
Bowater	NB, ON, QC	13.0	6.4	Newsprint, book paper, catalog and magazine paper, market pulp, lumber	0
Tolko	AB, BC, MB	16.0	5.0	Market pulp, lumber, OSB	0
Kruger	BC, NF, ON, QC	5.0	2.7 ****	Catalog and magazine papers, disposables, newsprint, lumber	0
Louisiana Pacific	BC, MB, ON, QC	25.0	3.4	OSB, lumber	0
Canfor Corporation*	AB, BC	15.0	2.9	Lumber, market pulp, chips	0
Buchanan Industries**	ON	3.0	2.5	Lumber, chips	0
International Paper (Weldwood, Sunpine)	BC, AB	3.0	2.0	Copy paper, catalog and magazine papers, book paper, lumber, pulp, packaging	0
Uniforêt	QC	4.0	1.8	Lumber, chips	0
Kimberly-Clark	NS, ON	2.0	1.8	Pulp and disposable paper products	0
Daishowa Marubeni	AB	7.0	1.4	Pulp and disposable paper products	0
Millar Western	AB, SK	3.0	1.1	Lumber, pulp, chips	0
Fraser Papers/ Nexfor/Norbord ***	NB, ON, QC	7.3	1.7	Catalog and magazine papers, market pulp, other papers, panelboards, and lumber	0

BOREAL FOREST CONSERVATION FRAMEWORK SIGNATORIES (TABLE 2)

COMPANY	PROVINCES	BOREAL PUBLIC LAND LICENSE (million hectares)	ANNUAL BOREAL TIMBER HARVEST (million cubic meters)	KEY PRODUCTS	FSC † CERTIFIED AREA (in Canada only)
Alberta Pacific	AB	6.0	2.6	Market pulp	0 (but see notes)
Domtar Inc.	BC, ON, QC	9.0	6.7	Catalog and magazine paper, lumber, copy paper, market pulp, specialty papers and packaging	88,521
Tembec Industries	ON, QC, BC, MB	25.0	5.2	Newsprint, catalog and magazine paper, lumber, market pulp, paperboard	6,134,686

† Forest Stewardship Council (FSC) is the only forest certification system that is verifiably performance-based, has widespread market acceptance, and has established credibility with the major environmental and social organizations worldwide.
* Includes Slocan Forest Products, recently merged with Canfor.
** Includes Atitokan, Long Lake, McKenzie, and Dubreuil Forest Products and Great West Timber.
*** This company is in the process of diverging into three separate, publicly traded companies.
**** Kruger also owns half of Marathon Pulp in Marathon, Ontario, which is not included in the above figure.

NOTES

Operating in Grassy Narrows First Nations territory. Logging and tenures in intact areas and Endangered Forests.

Logging and tenures in intact areas and Endangered Forests in Ontario, Saskatchewan and Alberta. Recent logging in Alberta's Little Smoky, Kakwa and planning logging in the Bighorn. Signatory & participant in the Great Bear Rainforest Joint Solutions Project.

Logging and tenures in intact areas and Endangered Forests in Ontario and Québec.

Threatening the northern region of the Chinchaga in Alberta and the Wolverine Endangered Forests, Alberta.

Logging and tenures in intact areas and Endangered Forests. Actively logging Maine River Endangered Forest and the northern peninsula of Newfoundland. Threatening the Ile Rene-Levasseur as well as the northern frontier in Québec.

Logging and tenures in intact areas and Endangered Forests.

Logging in Little Smoky Endangered Forest, Alberta and other Endangered Forests of Alberta and British Columbia. Signatory & participant in the Great Bear Rainforest Joint Solutions Project.

Logging and tenures in intact areas and Endangered Forests in Ontario.

Logging in the Little Smoky, and Bighorn Endangered Forests of Alberta.

Logging and tenures in intact areas and Endangered Forests in Québec.

One of the world's largest companies; turning old-growth forests into Kleenex brand toilet paper and facial tissue. Logging in intact areas and on the northern frontier—Endangered Forests in Ontario.

Logging and tenures in intact areas and Endangered Forests. Logging in the Chinchaga and Wolverine Wilderness, Alberta.

Logging old-growth in the Athabasca and Clearwater River valleys.

Logging and tenures in intact areas and Endangered Forests. Controversial logging at Black Duck Lake Endangered Forest, Québec.

LOGGING AND OLD-GROWTH IN THE BOREAL

- **Forestry companies preferentially select the oldest stands for harvest because these stands have the greatest tree volume and are at risk of being lost to fire or insect damage.**
- **Field studies in Alberta on forest birds, insects, and nonvascular plants have all concluded that population declines of specialist species are likely to occur if old-growth is eliminated from the landscape. Other species that are not restricted to old-growth, but have their highest abundance in it, will also be affected.**
- **Finnish and Scandinavian forests, where old-growth stands have been greatly reduced, provide evidence that concerns about old-growth species are well founded. Overall, it is estimated that forestry operations in these countries have resulted in the decline of many hundreds of species.**

– Richard Schneider
Director, Boreal Research Centre
Alberta, Canada

GARTH LENZ

NOTES

Actively pursuing FSC certification as well as alternative fibers for their pulp mill. Signatory to the Boreal Forest Conservation Framework.

Promised to pursue FSC certification throughout Canada. Signatory to the Boreal Forest Conservation Framework.

Pursuing FSC and working with stakeholders on an adequate protected area strategy for their source regions. Signatory to the Boreal Forest Conservation Framework.

amount of paper, encouraging logging and paper companies to go further and further into the wilderness in search of fiber.

According to the U.S. EPA, paper makes up the single largest item in household waste going to landfills and incinerators – almost three times as much as the next largest material (see pie chart page 11).[27] Wood for housing construction in the United States creates pressure on forests: "In the last 3 decades, the average American house size has increased, while the number of people in a household has decreased; the average floor areas per person rose from 427 to 726 square feet, or 77 percent."[28] And yet many solutions exist to maintain our standard of living while decreasing the amount of wood we use to build our homes. (For resources, visit www.nrdc.org/cities/building)

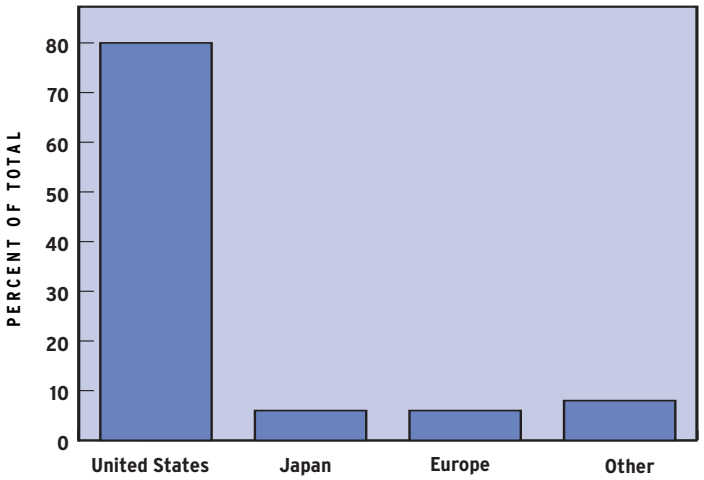
Boreal Forest Products

Catalogs, copy paper, lumber, newspapers, magazines, and even toilet paper are made from Canada's old-growth forests. U.S. consumption accounts for about a million acres of clearcuts in the Canadian Boreal every year. The United States dwarfs all other export markets for Canadian, particularly Boreal, forest and paper products. In 2002, 80 percent of Canada's forest product exports—from paper to lumber—went to the United States (see chart at right).[29] Internally, Canada consumes a considerable proportion of the forest products, exporting approximately 70 percent of its lumber, 46 percent of its pulp, 87 percent of newsprint and more than 66 percent of its paper.[30] Even given the internal Canadian consumption, U.S. consumers account for more than half of all Canadian Boreal wood and paper production.

Printing and Writing Paper

Printing and writing papers are one the largest end-uses of paper products including copy, book, junk mail, magazine and catalog paper.

CANADIAN FOREST AND PAPER PRODUCTS EXPORTS, BY REGION

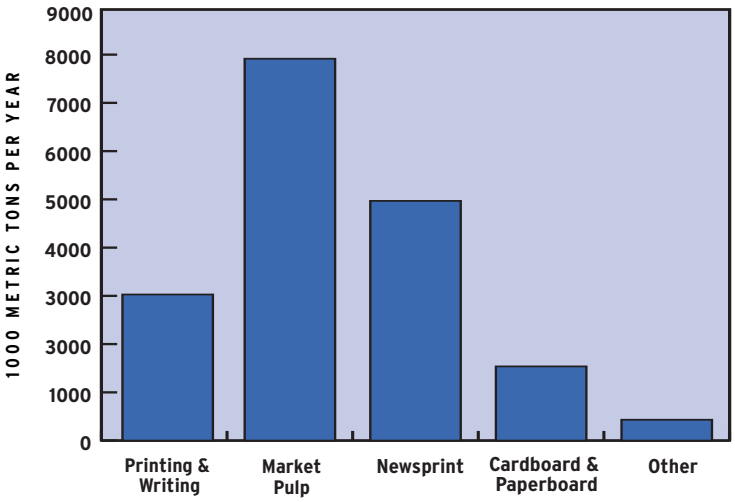


Many are made from Endangered Boreal fibers. The Canadian Boreal region has the capacity to generate 16.7 million metric tons of pulp and paper per year—almost ten percent of world-wide production and more than twenty percent of North America's total production.[31] While only 16 mills actually located in the Boreal manufacture printing and writing products directly, many mills in more southern regions of Canada and the United States use boreal raw materials in the form of market pulp (see Market Pulp section below). As the chart on page 15 indicates,"printing and writing" papers include a range of everyday products. The good news is that every American citizen and company can therefore take action to help conserve the Boreal.

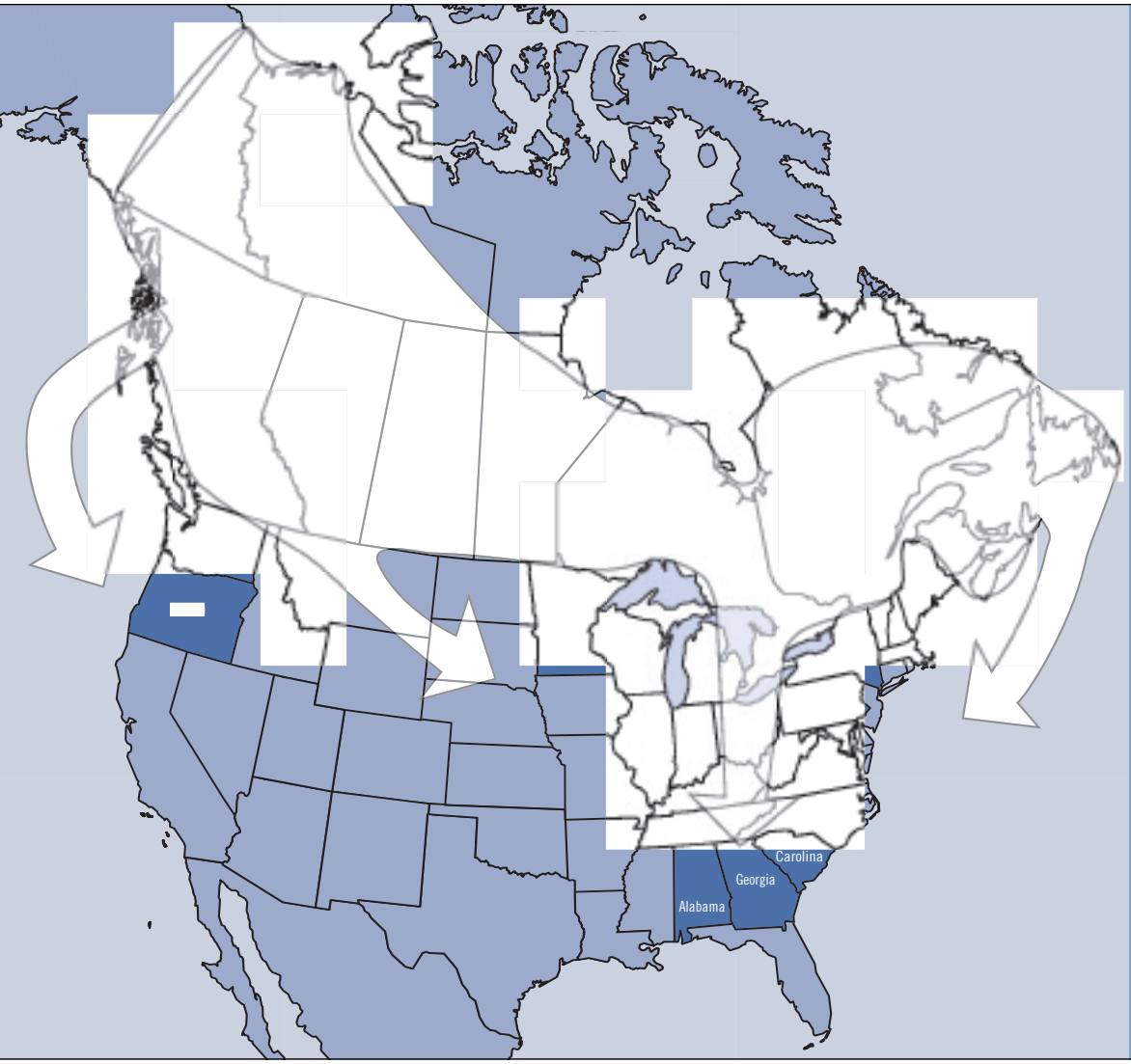
As the chart on page 15 demonstrates, printing and writing paper for the U.S. market is dominated by single-use and throw-away marketing products (catalogs, retail inserts and direct mail). Catalogs have surpassed magazines in the total fiber they consume, while junk mail (i.e., direct mail) accounts for more than ten percent of all printing demand. Retail inserts use more paper than books.

A list of mills that produce coated, supercalendared and some other papers for the printing and writing paper market and that are sourcing from Endangered Forests in the Canadian Boreal is provided in Appendix II.

PULP AND PAPER PRODUCTION IN THE CANADIAN BOREAL



Boreal Pulp in Paper that is Made in the USA



Market pulp—the raw material for paper-making—is imported from the Canadian Boreal into the United States to be made into paper products. These products include copy paper, disposable products such as tissue and toilet paper, and a wide variety of printing and writing papers for catalogs, magazines, retail inserts and junk mail.

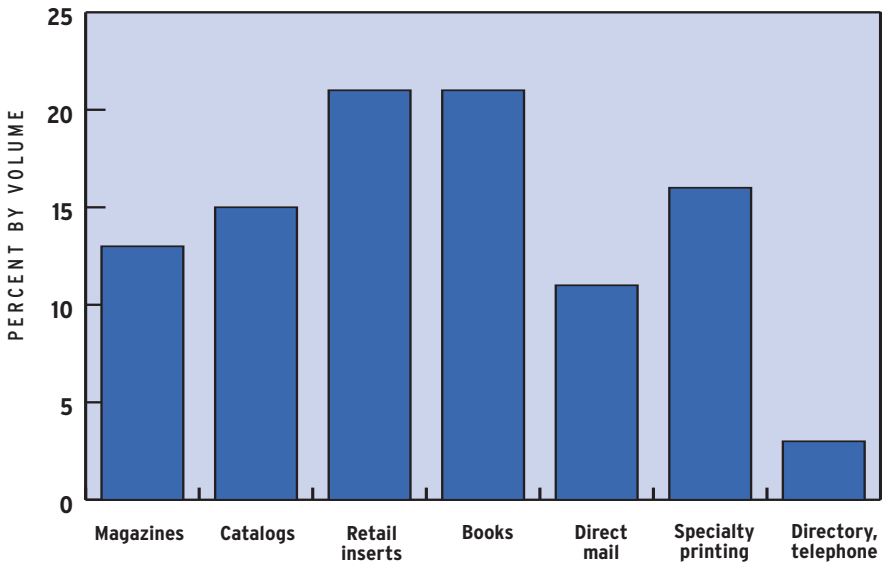
TOP STATES IMPORTING BOREAL PULP FOR USE IN U.S. PAPER MILLS

Wisconsin
Maine
Pennsylvania
New York
Minnesota
Michigan
Georgia
Alabama
Oregon
South Carolina
Washington

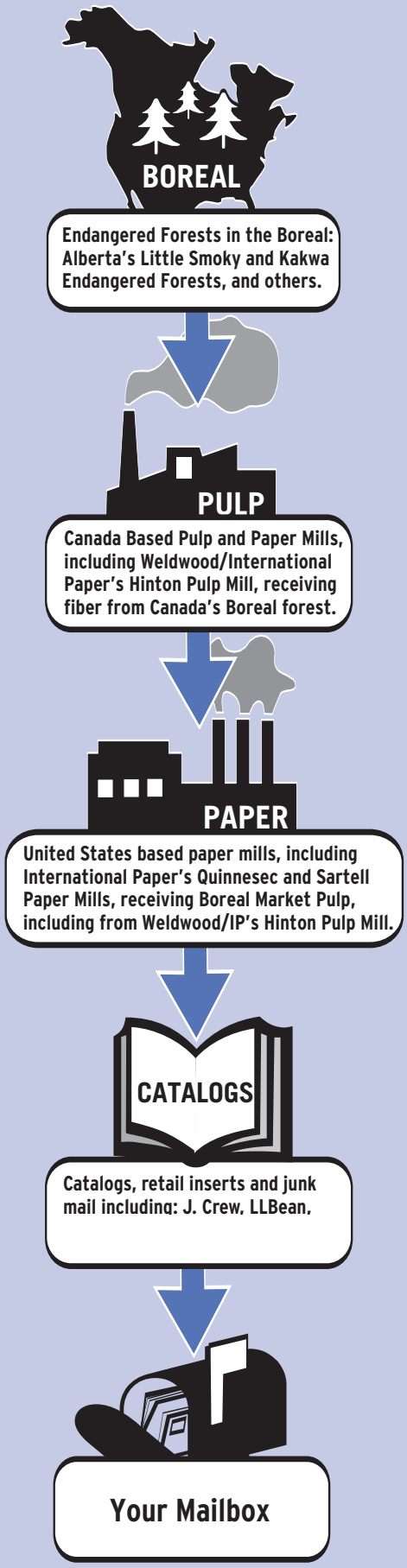
What a Waste!

Most junk mail, catalogs, newsprint, copy paper and even facial tissues and disposable diapers contain fiber from the Boreal and other Endangered Forest regions.

U.S. DEMAND FOR COMMERCIAL PRINTING BY END USE (EXCLUDES NEWSPRINT)



ENDANGERED FORESTS IN YOUR MAIL



Catalogs—A Paper Trail To the Landfill

Each year American households receive on average 200 catalogs. Less than 5 percent of these contains post-consumer recycled content. Catalogs have surpassed magazines in overall paper use in the United States, using around 3.6 million tons.[32] There are no legislative requirements for catalogs to utilize any percentage of recycled paper, such as those for newsprint in many states. According to Graphic Arts Products Tracking Research and Consulting, catalogs account for 15 percent of U.S. printing demand by volume. By contrast, telephone directories accounted for less than 5 percent and magazines around 13 percent. According to the Direct Marketing Association, catalogs have an average response rate of 2.52 percent.[33] That means that more than 97 percent of catalogs go straight into the waste stream.

Market Pulp—Raw Material for Papermaking

The Canadian Boreal is one of the world's leading suppliers of market pulp, a key raw material for paper. Capacity for production of market pulp from Canadian Boreal fiber approaches eight million tons per year, more than twenty percent of world annual production.[34] Market pulp is generally shipped south to paper mills in the United States and Canada. There the pulp is transformed into a wide range of products: printing and writing papers, disposables such as tissues and toilet paper, catalogs and other paper uses.

Market pulp is primarily produced using a *kraft*, or chemical process, or a mix of mechanical and chemical processes. The kraft process requires about twice as many trees to produce equal amounts of pulp compared to the mechanical pulping process.

A list of market pulp mills sourcing from Endangered Forests in the Canadian Boreal is provided in Appendix II.

Disposables – Boreal Forest Going Down the Toilet?

Over 7.4 million tons of tissue products (toilet paper, facial tissue, napkins and paper towels) are used in each year in the United States. Canada exports over 300,000 tons of finished tissue products and over 4 billion dollars worth of pulp, some of which is made into disposable tissue products, to the United States every year. The demand for tissue products is expected to increase in the coming years, placing additional pressure on the Boreal. Pulp suitable for tissue products is supplied by over sixty percent of the Canadian Boreal pulp producing companies and many of North America's largest tissue product manufacturers source virgin Boreal pulp. These include companies like Procter and Gamble (manufacturer of the Charmin, Puffs and Bounty line of tissue products), Kimberly-Clark (manufacturer of the Kleenex brand and the Cottonelle brand in the United States) and Scott Paper (manufacturer of the White Swan and Purex line of products and the Scotties brand in Canada).

A Better Way for Catalogs

boreal case study

There are companies pioneering a new way. In 2003, Mountain Equipment Co-op (MEC) used their buying power to improve the environmental characteristics of their catalog paper. In order to preserve the paper quality they wanted, MEC opted for maximizing recycled fiber and combining it with virgin fiber eco-certified by Forest Stewardship Council (FSC) independent auditors. (See page 19 for a description of FSC certification.) At MEC's request, a light weight coated matte paper was recently made with a combination of 35 percent post-consumer recycled, 19.8 percent FSC pulp, 7.5 percent pre-consumer recycled and 37.7 percent unverified virgin pulp. This paper is not yet free of all Endangered Forest fiber, but represents a very positive step, demonstrating how a company can reduce its environmental impact and use its purchasing power to create a previously unavailable paper type with a higher environmental standard.

Norm Thompson Outfitters (NTO), a major catalog company based in Portland Oregon, did extensive testing to see if using recycled paper would affect customer response. The finding was that there is no statistical link between recycled paper and customer response. Norm Thompson has since developed an Endangered Forest friendly policy and has made time-bound commitments to increase the recycled paper percentages in its catalogs. NTO is committed to work with conservation organizations to ensure their paper supply is Endangered Forest free and sourced sustainably and responsibly.

"We are very concerned about the controversy surrounding logging in areas deemed endangered, such as the Canadian Boreal. For several years we have been committed to partnering with environmental groups, paper suppliers and our catalog colleagues in finding constructive ways to protect forests. With our new policy we are trying to take a reasonable leadership position on this complex issue. Together we all can make a positive difference."

— John Emrick, President & CEO of Norm Thompson Outfitters

Consumers across North America are literally flushing Endangered Forests down the toilet each day when they use toilet paper manufactured from Boreal pulp. Fortunately, tissue products manufactured from recycled fibers exist and are of equal quality.

Newsprint

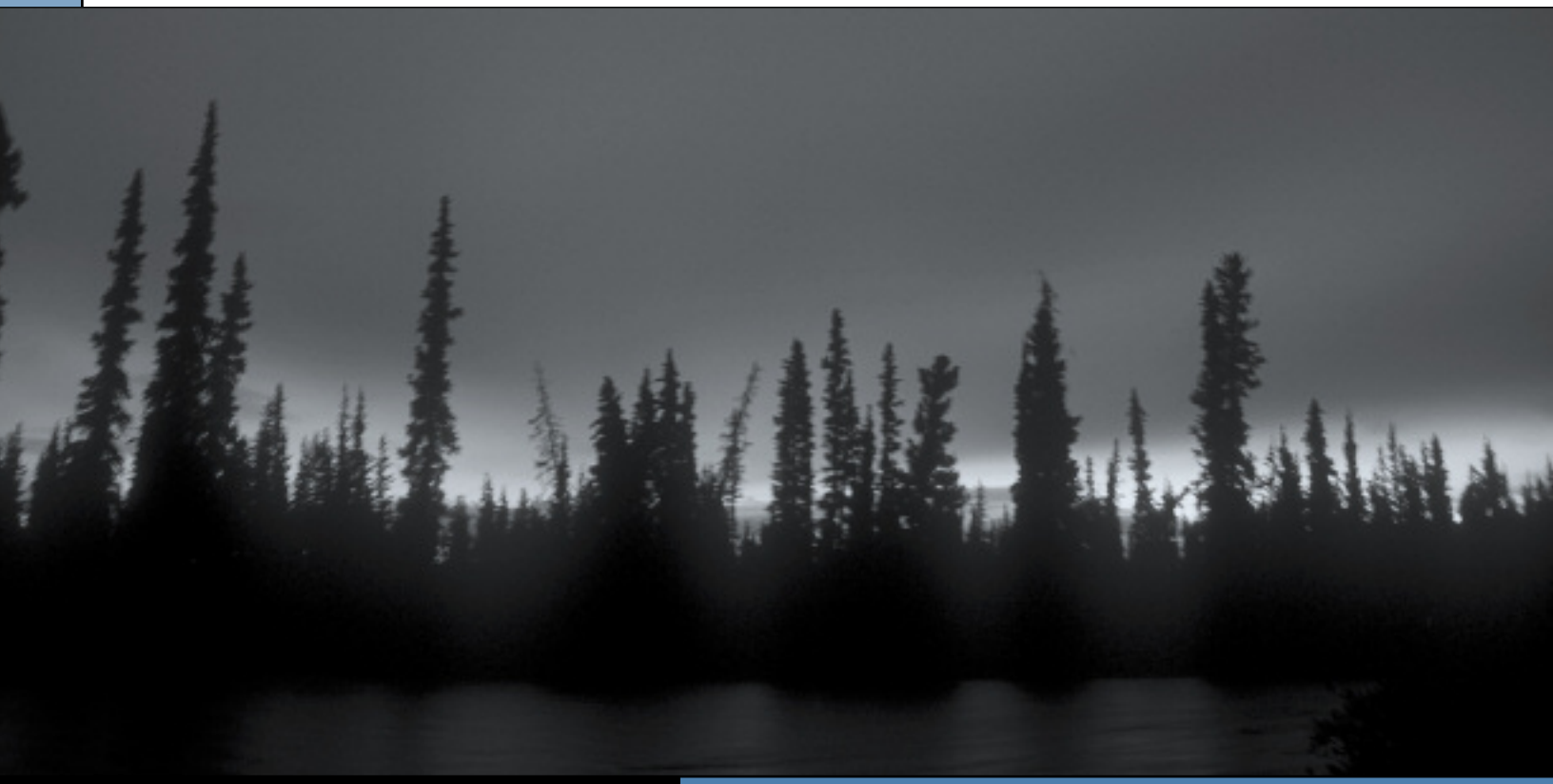
Forty-six percent of all newsprint consumed in the United States was once Canadian forest habitat—principally originating from the Boreal. It is one of the most significant products coming from the Boreal, accounting for 30 percent of the total pulp and paper production capacity in the Boreal.

The Maine River watershed of Newfoundland is being logged by Kruger to supply newsprint for papers mostly along the east coast of the United States. In Ontario, Abitibi-Consolidated is logging the Grassy Narrows First Nations' traditional territory to supply newsprint production. The Little Smoky Endangered Forest in the Alberta Foothills—home to threatened bull trout and caribou, as well as a rich array of migratory breeding birds—is being clearcut to supply the Alberta Newsprint Company.

Lumber and Other Wood Products

Sawn products account for approximately one-third of all products from the Canadian Boreal forest both in terms of volume and dollar value. Most of the production is in "SPF" dimensional lumber, or spruce, pine and fir two-by-fours and other construction grade wood. There are over a hundred sawmills throughout the boreal producing approximately 14 million board feet of sawn products (approximately 33.4 million cubic meters), enough capacity to produce nearly a quarter of U.S. demand for softwood lumber.[35]

Companies operating in the Canadian Boreal also have the capacity to produce 8,717 million square feet of panel wood products like plywood, particle board and oriented strand board (OSB), and another 47 million cubic meters of remanufactured and other wood products. The last decade has seen an explosion in the production of OSB, a substitute for plywood in many applications. OSB increases the threat to the Boreal forest since areas once considered too marginal for many applications are now being chipped for OSB.



Brian Evans

Endangered Forest Values

John Kormendy

Northern Images by Wayne Sawchuk

The identification and mapping of Endangered Forest values is an important first step in maintaining ecological values and for determining whether environmentally responsible forest management is occurring and thus whether product procurement is appropriate. The Endangered Forest approach has been developed to dovetail with other initiatives to define ecologically important forests. Endangered Forest values can be identified and mapped in any forest ecosystem around the world in order to determine areas or "Endangered Forests" where a precautionary approach should be applied by deferring logging until comprehensive conservation area design and protected area establishment are completed. Endangered Forest values include:

- Intact forest landscapes: relatively undisturbed forests where natural processes occur unimpeded. Examples: the Amazon Basin, the boreal forests of Russia and Canada, and Central Africa.
- Remnant and Restoration forests in highly altered and highly degraded ecosystems (critical and remaining native forest habitats on the Cumberland Plateau in Tennessee, roadless and relatively intact areas in U.S. National Forests such as the Tongass and the U.S. Boreal zone in northern Michigan, Wisconsin and Minnesota and in many tropical regions).
- Forests with significant biological diversity values: highly species-rich forests (e.g., tropical and some temperate forest regions), forests with many endemic species (e.g., the 'Biodiversity Hotspots') and rare forest types (e.g., temperate rainforests).
- Core habitat of focal conservation species (e.g., mountain caribou habitat in British Columbia, orangutans in Indonesia, wildlife migration corridors, wolves, woodland caribou, grizzly and wolverine habitat in the Boreal).

Environmental organizations involved in drafting Endangered Forests values include: ForestEthics, the Natural Resources Defense Council, Greenpeace, the World Resources Institute and Rainforest Action Network.

Part Three

FINDING SOLUTIONS

Finding solutions to the controversy over Canada's Boreal forest and therefore boreal forest products requires both careful study and immediate action. Comprehensive conservation area design and ecosystem based management studies are desperately needed in order to ensure that key areas are set aside from industrial development and that the logging that occurs outside them is ecologically responsible. These studies and analyses will take time. However, logging in the Boreal continues every day. How in this environment do we maintain options for future conservation and provide both the logging industry and the marketplace with the certainty that is needed in order to operate a business? We need both a long term vision and an implementation plan that identifies immediate actions that can be taken as steps towards this vision. It is for these reasons that ForestEthics is a signatory to the Boreal Forest Conservation Framework (see Appendix I) and is calling for the immediate mapping and deferral of logging in Endangered Forests.

Finding solutions to the controversy over Canada's Boreal forests and therefore boreal forest products requires both careful study and immediate action.

Identifying Endangered Forests

Endangered Forests is a term used to identify forests that are so valuable for their biological diversity, species habitat and intact landscape values that they must be protected from industrial development. It is a term developed by ForestEthics and several other environmental organizations to address requests made by companies that want to minimize the ecological impact of their purchasing decisions but have been unclear on where they should buy their wood and paper products.

Contributing to the Solution– Responsible Action in the Marketplace

Many purchasers are wary of buying products from regions like the Canadian Boreal that do not have adequate conservation safeguards. By requesting that their suppliers support the mapping of Endangered Forest values and immediately set aside the areas identified, purchasers can ensure that their supply is 'clean' and help to ensure that options for future conservation have been maintained. In areas that are not Endangered Forests it is essential that the highest standards of forest management are encouraged. It is for this reason that ForestEthics encourages companies to request products with Forest Stewardship Council (FSC) certification.

The FSC is an independent, international, multi-stakeholder forestry certification organization. It trains, accredits and monitors third-party certifiers around the world and works to establish international forest management standards. FSC is the only forest certification system that is verifiably performance-based, has widespread market

The FSC Logo identifies products which contain wood from well managed forests certified in accordance with the rules of the Forest Stewardship Council. FSC-US-0037

Green Shift in Consumer Attitudes

An increasing number of corporate wood and paper customers are demonstrating their environmental responsibility and creating certainty in their supply by shifting the source of the products they consume away from controversial sources. IBM Consulting has called this a 'Greenward Shift' in markets.[36] Over 100 major Canadian paper buyers—mostly from the publishing industry —have begun using recycled paper as a policy aimed to conserve endangered and old-growth forests. In the United States, leading paper and wood consuming companies such as Home Depot, Lowes, Kinkos, Staples and Norm Thomson Outfitters have developed and are acting on wood and paper policies and procurement commitments.

Many environmentally and socially responsible companies have already leveraged their purchasing power into Endangered Forest protection and improved forest management in places like Clayoquot Sound, the Great Bear and Inland Rainforests of British Columbia, and in the native forests of Chile. This 'Greenward Shift' is also born out by a 2002 study that found that 91% of Americans would be willing to switch products or services if they were to find out about a company's negative corporate citizenship practices.[37]

acceptance, and has established credibility with the major environmental and social organizations worldwide. In 2004, the FSC Regional Standard for the Canadian Boreal, developed by consensus by representatives from the Aboriginal, Industry, Environmental and Social constituencies, was agreed upon.

Though they bill themselves as independent certification systems, wood marketing programs such as Canadian Standards Association and the Sustainable Forestry Initiative are dominated by the forest and paper industry themselves and are unsupported by most of the the environmental community.

Paper Alternatives

Another big part of the solution for the marketplace is reducing consumption of virgin fibers. Fortunately, many papers can be produced utilizing high quantities (up to 100%) of post-consumer recycled fiber without losing quality. This was not always true, but fortunately the quality of recycled paper has been revolutionized over the last ten years, delivering papers with high performance qualities. One hundred percent post-consumer recycled paper is now available in many grades and is being run successfully on major high-speed printing presses. Printers and publishers have been delighted with its performance.

For papers that specifically require virgin fibers for tensile strength and picture quality, agricultural residue fibers—the fiber left after harvest such as wheat, straw, or flax—are an emerging option in addition to fiber from FSC certified logging

> **"Staples agrees to phase out of products coming from endangered forests including the world's last remaining old growth forests and U.S. federal public lands."**
>
> –Staples "Leadership for Healthy Forests" Procurement Policy, November 2002

operations. At least one Canadian pulp mill, Alberta Pacific Industries, is investing in an agricultural residue feasibility study and pilot project.

Environmental groups are unified in their vision of the changes needed for the paper industry to become socially and environmentally responsible. In 2002, over 80 North American non-governmental organizations came together and endorsed the "Common Vision for Transforming the Paper Industry." It urges paper-consuming companies to minimize paper consumption, eliminate fiber sources that threaten Endangered Forests, buy only from mills that adopt the cleanest production technologies, practice responsible fiber sourcing, and maximize recycled content in all the papers they buy and sell.

For copies of the "Common Vision for Transforming the Paper Industry," or more information about paper alternatives, reducing consumption of paper and other strategies, visit The Environmental Paper Network www.environmentalpaper.org

Knowing What's on Your Shelves– Chain of Custody

In order to begin to understand forest product origins, it has become incumbent on end users, as well as distributors and manufacturers, to demand transparency. This means following their supply chain back to its origin in the forest to determine whether their sources are controversial. Large purchasers can then shift away from those sources to ecologically sustainable ones and build markets for ecologically responsible alternatives. Developing an Endangered Forest policy is an effective tool for enacting this responsibility. Key to the policy is a transparent, independently verifiable "chain of custody" (from forest to final product) audit that does not just rely upon assurances from suppliers.

You can find sample chain of custody forms at www.forestethics.org/cocforms.pdf

Boreal Solutions—Aboriginal Peoples Leading the Way

Nitassinan, the Innu homeland, encompasses eastern Quebec and Labrador. The Innu, like many indigenous people around the world, are attempting to strike a balance between their traditional way of life and a modern economy. In the context of ongoing land rights negotiations with the Canadian government, the Innu are promoting a unique vision for the future of their forests. The Innu vision of an appropriate balance between the ecological, cultural and economic dimensions of the land is the basis of a new approach to sustainable forest management planning in the Boreal forest.

For more than a decade, the Innu Nation and the Government of Newfoundland and Labrador have been in negotiations concerning the vast pristine Boreal forest of *Nitassinan*. In January 2001, a Forest Process Agreement was reached between the Innu Nation and the Government of Newfoundland and Labrador. This agreement was designed to facilitate full Innu participation in forest planning within central Labrador. Now, over two years later, the parties have completed an Eco-System Based Forest Management Plan that protects the ecological composition, structure and function of these forests, together with their associated cultural values.

Innu Nation

Adapted From "Sustaining Nitassinan Forests: The Innu Nation Forest Guardians and Ecosystem-Based Forest Management in Labrador"

For more information and copies of the Booklet and planning documents, visit www.innu.ca.

Brian Evans

Northern Images by Wayne Sawchuk

John Kormendy

"Short of a miraculous transformation in the attitude of people and governments, the Earth's remaining closed canopy forests and their associated biodiversity are destined to disappear in the coming decades."

— Klaus Toepfer, Executive Director,
United Nations Environment Program, 2001.

CONCLUSION

This report reveals the pressing challenges Canada's Boreal forest faces from current logging activities and the heavy reliance of the U.S. marketplace on Boreal products. It also finds that the Boreal still contains many values that have been lost in other places and, therefore, that it offers a unique opportunity to improve upon poor land use decisions of the past. The Boreal forest, one of the largest intact forests left on the planet, presents us with a tremendous opportunity to ensure adequate protection of environmental values, ecologically sustainable forest management and the provision of ecologically sound forest products.

Conserving the Boreal forest will require concurrent action by governments, producers of forest and paper products in Canada and consumers across North America. The industrial consumer sector has to participate in significantly reducing the pressure on Endangered Forests by shifting to ecologically sound alternatives and through efficiency in paper and wood use. This dovetails with the process of identifying how much land needs to be set aside to sustain ecosystem functions and other social and environmental values and then, from there, determining where logging and development is appropriate. The final element is establishing world-leading practices (e.g. FSC) for industry in the areas where development happens.

The momentum for change is growing on both sides of the border. Hundreds of U.S. companies have committed to purchase certified forest products, recycled fibers, and to phase out Endangered Forest products. Several Canadian companies have committed to FSC certification and to identification and deferral of logging in Endangered Forests. These companies are taking action to realize the Boreal Forest Conservation Framework. Aboriginal Peoples are leading the development of culturally appropriate and ecosystem-based approaches to conservation and sustainable economy.

A recent poll on the Canadian Boreal found that eight in ten Canadians (81%) say they are concerned about the loss of wilderness forests in their province and that more than seven in ten (74%) say that wilderness areas should be protected even if it means a loss of jobs and investment. Finally, the poll showed us that we are on the right path, as more than 80% of Canadians say that industry should work with environmental groups, Aboriginal Peoples and local communities to come up with solutions for conserving Canada's Boreal ecosystem, rather than unilaterally determining their own best environmental practices.[38] Perhaps the necessary miraculous transformation in attitude has already begun.

Conserving the Boreal forest will require concurrent action by governments, producers of forest and paper products in Canada and corporate consumers across North America.

Appendix I

SUMMARY OF THE BOREAL FOREST CONSERVATION FRAMEWORK

CONTEXT:

Canada's Boreal region contains one-quarter of the world's remaining original forests. One of the largest intact forest ecosystems left on Earth, Canada's Boreal is home to a rich array of wildlife including migratory songbirds, waterfowl, bears, wolves and some of the world's largest woodland caribou herds. The Boreal region's natural wealth sustains many of Canada's aboriginal communities, who have lived in harmony with the boreal for thousands of years. It also supports thousands of jobs and contributes billions to the Canadian economy.

VISION:

The Boreal Forest Conservation Framework is based on a shared vision to sustain the ecological and cultural integrity of the Canadian Boreal forest region, in perpetuity.

GOAL:

The Framework's goal is to conserve the cultural, sustainable economic and natural values of the entire Canadian boreal region by employing the principles of conservation biology to:

- protect at least 50% of the region in a network of large interconnected protected areas, and
- support sustainable communities, world-leading ecosystem-based resource management practices and state-of-the-art stewardship practices in the remaining landscape.

The Framework represents a national vision and goal for the region as a whole, rather than a formula to be applied on a unit-by-unit basis in a particular part of the Boreal. In promoting a conservation approach for the entire Boreal, the Framework recognizes that conservation challenges and opportunities will vary from place to place.

PRINCIPLES:

The principles of the Boreal Forest Conservation Framework include:

- Maintain ecological processes which account for the overall health of the boreal forest across the full spectrum of human uses;
- Ensure sustainable economic benefits to Northern communities and the viability of commercial interests;
- Respect the lands, rights and ways of life of Aboriginal Peoples and First Nations;
- Achieve optimal additional environmental and social benefit from the least raw material supply, cost, and workforce adjustment impact;
- Utilize scientific knowledge, traditional knowledge, and local perspectives to achieve the conservation of natural and cultural values.

COMMITMENTS:

The partners of the Boreal Forest Conservation Framework are committed to supporting the Framework through a range of both individual and collaborative actions. These actions include but are not limited to support for and participation in:

- scientific and traditional ecological knowledge research
- land use planning
- protected areas designations
- innovative policy development supporting Framework principles
- economic incentives for sustainability in the boreal region

The Boreal Forest Conservation Framework reflects the collective wisdom of the Boreal Leadership Council and is based on the best currently available information. Over the coming months, the CBI will be working with Council members to expand Framework endorsement in a variety of sectors, generate on-the-ground examples of the Framework principles in action, and create opportunities for governments to become engaged and active participants. The CBI has also commissioned science-based research to refine the necessary levels of protection and other activities required to implement this vision.

December 1, 2003
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ForestEthics
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Poplar River First Nation
Suncor Energy Inc.
Tembec Inc.
World Wildlife Fund Canada

Appendix II

Endangered Boreal Forest Catalog and Magazine Paper Mills

MILL NAME	COMPANY	CITY	PROVINCE/ STATE	PRODUCT/PULP TYPE	TONS PER YEAR (1000 metrics tons)
Alma	Abitibi-Consolidated Inc.	Alma	QC	Catalogue paper and directory papers	34
Beaupre	Abitibi-Consolidated Inc.	Beaupre	QC	Groundwood specialty papers	214
Fort Frances	Abitibi-Consolidated Inc.	Fort Frances	QC	Uncoated groundwood grades	279
Fort Williams	Abitibi-Consolidated Inc.	Fort Williams	ON	Uncoated groundwood specialties	150
Kenogami	Abitibi-Consolidated Inc.	Jonquiere	QC	Uncoated groundwood and supercalendered grades	185
Kenora	Abitibi-Consolidated Inc.	Kenora	ON	Uncoated groundwood papers	92
Laurentide	Abitibi-Consolidated Inc.	Grand-Mere	QC	Uncoated groundwood specialty papers	384
Nuway	Bowater	Benton Harbor	MI	Coated groundwood papers	118
Dolbeau	Bowater Canada Forest Products Inc.	Dolbeau	QC	Supercalendared and uncoated groundwood papers	228
Donnaconna	Bowater Canada Forest Products Inc.	Donnaconna	QC	Supercalendared and uncoated groundwood papers	239
Thunder Bay	Bowater Canada Forest Products Inc.	Thunder Bay	ON	Uncoated groundwood papers	25
Bucksport	International Paper	Bucksport	ME	Lightweight coated papers	511
Androsgoggin	International Paper	Jay	ME	Coated and uncoated groundwood and uncoated freesheet papers	605
Quinnesec	International Paper	Quinnesec	MI	Coated freesheet papers	329
Sartell	International Paper	Sartell	MN	Coated and uncoated groundwood papers	305
Trois Rivieres	Kruger	Trois-Rivieres	QC	Groundwood papers (directory, supercalendered and coated grades)	275
Wayagamack	Kruger	Trois-Rivieres	QC	Lightweight coated papers	334

Endangered Boreal Forest Market Pulp Mills

MILL NAME	COMPANY	CITY	PROVINCE/ STATE	PRODUCT/PULP TYPE	TONS PER YEAR (1000 metrics tons)
Fort Frances	Abitibi-Consolidated Inc.	Fort Frances	QC	Kraft pulp (NBSK)	99
St. Felicien	Abitibi-Consolidated Inc.	St Felicien	QC	Kraft pulp (NBSK)	351
Thunder Bay	Bowater Canada Forest Products Inc.	Thunder Bay	ON	Kraft pulp (NBSK and NBHK)	544
Fibreco Pulp	Canfor	Taylor	BC	Pulp (BCTMP)	220
Intercontinental Pulp	Canfor	Prince George	BC	Kraft pulp (NBSK)	298
Northwood Pulp	Canfor	Prince George	BC	Kraft pulp (NBSK)	553
Prince George Pulp and Paper	Canfor	Prince George	BC	Kraft pulp (NBSK)	169
Peace River Pulp	Daishowa-Marubeni	Peace River	AB	Kraft pulp (both hardwood and softwood)	440
Fjord Cell	Fjord Cell Inc.	Jonquiere	QC	Kraft pulp (NBSK)	82
Slave Lake Pulp	Fraser Mills/West Fraser	Slave Lake	AB	Pulp (BCTMP)	210
Thurso Pulp	Fraser Papers	Thurso	QC	Kraft pulp (NBHK)	245
Hinton	Pulp International Paper/ Weldwood of Canada	Hinton	AB	Kraft pulp (NBSK)	425
Terrace Bay	Kimberly-Clark	Terrace Bay	ON	Kraft pulp (NBHK and NBSK)	485
Meadow Lake Pulp	Millar Western	Meadow Lake	SK	Pulp (BCTMP)	325
Whitecourt Pulp	Millar Western	Whitecourt	AB	Pulp (BCTMP)	285
Mackenzie Pulp	Pope and Talbot	Mackenzie	BC	Kraft pulp (NBSK)	220
Dryden Pulp and Paper	Weyerhaeuser	Dryden	ON	Kraft sulphate, papergrade and specialty pulps	300
Grand Prairie Pulp	Weyerhaeuser	Grand Prairie	AB	Kraft sulphate, papergrade and specialty pulps	340
Prince Albert Pulp and Paper	Weyerhaeuser	Prince Albert	SK	Kraft sulphate, papergrade and specialty pulps	155

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38. The findings are based on a national phone survey of 1007 Canadians in February, 2003, with a margin of error of 3.1% by McAllister Opinion Research.

Notes and Source Data for Charts and Tables

CHART "Mean Carbon Storage"
SOURCE: Matthews, Emily, et al. *Pilot Analysis of Global Ecosystems: Forest Ecosystems.* World Resources Institute. 2000.
Note: In the original table in the report the regions are listed as 'high latitude,' 'mid-latitude,' and 'low latitude' which correspond to 'boreal,' 'temperate' and 'tropical' regions respectively.

CHART "Canadian Forest Products Exports by Country"
SOURCE: Natural Resources Canada, *The State of Canada's Forests: Looking Ahead.* Ottawa. 2003.

CHART "U.S. Demand for Printing by End Use"
SOURCE: GAPTRAC, September, 2000, cited in 'Investor Presentation' by Quebecor World, September 13-14, 2001.

CHART "Total Paper Consumption by the Top Ten Consuming Countries"
SOURCE: Food and Agricultural Organization of the United Nations

CHART "U.S. Municipal Solid Waste by Material, 2001"
SOURCE U.S. EPA

CHART "Pulp and Paper Production in the Canadian Boreal"
SOURCE: These data are derived from a database of forest products manufacturing facilities of Canada at Global Forest Watch Canada. Additional data were acquired on company websites to correct for the largest facilities' changing capacities and other insufficient data from industry sources.
Nota bene: these facilities can and do change capacities, some close and new ones open up every year. We have made every effort to ensure our numbers are as close to the mark as possible given these uncertainties.

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