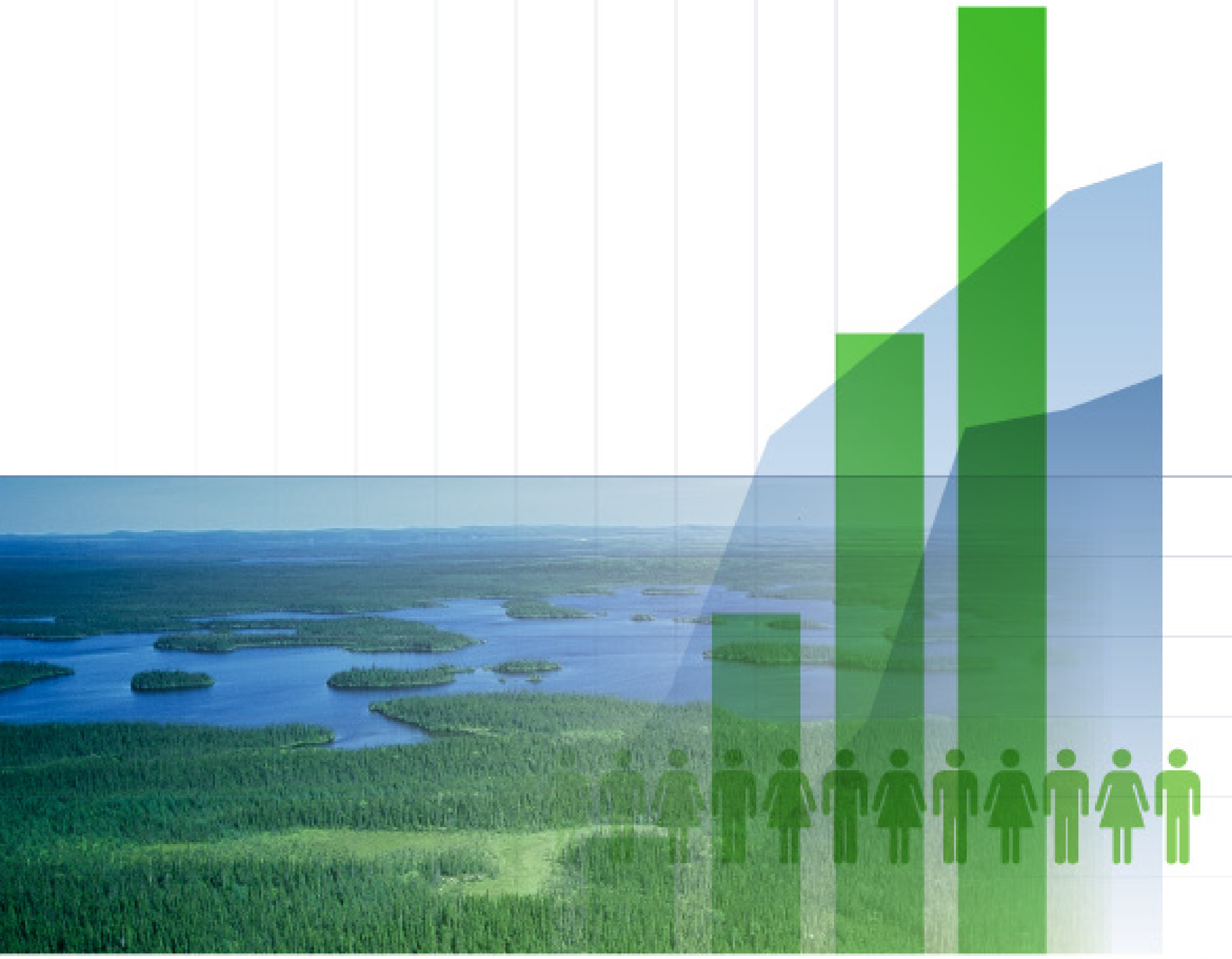

MARKETS INITIATIVE

TREND REPORT 2007

ENVIRONMENTAL LEADERSHIP IN THE PAPER SUPPLY CHAIN

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Source for graph data is Markets Initiative unless otherwise indicated.

Front cover photo: Boreal forest, northern Quebec. Photographer: Garth Lenz/CBI

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www.marketsinitiative.org
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ANCIENT FOREST FRIENDLY™

EXECUTIVE SUMMARY

NICOLE RYCROFT • EXECUTIVE DIRECTOR, MARKETS INITIATIVE

TODAY, EVER-INCREASING LEVELS of ownership concentration, financial crises and shifting market expectations are shaping the Canadian paper industry during one of its most active periods of change. While all three issues are critical to the paper industry, this report focuses on evolving market expectations and dynamics. Specifically, we have tracked the decline in market tolerance for papers containing endangered forest fibre and a growing expectation and support for environmental papers in Canadian and international markets.

The past five years have seen a steady "greenward" shift within major paper markets, in response to increasingly sophisticated, concerned and engaged paper consumers.

In only six years, 60 percent of literary publishers in Canada and 40 percent in the UK have started to shift to eco-friendly options, such as high-recycled fibre and Forest Stewardship Council (FSC) content papers. Canada's book industry sparked an international trend followed by publishers in nine other countries. Similar shifts are taking place in other sectors, including the magazine industry, the newspaper sector and catalogue manufacturing, to name a few.

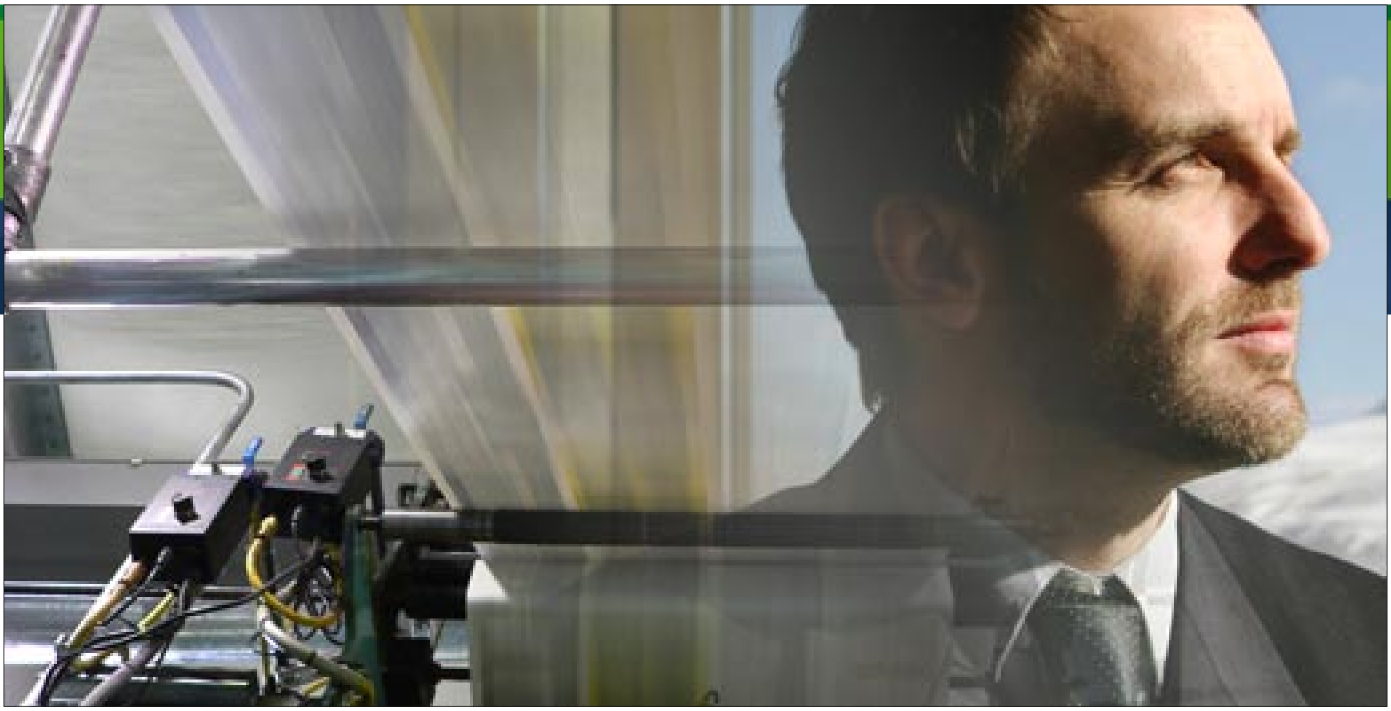
In a recently commissioned national poll, Markets Initiative found a strong positive link between publishing companies' brands and printing on environmental papers. The poll shows that the use of environmental paper significantly enhances a company's brand. The findings reveal that 94 percent of newspaper readers, particularly the 18–34 demographic, think publishers should be using environmentally friendly paper.

While eco-papers once constituted a specialized niche market for mill production, increased publisher demand for environmental products has resulted in eco-papers becoming more mainstream. Mills such as Domtar, which began with one environmental paper type, are now producing entire product lines with environmental qualities. Further, a broad range of paper producers, such as the world's second largest coated paper producer, Stora Enso, and smaller Canadian based players, such as Cascades, have been rising to the challenge of meeting the increased demand.

Over the coming years, Markets Initiative predicts that addressing climate change will be a major factor in determining new investments in paper manufacturing. The Stern Review[1] identified conservation of intact forests as a primary defense against climate change and its projected impacts on national economies and security. Consequently, low-carbon technologies, along with the conservation and protection of intact forests, have become increasingly important. Canada's Boreal forest is part of the world's largest terrestrial carbon sink. Maintaining its integrity, through large-scale area conservation and shifts to sustainable forest management systems, is recognized as critical to maintaining the stability of the global climate as well as the global economy. Low-carbon papers with high recycled content, agricultural residue fibre and FSC fibre will also become central to the CO_2 reduction plan.

The acceleration of market trends toward environmental papers experienced in the last five years will only increase given the growing concern for global warming. As a result, the production of eco-friendly paper will increasingly differentiate successful producers in the paper market. The move to eco-papers requires significant infrastructure shifts and leadership by the Canadian government, the paper and logging industries, non-governmental organizations (NGOs) and large consumers. Clearly, the end customer is ready for these shifts. Given their strong performances to date, Markets Initiative anticipates that today's niche eco-paper lines will become mainstream products for the world's large paper producers during the next three to five years.

It remains to be seen if the Canadian industry can establish itself as an environmental paper sector leader quickly enough to capture a significant share of this burgeoning paper market. ∞



DEMAND DRIVES CHANGES

HIGH-VOLUME PURCHASERS DRIVE SUPPLY TRENDS

The demand for environmental paper has increased significantly during the past five years. Three factors in particular are converging to enable this change: a building wave of global environmental concern, a growing practice of corporate social responsibility, and successful campaigns[2] focused on shifting major paper purchasers away from unsustainable practices.

More than 170 Canadian magazine and book publishers, including Canadian Geographic, McClelland & Stewart and Random House Canada, have committed to safeguarding ancient and endangered forests, and are proceeding with implementation of Ancient Forest Friendly (AFF) purchasing policies.[3] Markets Initiative has worked with book publishers for just over six years, during which time 60 percent of Canadian book publishers now print between 20 and 100 percent of their uncoated titles on Ancient Forest Friendly sheets[4] (containing a high percentage of recycled fibre).

Following Canada's lead, book publishers in both Europe and the United States are developing their own AFF purchasing policies to protect the world's ancient and endangered forests. To date, publishers responsible for 40 percent of UK publishing, including Harper Collins UK, Random House UK and Pearson UK, as well as 131 American publishers, including Random House, have committed to AFF purchasing policies.

In other sectors, industry leaders in the office supply retailer and financial services industries are taking similar steps. In November 2006, *NOW*, one of Canada's largest weekly newspapers (readership: 395,000) developed an AFF policy, indicating broad procurement changes in the newspaper industry are likely pending.

The most recent sector to join the eco-friendly paper trend is the catalogue industry. Catalogue giant Limited Brands (Victoria's Secret), agreed in December 2006 to source from environmentally friendly suppliers in a paper procurement commitment which will influence close to $100 million (US) in paper purchases annually.

The number of AFF and FSC-certified[5] sheets suitable for books and magazines has risen dramatically over the past five years, driving mills to develop these eco-friendly paper lines.

Given the most recent announcements by Victoria's Secret and *NOW* to move to eco-friendly paper, as well as anticipated future announcements, demand for Ancient Forest Friendly and FSC-certified papers will increase significantly, creating growth opportunities for mills willing to adapt to the changing marketplace. ∞

POTENTIAL READERSHIP GROWTH WITH ECO-PAPERS

Paper is a significant cost consideration in the publishing industry, second only to human resources. Managing the risk associated with the market fluctuations in price, availability and quality of paper is one of the fundamentals for profitable publishing. Recent polling indicates that paper also potentially bears the risk of reader alienation or conversely, positive branding for publishers who print on environmental papers.

The North American newspaper industry is particularly vulnerable to the vagaries of the newsprint supply market. Uncertainty stems from a 25 percent reduction in supply during the past 10 years, stagnation in quality innovation, and unstable swings in cost. In the face of declining newspaper readership, newspaper publishers have been innovative in addressing the issue of newsprint as a source of cost risk exposure by changing layout and adopting technology innovations and new media. However, publishers must consider another potential risk associated with a reliance on paper: environmental performance.

With increasing public awareness and concern about environmental issues,[6] publishers face undue risk to their brand if they publish on papers considered environmentally damaging. Polling shows that the public, especially youth, is increasingly judgmental of a publication's integrity with respect to the publisher's environmental practices.

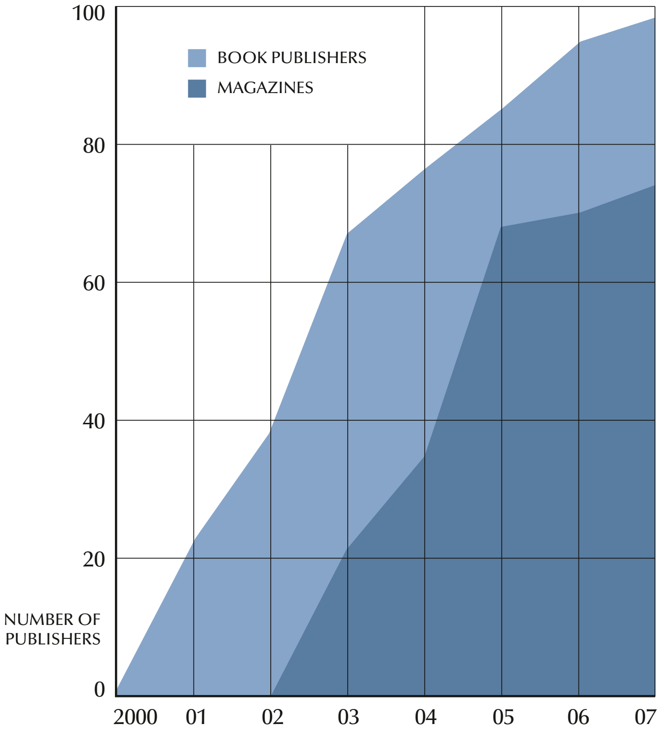
Of the reading public, newspaper readers' consumer choices are the most strongly informed by environmental considerations. As evidenced by Markets Initiative's market research through a Pollara poll[7] in late 2006, 94 percent of Canadians say newspapers should be published on environmentally friendly paper. Newspaper publishers have an opportunity to gain a competitive advantage with the influential boomer market (age 55 to 65) by publishing on environmental papers: 77% are more likely to purchase a newspaper printed on environmentally friendly paper.

Newspaper publishers also have an opportunity to develop their brand attractiveness to younger readers. Of all age groups, readers between the ages of 18 and 34 find the most brand value in environmentally friendly publishers, including book, magazine and newspaper publishers. Seven out of 10 readers in this demographic have more confidence in the integrity of a newspaper if that publisher uses environmentally friendly paper.

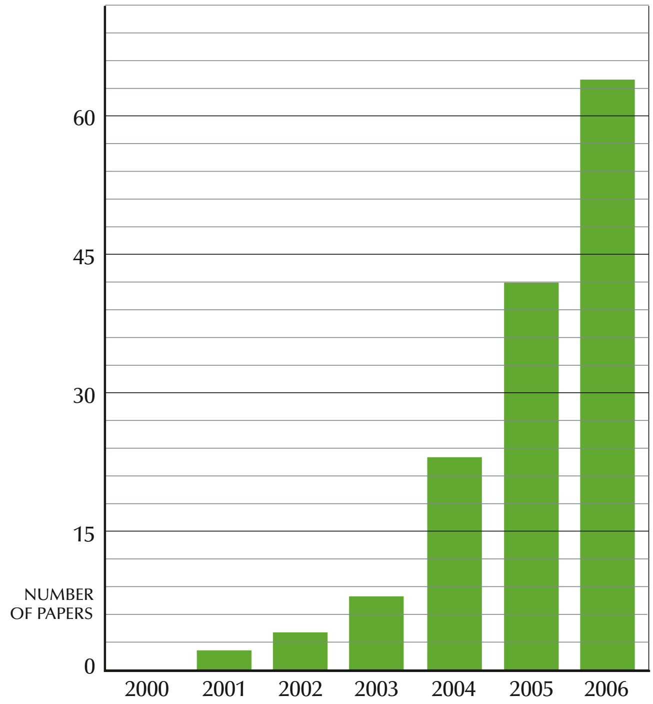
The poll results indicate a strong trend of consumer choices being influenced by environmental considerations. In doing so, they identify an opportunity for publishers to increase their readership growth potential by implementing and marketing environmentally responsible paper procurement policies. As we have seen, some Canadian book and magazine publishers have already identified this potential, and have successfully shifted toward more environmentally responsible practices while balancing factors of cost, quality and availability. ∞

Seven out of ten young people between the ages of 18 and 34 have more confidence in the integrity of a newspaper if that publisher uses environmentally friendly paper.[7]

Canadian publishers with
Ancient Forest Friendly purchasing policies



Availability of Ancient Forest Friendly
and FSC-certified papers suitable
for book and magazine publishing



STRONG DEMAND FOR RECYCLED PAPER OPENS GROWTH OPPORTUNITIES

Many of the large paper consumers developing environmental paper procurement policies in North America are prioritizing recycled fibre. This has created a shift in the paper supply chain. While existing recycled pulp producers have leveraged the opportunity to increase output, additional capacity is necessary to meet the growing demand.

In North America, the current production of high quality de-inked pulp (suitable for printing and writing paper) is 1,492,000 metric tons (MT) per year. Approximately twenty percent of this pulp is underutilized to manufacture low-quality products such as tissue and paperboard. The remaining 1.2 million MT of de-inked pulp currently used in North American printing and writing paper production represents only a small portion of the estimated 23 million MT of pulp used for this type of paper in North America each year.

At this juncture, the primary limitation for recycled fibre comprising a greater percentage of pulps used in printing and writing papers seems to be a lack of de-inked pulp supply. Mill closures have resulted in a drop of approximately 11 percent, or 172,000 MT,* of printing and writing grade de-inked pulp since 2001. Ironically, concurrent with this drop in production capacity, increased market demand has sparked remaining operating mills to increase their rate of production, from an average of 73 percent of production capacity in 2001, to 90 percent in 2005.

* Source: Conservatree, 2007

BOOK PUBLISHERS WORLDWIDE

INTERNATIONAL ECO-PAPER POLICIES

99 BOOK PUBLISHERS
Including: McClelland & Stewart, Random House Canada, Douglas & McIntyre, Raincoast Books

131 PUBLISHERS
Including Random House
2005 sales: $2,164.9 million
(SOURCE: HOOVERS.COM)

40% OF BOOK MARKET
Including: Harper Collins UK, Random House UK, Pearson UK

So although overall production has decreased, de-inking mills are now operating at close to full capacity—a first since the turn of the century.

According to Richard Laramée, Director of Cascades Paper Breakeyville plant, a long-term perspective—as opposed to the fashion- and price-driven peaks of 1995 and 2000—motivates the rise in current demand for recovered paper. As a result, Cascades invested $2.9 million (CDN) in early 2006 to improve processes that resulted in a 14 percent rise in production: from 48,000 tons of de-inked pulp in 2005 to 55,500 tons in 2006. In 2007, the confirmed planned production is between 55,000 and 57,000 tons.

Many large commercial paper purchasers, such as Staples and Random House, are concerned that it will become difficult to source sufficient de-inked fibre for recycled paper. Clearly, additional production capacity is necessary. In the short term, older de-inked pulp mills could be utilized; however, the long term solution to meet the growing market demand requires a significant increase in production capacity through retrofits and/or new infrastructure. ∞

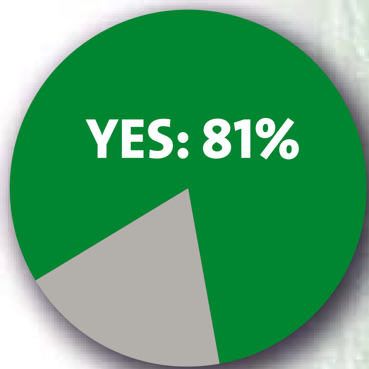
NEW POLL FINDINGS

SHOULD PUBLISHERS USE ENVIRONMENTALLY FRIENDLY PAPER?

Source: see note 7

NEWSPAPER READERS

MAGAZINE READERS



BOOK READERS

CASE STUDY

TAKING THE LEAP

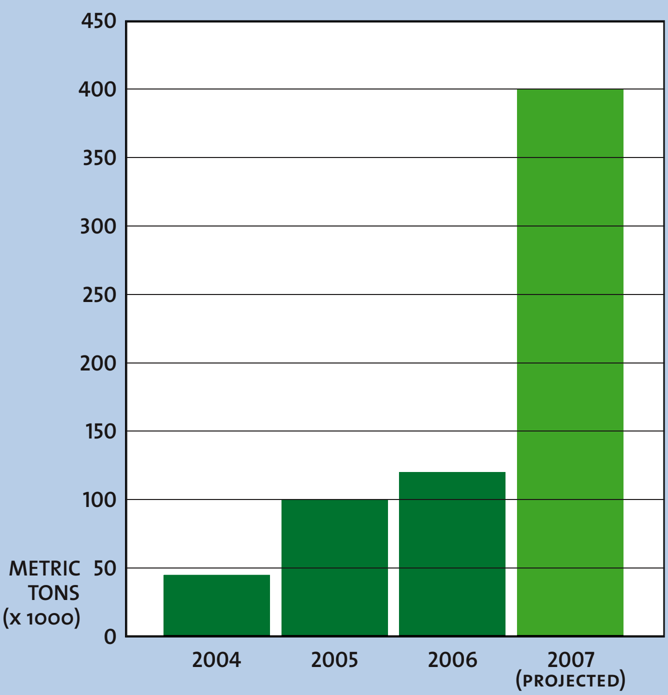
Paper players investing in eco-paper production

In recent years, paper producers have recognized a growing consumer demand for environmentally friendly papers. In response, major players such as Domtar and Stora Enso—as well as smaller mills like Leipa Georg Leinfelder—have invested in the development of environmental sheets and launched new lines of environmental papers.

In 2004, Domtar launched EarthCote, an environmental paper. Within two years, it expanded into an entire product line, EarthChoice, with 20 glossy and uncoated papers containing varying blends of recycled and Forest Stewardship Council (FSC) certified fibre.

In its first year of production (2004), Domtar sold 45,000 metric tons (MT) of FSC-certified paper. The following year, sales jumped by 122 percent to 100,000 MT. Despite two mill closures in 2006, Domtar's production and sales continued to grow to 120,000 MT, a 20 percent increase over the previous year. Furthermore, the output of FSC-certified paper for that year accounted for a full 15 percent of the company's total branded paper sales. Projections for 2007 demonstrate Domtar's commitment to earth-friendly paper production with an anticipated 400,000 MT of FSC-certified paper. More than doubling its market share since its launch two years ago, EarthChoice FSC-certified paper has become a key Domtar product line and market indicator.

DOMTAR: FSC-CERTIFIED PAPER OUTPUT



Domtar's Director of Business Development, Lewis Fix, says the company continues to convert more products to its EarthChoice line in order to address the growing corporate and consumer needs for environmental papers. "It is a differentiated product that addresses the desire for an environmentally preferable product," he says. "We want every Domtar branded product to be FSC-certified/ EarthChoice. The timeline for doing this is being investigated intensively."

Leipa Georg Leinfelder is one of the few paper mills currently producing Ancient Forest Friendly coated magazine grade paper. In 2004, a new program was implemented for production of a recycled coated magazine paper: Leipa Ultra Lux. Within the next year, production more than doubled, as an additional recycled sheet was added to their inventory. During that same period, North American-bound exports jumped 75 percent. Sales have continued to be strong, increasing by 10 percent in 2006 and are projected to climb a further 25 percent in 2007.

While the above-mentioned paper producers represent the 'tip of the iceberg' of mills currently investing or planning to invest in eco-friendly papers, it is anticipated that demand will outstrip supply unless more producers change their product lines. ∞

THE NEW PAPER FIBRE BASKET

Paper production need not be solely dependent on trees as a fibre source. Until the early 1800s, all paper was made from non-wood fibre, such as cotton linters and flax. Although wood has dominated the North American and European pulp and paper industries for the past 150 years, non-wood continues to be present in abundance in the world paper supply, comprising approximately 50 percent of production in China and India.

With growing awareness of environmental impacts caused by deforestation, corporate leaders are looking to alternatives. In the past five years, more than 170 Canadian publishers and printers, plus American companies such as Dell and Office Depot, have established purchasing policies that encourage the development of paper with non-wood content. This trend is expected to quickly increase because of several advantages of 'tree free' fibre sources:

- Carbon sequestration, biodiversity crises and wood fibre shortages are a growing concern to customers and governments, making alternatives to wood increasingly desirable.
- Utilizing straw residues for paper increases farmer income.
- Advancing technology is making the pulping procedure more energy- and fibre-efficient.

Asia, primarily China, accounts for 86 percent of the world's total non-wood pulping production. North America and Europe combined account for less than four percent.[8] As China and India build new mega-mills solely for commercial-grade non-wood pulp and paper, modest projections suggest that in ten years up to 80 million metric tons (MT) of paper could be produced from existing agricultural crops. If Europe, North America and Russia were to utilize 10 to 20 percent of their agricultural residues, such as wheat straw, flax and corn stover, up to 120 million MT of non-wood pulp could be produced.

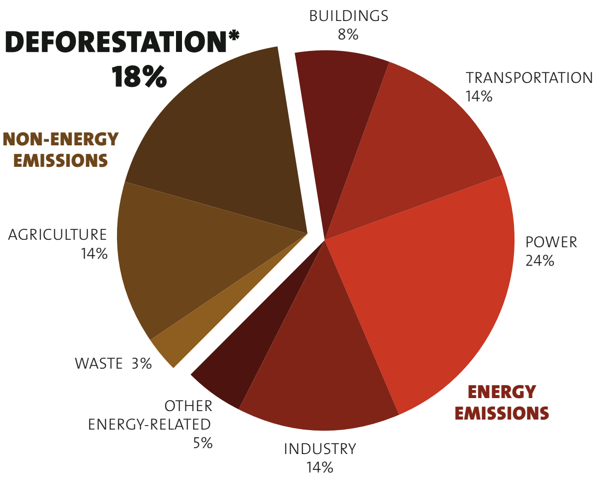
At least two Canadian pulp and paper companies are currently investigating wheat, flax and oat straw as a commercial fibre base. With markets increasingly stating a preference for non-wood content paper, one can expect mills to fill the demand. The question remains whether those mills will be in Canada or Asia. ∞

Non-wood fibres, such as straw residues, continue to be abundant in the world paper supply, comprising approximately 50 percent of production in China and India.

TOWARD CLIMATE STABILITY

Greenhouse gas emissions in 2000, by source

SOURCE: WRI, 2006



* Emissions caused by changes in land use are caused almost entirely by deforestation. (Stern)

We live in a carbon-sensitive world. At a time when government and business leaders grapple with how to mitigate global warming, scientists and economists are increasingly clear that action needs to be taken—and that it needs to be taken now. As the UK government-commissioned Stern Review asserted in November 2006, "Tackling climate change is the pro-growth strategy for the longer term." The outlook points toward legislation and mandated targets to reduce greenhouse gas emissions. Companies and sectors with high carbon profiles are likely to feel the impact. For publishers and heavy paper consumers, greening paper procurement is a low-investment, high-yield strategy for reducing the carbon footprint and limiting the risk to their business.

Paper is currently a high-carbon commodity. The pulp and paper industry is the fourth-largest emitter of greenhouse gases among US manufacturing industries, and contributes nine percent of total carbon dioxide emissions from manufacturing.[9]

Compounding the carbon load of paper production is the fact that paper is still largely derived from intact forests. Forests store 50 percent of terrestrial carbon;[10] in fact, the Boreal forest is identified as the world's largest terrestrial carbon sink.[11] Old-growth forests are particularly valuable from a carbon perspective, as young forests do not approach old-growth carbon storage capacity for at least 200 years.[12] Hence deforestation, and particularly deforestation of old-growth or intact forests, is a significant source of new carbon in the atmosphere.[13]

Other strategies recommended in the Stern Review—and by leading climate experts—include shifting to low-carbon products and technologies. In this vein, at the producer level, a number of mills are exploring and switching to renewable sources of energy such as biogas and the development of low-carbon papers.[14] Papers made with 100% recycled content generate 38 to 48 percent fewer emissions than an equivalent 100% virgin sheet[15]—thus providing purchasers and suppliers with an easy and effective mitigation strategy. For purchasers, exploring other low-carbon options such as electronic media and papers free of intact forest fibre are becoming increasingly common.

> ***"Curbing deforestation is a highly cost-effective way of reducing greenhouse gas emissions and has the potential to offer significant reductions fairly quickly."***
>
> ***—Stern Review, p.537***

While carbon emissions trading is making headway with industrial paper consumers keen to reduce their environmental impact, there is a catch. The climate solution requires carbon reduction. Simply paying for emissions "offsets" does not deliver the reduction in emissions necessary to turn the tide on global warming. The adoption of ecologically-responsible purchasing policies translates into less forest logged and less carbon released. After publishers have implemented policies that reduce their carbon footprint, well-chosen offset programs can be of value. "There is a danger that the use of tradable credits and carbon offsets, for example, in the form of forest plantations becomes an excuse to do nothing to reduce actual carbon dioxide emissions," says UBC professor William Rees, co-inventor of the 'ecological footprint' analysis. "At best, they should be seen as temporary, short-term measures while emissions-reduction technologies catch up. There is no substitute for consuming—and therefore emitting—less." ∞

MARKETS INITIATIVE | ÉCO INITIATIVES

Markets Initiative's role is to shift consumption patterns of industrial paper consumers so that their purchases do not destroy ancient and endangered forests. The organization works collaboratively throughout the paper supply chain.

With seven years of success in facilitating shifts within the Canadian book and magazine industries, Markets Initiative is at the forefront of creating change in global paper markets. As a result of Markets Initiative's work, 200 publishers, printers and other large paper consumers have formally committed to eliminating their use of papers derived from ancient and endangered forests. Markets Initiative's highest-profile milestone to date is working with Raincoast Books to shift the Harry Potter series onto Ancient Forest Friendly paper. Markets Initiative has mentored similar projects in nine other countries.

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1. Stern Review on the Economics of Climate Change, Nov 2006
2. Sector-wide engagement campaigns have been led by the following environmental organizations and focused on these sectors: Markets Initiative (Canada: book, magazine and newspaper industries and supply chain), Green Press Initiative (US: book sector), Forest Ethics (catalogues, office supply retailers) and Greenpeace (Europe: book industry).
3. Ancient Forest Friendly™ purchasing policies consist of three primary environmental platforms: responsible fibre sourcing (i.e. a shift away from intact or ancient and endangered forests); responsible bleaching technologies (processed and totally chlorine free processes); and improved paper efficiency
4. Ancient Forest Friendly™ paper designation: The Ancient Forest Friendly logo represents the highest ecological qualities in the paper industry. In order to be Ancient Forest Friendly, a paper must be manufactured with a high percentage of recycled fibre or agricultural residue. Any virgin fibre used must not have originated from an endangered forest, as well as being FSC-certified. Bleaching must be chlorine free. Ancient Forest Friendly papers conserve intact forest ecosystems and their functions, such as climate stabilization, water regulation and species habitat.
5. FSC-certified: Forest Stewardship Council (FSC) forest certification is a voluntary market mechanism through which forests are certified against a strict set of environmental and social standards.
6. Globe and Mail / CTV News poll, Jan 2007
7. POLLARA national online panel, 1962 respondents. Aug 1-8 2006. Accuracy within +/- 2/2%, 19 times out of 20
8. Ince, P.J. 2004. Pulping. USDA Forest Service: www.fpl.fs.fed.us/documnts/pdf2004/fpl_2004_ince001.pdf – Accessed Sep 18, 2006
9. U.S. Energy Information Administration 2002; Martin et al. 2000
10. Körner, Christian. Slow in, Rapid out—Carbon Flux Studies and Kyoto Targets. *Science*, May 23 2003: Vol. 300, No. 5623, pp 1242–1243
11. Pembina Institute For The Canadian Boreal Initiative (2005). Counting Canada's Natural Capital: Assessing the Real Value of Canada's Boreal Ecosystem Services
12. Harmon, Mark E., William K. Ferrell and Jerry F. Franklin. *Science*, New Series, Feb 9, 1990: Vol. 247, No. 4943, pp 699–702.
13. Stern , Summary of Conclusions
14. Low carbon papers are those at the topmost end of the Ancient Forest Friendly scale (refer to note 4).
15. Environmental impact estimates calculated for different paper grades on Environmental Defense Paper Calculator: www.papercalculator.org

RECOMMENDATIONS

Major paper purchasers:

- Develop and implement an Ancient Forest Friendly procurement policy
- Work with your paper suppliers to ensure they no longer source from intact forests
- Demand your suppliers shift to FSC-certified wood fibre and pulps
- Ask your paper suppliers to develop Ancient Forest Friendly, low-carbon papers with high recycled content
- Advertise your environmental paper policy to enhance your brand equity with customers

Paper producers:

- Increase production of environmentally friendly, low carbon papers
- Drive efforts to increase the amount of recovered paper available for North American paper products
- Cease sourcing virgin wood fibre from intact forest regions and shift to FSC-certified wood fibre and pulps
- Research opportunities to develop commercial scale production of non-wood paper

Government:

- Prioritize conservation-based land use planning for intact forest landscapes
- Re-direct structural support for mills so the Canadian paper industry becomes a global leader of eco-friendly papers—emphasizing non-wood and low-carbon paper options with high recycled content
- Remove regulatory barriers to operators adopting FSC as a forest management policy
- Develop incentives for large paper purchasers to shift to eco-friendly papers
- Lead by example and implement paper procurement policies that shift government paper purchasing practices to eco-friendly options