

ADVOCATE'S KIT

About Us

Canopy safeguards forests and the environment by harnessing the power of the marketplace and changing business practices. Specifically, we drive North American demand for green paper products by shifting heavy paper consuming sectors away from unsustainable sources. We work primarily with the book, newspaper, magazine and print industries to phase out the use of fibre from endangered forests and toxic bleaches in paper-making, make more environmental solutions available and reduce overall paper consumption. Our work generates momentum for the protection and sustainable management of forests. Best known for the greening of the Harry Potter series globally, Canopy has brokered innovative environmental solutions such as the Wheat Sheet and worked closely with ally organizations to translate companies' environmental policies into landmark conservation gains in BC's Great Bear Rainforest and Canada's Boreal forests.

How to Use This Kit

This kit is designed to give paper customers the tools to engage and transform the paper supply chain, from the forest floor to the boardroom. It provides a scientific snapshot of the ecological context driving the work needed to be done to create a more sustainable supply chain, presents the challenges and opportunities for such work and finally, it outlines how companies can make change happen. More information and resources can also be found at www.canopyplanet.org.

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Ten years of proven results

FOR 10 YEARS, Canopy (formerly Markets Initiative) has worked to protect the world's forests, species and and paper producers adopt that half of the forests up in pulp and paper not to do.¹ We've helped environmental paper and to create the solutions to this work, hundreds of printers the market is poised to move that can save millions of trees



climate by helping publishers, printers environmental paper policies. Given logged in Canada every year end products, it's work we can't afford drive North American demand for now are working with our partners satisfy those demands. Because of now stock environmental papers and forward on innovative solutions like papers each year by making use of agricultural waste.

Because of Canopy:

- 650 book publishers, magazines, newspapers and printers have developed environmental policies, including Lonely Planet, Transcontinental and Rogers Media.
- Indigo Books and Music Inc. became the first international book retailer to use a cutting-edge environmental policy to engage its entire supply chain on greening books.
- *Harry Potter* was named the greenest book in history with 23 publishers of the popular series switching to eco-paper.
- The *Globe and Mail* is the first North American daily newspaper to develop an Ancient Forest Friendly™ environmental paper policy.
- In 2008, *Canadian Geographic* was the first magazine in North America to be printed on a paper made partially from wheat straw.
- Three out of four of Canada's largest consumer magazine conglomerates developed environmental paper policies that shift their consumption away from endangered forests.
- 18 million trees have been saved as a result of publishers and printers making the switch from papers originating from carbon- and species-rich forests to eco-friendly alternatives.
- 25 million hectares (60 million acres) of rich, intact forests in BC's Great Bear Rainforest and North America's Boreal Forest are being protected.
- 11 countries, including China, Germany, the UK and the US have developed environmental publishing campaigns under Canopy's mentorship.
- More than 150 new environmental papers are now available in response to Canopy-generated market demand.

ADVOCACY

Why advocate for the world's forests?



THE WORLD'S INTACT FORESTS ARE VITAL to the future integrity of our planet. They are massive carbon reservoirs, helping to stabilize the world's climate like a protective shield. They contribute to the rich biodiversity of our planet and are vital for the survival of plant and animal species, aboriginal cultures and healthy watersheds. Sadly, we have lost almost half – about 3 billion hectares – of the forests that once blanketed the earth.² Every year at least 16 million additional hectares disappear.³

Of North America's original forest ecosystems, only two forest types remain in large tracts of relatively undisturbed intact forest eco-systems: the coastal temperate rainforests situated on the west coast of the continent and the Boreal forest, which stretches across the north.

Temperate rainforests of the West Coast

Temperate rainforests originally covered just 0.2% of the world's land surface.⁴ The World Resources Institute classifies temperate rainforests as the most endangered forest type on the planet.⁵ They are significantly rarer than tropical rainforests. Such rareness and diversity is the result of more than 10,000 years of post-glacial activity. The temperate rainforests of Alaska and British Columbia represent half of the world's remaining temperate rainforest and are home to trees of up to 1,400 years old. British Columbia's coastal forests sustain some of the highest concentrations of biomass and ecosystem carbon and are home to thousands of bird, plant and animal species.

The Canadian Boreal

The Boreal forest of Canada is one of the largest tracts of intact forests on the globe, yet most of us know less about its majesty and predicament than about other conservation battlegrounds, such as the Amazon or tropical rainforests of Indonesia. One thing we do know, however, is that the Boreal serves as one of the world's major carbon storehouses. It also serves as a home to important species such as the now threatened woodland caribou.

A third (about 1 million hectares) of Canada's commercial forest is harvested annually – an area more than 6,200 times the size of High Park in Toronto.⁶ About 50% of this is used for papermaking.⁷

Canopy has been working with publishers, printers, paper producers and ally environmental organizations to secure large scale protection of endangered areas in Canada's intact Boreal forests. In particular, Canopy is working on three main initiatives: securing protection of critical habitat zones in allocated southern Boreal forest areas, sustainable forest management under Forest Stewardship Council (FSC) on remaining allocated southern Boreal forest lands and large scale protection and conservation-based land-use planning for currently unallocated northern Boreal forest areas.

Illegal Logging

Globally, some of the most intense pressure on world forests and forest-dependent communities and species, comes from illegal logging. For customers sourcing paper products from overseas, this is a very relevant concern. A fifth of the world's wood comes from countries that have serious problems enforcing their timber laws, and most of those countries (Philippines, Papua New Guinea, Indonesia and Russia) are also experiencing the fastest rates of deforestation.⁸ In the Brazilian Amazon, up to 74% of production results from illegal logging.⁹ Until a decade ago, many governments were reluctant to acknowledge illegal logging. Now with increased pressure from the marketplace, many import countries are trying to address this issue through initiatives such as the Lacey Act in the US, but are facing serious challenges such as corruption and organized crime.

Today, the greatest traffic of illicit wood is thought to be from Russia to China, which China then resells in the form of finished products such as furniture, paper and printed books. These products easily find their way into our homes and businesses. The European parliament estimates up to 19% of all wood and paper products entering the EU are of illegal or suspect provenance.¹⁰ In fact, it is estimated that 27% of the illegal timber imported by the UK is paper, mainly high-grade paper products or paper for packaging.¹¹

Illegal logging costs the global economy up to \$15 billion us a year.¹² The negative impacts of illegal logging are numerous and result in: corruption, major revenue loss for government, degradation and clearing of forests at an unsustainable pace and loss of long-term income and security for forest-based communities.

An estimated 95% of North American books printed on coated paper are done so overseas, mainly in Asia.¹³ Because of the extent of illegal logging, it is possible that a publisher who prints overseas has published a book on a paper made from illegal sources at one time or another. However, this does not need to be the case. By proactively asking questions about where your paper is sourced, you can avoid buying from contentious sources and help reduce the global demand for illicit wood fibre.

What can your company do?

Here's what your company can do to help protect Canada's remaining intact forest ecosystems and avoid paper from illegal sources:

- Develop an Ancient Forest Friendly™ policy with Canopy and set goals for phasing out contentious or endangered virgin fibre and maximizing both recycled and FSC

content in the paper products you buy. State your support for product development of papers with non-wood fibres like wheat straw.

- Obtain an FSC chain-of-custody from your paper supplier or have the producer fill out a chain-of-custody document (available from Canopy) to verify sourcing.

- Ask your paper supplier to permanently defer logging in large areas of intact forests to ensure sufficient habitat and migratory corridors for species such as woodland caribou.
- Educate yourself, your company and your peers in the industry. Ask Canopy how they can help.

FORESTS AND CLIMATE:

A 101 for paper consumers



THE WORLD'S FORESTS PLAY A CRITICAL ROLE in the fight against climate change. Forest areas like the Boreal, the Amazon and BC's temperate rainforests keep vast amounts of carbon out of the atmosphere by sequestering it in their soil and trees. However, pressure to log for lumber and paper is impacting these vital carbon sinks and through the loss of trees and biomass, carbon is released back into the atmosphere. In fact, deforestation accounts for an estimated 20% of global carbon emissions – that's higher than emissions from the transportation, aviation and IT industries.¹⁴ 50% of that can be attributed to global pulp and paper production.¹⁵

Carbon accounting and sequestration explained

Trees, vegetation and soils in terrestrial ecosystems are sources and sinks for carbon dioxide (CO₂) and the amount stored or emitted varies as a result of natural processes and human activities. Land-use changes that result in CO₂ emissions and removals include: changes in soil carbon, changes in forest and other woody biomass stocks and forest and grassland conversion.

Carbon accounting attempts to measure the amount of carbon dioxide that will **NOT** be released into the atmosphere as a result of projects acceptable under the Kyoto Treaty. When reporting changes in carbon stocks from such activities, the Kyoto Protocol requires that such accounting systems provide a consistent and transparent approach.¹⁶

New scientific studies on forests and climate change

The high-carbon Great Bear Rainforest

Old growth temperate rainforests, like those in BC's Great Bear Rainforest (GBR), store at least twice as much carbon as a 60-year-old forest.¹⁷ But forests are vulnerable to climate change. Land use options that maximize forest resilience to climate change at region wide scales help to prevent literally millions of tonnes of carbon being released into the atmosphere. In the GBR, best available science has established that low risk to the ecosystem is achieved when 70% of the natural range of old growth is maintained over the whole region. Those companies who actively support a shift to low risk ecosystem based management are supporting the maintenance of habitat for species as well as at least 150 million tonnes of CO₂ in the GBR alone—three times the annual CO₂ emissions from fossil fuels in the province of BC.¹⁸ The Inter-governmental Panel for Climate Change (IPCC) noted that conservation of forests has an immediate and significant effect in preventing CO₂ emissions that tree planting can not achieve, with the co-benefits of sustaining habitat and ecosystem services. Supporting precautionary management in the GBR, advocating for it elsewhere and reducing paper demand, provides climate leadership when we need it most—now.

Oregon State University: Protecting global carbon sinks

A recent Oregon State University report shows that old growth forests (many of which are Boreal and temperate forests in the northern hemisphere) serve as global carbon sinks. The study revealed the previously accepted opinion, that old growth forests eventually stop storing carbon and become carbon neutral, was based on inadequate data.¹⁹ Unfortunately, despite their importance in regulating the planet's climate, the protection of old-growth forests has been excluded from Kyoto accounting protocols and other international treaties. If these forests continue to be disturbed, massive amounts of carbon stored in them will continue to be released into the atmosphere—at a time when we need to reduce our emissions more than ever. The study also recommends that carbon accounting needs to give ample credit for leaving old growth forests intact.²⁰

Australian National University: Green Carbon

Another study, *Green Carbon*, by the Australian National University, lends further support to the protection of Canadian old growth forests in order to mitigate the impacts of climate change. The study says that biomass and soil store approximately three times the amount of carbon that is currently found in the atmosphere. The annual exchange of carbon between the atmosphere and natural forests is ten times more than what humans release into the atmosphere by burning fossil fuels each year.²¹

What can you do?

Corporate paper buyers have the ability to leverage the paper supply-chain in such a way that they can drive large-scale conservation and stop unsustainable logging of carbon- and biodiversity-rich forests. Additionally, efforts to drastically lower the footprint of paper can be done by increasing the recycled and non-wood fibre content.

You can:

- 1 Do a full carbon accounting of your business operations, including a full life-cycle analysis of your paper (including loss of biomass from soil disruption).
- 2 Set emission reductions, switch to low-carbon papers (see glossary) and offset in gold-standard projects.
- 3 Encourage policy makers and the pulp and paper industry to also account for loss of biomass in the forest when calculating their carbon footprint rather than only looking at manufacturing-related emissions.
- 4 Beware of possible greenwashing of virgin fibre paper products claiming 'carbon neutrality'.
- 5 Help maintain the stability of the global climate and economy by lending your corporate support to preserving the integrity of intact forests like the Boreal through large-scale area conservation and shifts to sustainable forest management systems such as FSC.



THE IMPACTS OF GLOBAL INDUSTRIAL LOGGING



People and communities



Forests are home to an estimated 800 million people worldwide. Their existence is the foundation for many indigenous peoples' livelihood, social organization, identity and cultural survival. To varying degrees, more than 1.6 billion people depend on forests directly for their livelihoods (e.g., fuel

wood, medicinal plants and forest foods).²² About 60 million indigenous people are highly dependent on forests and in developing countries, about 1.2 billion people rely directly on agro-forestry farming systems (a diverse and relatively sustainable land-use system that combines farming and small-scale forestry). Such systems help sustain agricultural productivity and generate income.²³

The costs resulting from damage to ecosystem services and traditional land uses is substantial. In a comparison of the economic benefits of Cambodian tropical forests, the retention of traditional forest uses were compared to commercial timber extraction. It was found that total benefits were greatest for traditional uses, ranging from \$1,300 to \$4,500 per hectare; private benefits for timber harvest ranged from \$150 to \$1,100 per hectare, taking into account lost services.²⁴

Habitat destruction and species



Every four years, the International Union for the Conservation of Nature (IUCN) analyses the status of more than 40,000 species on their *Red List of Threatened Species* and reports on the results. This year's report has come with a stern warning: despite the

commitment by world leaders to reverse the trend with species, we are now facing a biodiversity crisis so pressing, it should be given equal, if not more attention as the global economic crisis.²⁵

Birds, mammals, amphibians and corals are all showing a continuing deterioration. For mammals, the single greatest threat is habitat loss, particularly in Asia, where deforestation is occurring at a very rapid rate.

Here, we spotlight a few species whose habitats have been impacted by logging for wood products.

Grizzly bear



Grizzly bears are found in a variety of habitats, from dense forests, to subalpine meadows and arctic tundra. In North America, grizzly bears are found in western Canada, Alaska, Wyoming, Montana, Idaho and Washington. The Northwestern population of grizzly bear is of special concern according to the Species at Risk Public Registry of the Government of Canada²⁶ and is classified vulnerable by the IUCN.²⁷ Activities undertaken by humans within grizzly bear habitat – including mining, forestry, agriculture, hunting, residential development and recreation, erode the quality of the habitat for bears, and increase their risk of dying. Only 8% of the range of the grizzly bear Northwestern population is classified as federally protected, and this falls within national parks or wildlife sanctuaries.



Modern forestry has serious impacts on indigenous peoples, among them:

- Increases in mortality, changes in disease ecology and severe health impacts.
- High rates of injury among local people employed as forest workers.
- Disproportionate impacts on indigenous women, children and the elderly.
- Denial of rights in land, forced resettlement, and limitations of rights of access and use.
- Degradation of traditional trap lines, medicinal areas and cultural sites.
- Breakdown of traditional social structures and customary laws, and the introduction of new inequalities.³¹

What can you do?

In the paper supply chain, the voice of a major customer is critical in reducing habitat destruction and protecting these important species. Here's what you can do:

- 1 Include in your Ancient Forest Friendly™ paper policy a commitment to phase out fibres coming from critical habitat areas and eco-system dependent communities.
- 2 Investigate your supply chain by having your producer fill out a chain-of-custody document (available from Canopy) and engage your suppliers on any sourcing areas of concern.
- 3 Educate yourself, your company and your peers in the industry.
- 4 Become an advocate for scientifically sound forest and habitat protection in the market and through strong legislative action. Use your company's leverage to encourage provincial, federal and international governments to mandate logging deferrals in critical habitat areas.

Woodland caribou



Woodland caribou have been classified as at-risk across Canada, largely as a result of Boreal habitat loss or fragmentation caused by human development. Many caribou herds across Canada have less than a 50% chance of persistence in another 100 years; to date at least half of the caribou's range

has been lost due to habitat disturbances like logging, oil and gas exploration lines and road building.²⁸ Habitat is critical to the survival of woodland caribou and as such they need large tracts of mature and old-growth coniferous forest with little or no vehicle access or human disturbance.

Given that approximately half of the Boreal region is already allocated for forestry and oil and gas, the way that these areas are managed is critical for caribou survival. Caribou are sensitive to roads and seismic lines as well as actual resource extraction activities. Even low levels of industrial activity can threaten the health of a woodland caribou herd. There is an opportunity for governments and industry to lessen the impacts of industrial development on caribou by maintaining large areas of intact older forests, keeping road-free areas, and reducing the cumulative impacts of multiple industrial and recreational uses on caribou habitat.

Primates



Primates such as monkeys and apes, the closest species relatives to humans, are disappearing. Habitat destruction, through the burning and logging of tropical rainforests is a major threat for this species according to the 22nd International Primatological Society Congress in

Edinburgh.²⁹ Africa, in particular, loses more than 10 million acres of forest every year – twice the world's rate of deforestation.³⁰ As such, 11 of the 13 kinds of red colobus monkeys assessed were listed as Critically Endangered or Endangered in Africa. Two may already be extinct. While the plight of gorillas and bonobos, both of which are deeply threatened, tend to capture the most attention – it is the smaller primates, like the red colobus, which could become extinct first. Protecting the habitat of such special creatures is complex because it must not only address population growth and market demand for resource products, it must also address the region's deeply rooted human problems, like poverty. Organizations such as the Jane Goodall Institute recommend solutions that directly support local African communities with development and conservation goals.

MODEL FOR CHANGE

Great Bear Rainforest becomes legacy for the world



A timeline towards protection

1995

The Great Bear Rainforest Campaign is launched with the goal of protecting the largest remaining unprotected tract of intact coastal temperate rainforest in the world.

1999

Home Depot and Ikea announce they will phase out products made from ancient and endangered forests. German pulp producers and publishing associations support deferrals and urge stakeholders to find a solution.

2001

Various groups start to come together with a new way of looking at land use planning. ForestEthics, Greenpeace, Sierra Club and others sign an agreement with some First Nations to work on a pilot project to define a new approach to land use planning and resource economies.

2002

Staples announces that along with increasing recycled fibres, they will phase out fibres from endangered forest. Book publishers soon follow suit with procurement policies, launching an international trend in book, magazine and newspaper publishing.

2004

Government and First Nations negotiations begin. These talks are informed by a stakeholder consensus package and First Nations land use planning that will result in a final decision about the fate of the area.

THE GREAT BEAR RAINFOREST is a forest that is second-to-none in both its ecological diversity and the amount of carbon locked in its trees and soil. It's also a place where local First Nations communities have the chance for a prosperous and sustainable future. Canopy is proud of the roles many of our partnerships have played in helping move this iconic place, where the Spirit Bear roams amongst trees that are up to a 1,000-years old, towards long term security.

Over the past 10 years Canopy has worked closely with our environmental allies to secure protection in the Great Bear Rainforest (GBR). We have engaged many of our publishing and print partners to encourage the BC government, as well as pulp and paper producers in the region, to reach the GBR Agreement and, in more recent years, to actually live up to that commitment. The contributions of these publishers and printers as well as other international customers have been invaluable in helping to secure a legacy of international significance. The GBR Agreement allows environmental values and economic needs to work together – rather than against each other. And although the Great Bear Rainforest Conservation Measures are not yet fully implemented, this landmark decision, years in the making, is a sign of significant progress and a success story to be modeled elsewhere. The structure is in place for companies and governments to achieve full implementation of Ecosystem Based Management by 2014 and for local communities to be well on their way to conservation-based economies.

As part of the Great Bear Rainforest Agreement:

- 2.1 million hectares of British Columbia's Great Bear Rainforest has been formally protected.
- \$120 million in new financing is already flowing into local and First Nations communities to kick start new conservation economies in the region.
- Regulations set for Ecosystem Based Management (or 'lighter touch logging') put an additional 700,000 hectares of high value forests off limits to logging.



How can you help progress in the GBR?

Although incredible progress has been made in the Great Bear Rainforest, there is still much work to be done before this spectacular ecosystem is being managed in a way that poses a low risk to its ecological integrity.

You can help ensure the Great Bear Rainforest stays on track by:

- Tracking progress in the Great Bear Rainforest towards its 2014 target of reaching full implementation of ecosystem based management and engage your supplies as required
- Encouraging logging companies in the Great Bear Rainforest to pursue FSC certification

2006

FEB 7TH

Protection package announced: 2 million hectares protected.

2007

First transitional set of new logging regulations established for the GBR.

2008

All new conservancies legislated.

2009

Province, First Nations, industry representatives, community representatives and Environmental Non-governmental organization (ENGO) representatives announce that the policy and legal structure for Eco-system Based Management is in place.

New logging regulations ensure that the natural level of old growth will be maintained and that an additional 700,000 hectares are off limits to logging.

Additionally, a five-year plan (2009-2014) is established to take the next steps to achieving low risk to the ecosystem and high levels of human well-being.

TRENDS IN THE MARKETPLACE

Economic hard times don't shake concern for the planet



CONSUMERS ARE INCREASINGLY SEEKING OUT businesses and products that help them tread lighter on the planet. Recessions and financial difficulties have not caused a move away from this trend. In fact, consumers are becoming increasingly aware that the economy and environment are inextricably linked. Unlike past trends in green consumer consciousness, today's concern for the environment is solidly changing the way consumers behave in the market. As such only those companies who move to greener practices and products are likely to come out on top.

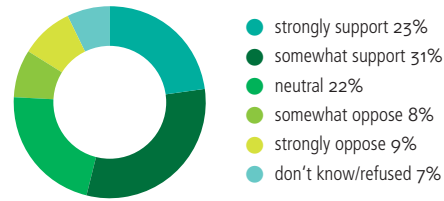
- 1** When asked about the current financial situation and the importance of protecting the environment, 60% of Canadians said that financial and economic stabilization should not come at the cost of the environment.
- 2** Because climate change is one of the most pressing issues facing our planet, 73% of Canadians think that regardless of the current economic downturn, businesses have the responsibility to show leadership on both the health of the environment and the health of our economy.
- 3** 76% of Canadians agree that even with the economic situation at hand, the environment is as important an issue as the economy. 48% said they strongly agree with this statement.
- 4** Six in ten Canadians feel that the well-being of the environment and the economy are interconnected and they should be dealt with simultaneously.

1. How important is it that individual companies help the environment by reducing waste and pollution?



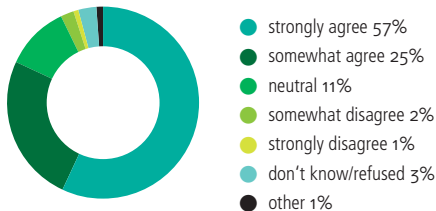
N Size 2,500

5. How much do you support the fiscally responsible granting of government (public) funds to help books transition to paper that is more environmentally friendly?



N Size 1,703

2. In recent years, climate change has become one of the most pressing issues facing our planet. And in recent months, the state of markets both locally and globally has also become a very pressing matter. Given these two concerns, do you agree or disagree that businesses have the responsibility to show leadership on both the health of the environment and the health of our economy?



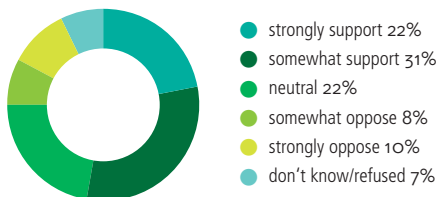
N Size 2,500

6. In your opinion, who can do the most efficient job reducing the current and future impacts of paper on our forests and climate?



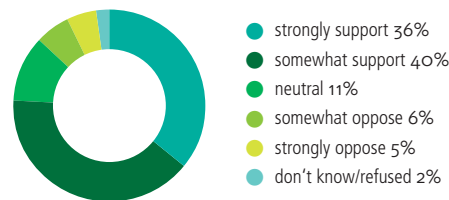
N Size 2,500

3. How much do you support the fiscally responsible granting of government (public) funds to help magazines transition to paper that is more environmentally friendly?



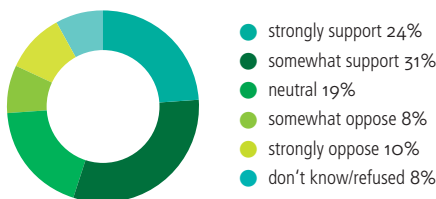
N Size 1,703

7. If you agree that the pulp and paper industry in Canada is unsustainable and need to innovate through greener technology, how much do you support the granting of government (public) funds to help the industry to transition to greener technology?



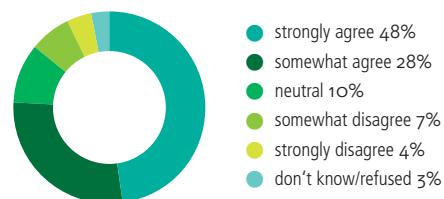
N Size 1,578

4. How much do you support the fiscally responsible granting of government (public) funds to help newspapers transition to paper that is more environmentally friendly?



N Size 1,703

8. Do you agree or disagree that even with the economic situation at hand, the environment is as important an issue as the economy.



N Size 2,500

Methodology: Sample size is 2,500 Canadians. Results are considered accurate to $\pm 1.96\%$ nineteen times out of twenty. The survey was fielded from November 6th to November 11th, 2008 as a part of an omnibus study.

LOOKING AHEAD TEN YEARS



THIS PAST DECADE, Canopy has been advocating for the diversification of the paper basket because we believe that paper doesn't need to come with a heavy ecological footprint.

To supply over 650 North American magazines, newspapers, book publishers and printers with the eco-papers they are asking for, at least an additional 550,000 metric tonnes of eco-paper is needed each year.³² However, no mills in Canada are currently positioned to supply this additional demand.

Given the state of the industry, our climate and the planet, the only way forward is a paper fibre basket that is diversified, sustainable and innovative. We see it being comprised of three sources of fibre: pre- and post-consumer recycled fibre, agricultural residues (wheat, flax and hemp straw) and FSC-certified virgin wood fibre (sourced almost exclusively in second growth forests).

Recycled fibre

We propose that investments in recovered fibre collection systems and de-inking capacity would offer some of the greatest protection for Canada's forests, reducing both the greenhouse gases and the social impacts of unsustainable logging. However, the challenge lies in improving the supply chain between the paper consumer and the paper maker. The starting point in a more sustainable supply chain is a clean source of recovered paper. An increasing obstacle for making this a more feasible source of fibre is single-stream waste collection. Such an approach to recycling is practiced in most provinces and states in order to increase the amount of waste residents can divert from landfills, but as such, the quality of the commodity is much poorer than its sources-separated cousin.

This low-quality paper has been largely shipped to China in past years. In fact, Chinese recovered paper imports (mainly from the US) grew from five million tonnes in 2000 to 16.7 million tonnes in 2006.³³ As a result, North American

paper producers have less recovered fibre to cycle back into their products.

Regional governments must rethink the way waste collection systems are set up. In addition they must rethink their goals: are they to move citizens towards zero waste systems or just semi-divert waste from landfills? Clean recycling needs to be a larger priority if we are going to address things like overcrowded landfills and climate change. Mandatory recycling for households and small and large businesses should also be strongly considered.

On top of collection, North America's antiquated de-inking facilities must be addressed as well. In the last 10 years recovered paper has become increasingly popular and now old de-inking mills are running at 95% of their capacity.³⁴ With so many running close to maximum capacity and increased market demand for good quality, affordable recycled pulp, additional de-inking facilities are needed. In the current financial climate it is likely this will not happen without government support.

What can your company do?

- 1 Support policy initiatives to improve waste collection. Participate in public consultations when possible.
- 2 Switch to recycled paper wherever possible and set a timeline for increasing the post-consumer content of your paper to higher percentages. For printing and writing papers, this should be no less than 50% for uncoated papers and 30% for coated papers. Notify suppliers that papers with these contents or higher are expected.
- 3 Voice concerns about single-stream collection systems to your local municipality.
- 4 Tell us what sorts of papers you need: Canopy is now working with mills who are willing to explore development of new recycled papers.

Agricultural residue

One of the best ways to alleviate the pressure to log intact forests in the coming decades and protect their associated carbon and biodiversity values is to support a paper market for agricultural residue papers (e.g., straw from agricultural residue left over from food production, such as the wheat residue in the Prairies). Studies show that utilizing this fibre has a much smaller ecological footprint than logging trees for paper.³⁵ Currently there are well over 1.3 million tonnes of unused wheat straw available annually in Manitoba alone.³⁶ This is more than enough non-wood fibre to replace the fibre needs of the Canadian book and magazine industries annually.³⁷ As

for other fibres like hemp and flax straw, additional research should lead to the development of new paper grades, and hopefully to large-scale commercialization, in the next decade.

The biggest barrier right now to commercial scale production of non-wood papers is a lack of pulping facilities for agricultural residues in North America. In the next couple of years, Canopy sees market interest leading the construction or retrofitting of the first medium-sized mill to supply large paper purchasers. In order to complete this project, government support in the form of subsidies or incentives will likely be needed.

What can your company do?

In the meantime, here's how your company can join with Canopy's efforts to support agricultural residue paper development:

- 1 Whenever possible, send the message to mills and investment partners that you are interested in buying non-wood papers.
- 2 Participate in non-wood paper sample testing if asked by a mill, printer, or Canopy.

LOOKING AHEAD TEN YEARS

continued

FSC certified fibre

Recycled fibre can only be recycled a number of times (between 5 and 10 times – depending on the grade) before the fibre breaks down too much to maintain paper integrity. Therefore, an input of virgin fibre, be that wood or non-wood, will probably always be needed to complete the paper fibre basket.

Forest certification is one way in which we can reduce our ecological impact on forests. That said, not all forest certification schemes deliver meaningful conservation on the ground. Although all certification systems have space for improvement, the Forest Stewardship Council (FSC) is the one under which a sustainable forest is most likely to exist out of the four main certification bodies: FSC; Programme for the Endorsement of

Forest Certification scheme (PEFC); Sustainable Forestry Initiative (SFI); and Canadian Standards Association (CSA). FSC's strengths include: the protection of ecologically important forests, the banning of the conversion of natural forests into plantations and the input of Aboriginal communities where forestry impacts their land. None of the certification schemes prevent logging in intact forests. Consequently, as these forests disappear, biodiversity as a whole and vulnerable species such as the woodland caribou are affected. Therefore, the best effort to protect high conservation value intact forests requires significant protection as the first step and FSC certification as the second step.

What can you do?

- 1 Include a requirement for any virgin wood fibre included in your supply chain to be FSC certified.
- 2 State a preference for FSC certified papers with maximized recycled content.
- 3 When certification standards are under review, provide input so that the standards are improved in such a way that they reduce overall ecological impacts.

Cradle-to-cradle paper?

Cradle-to-cradle is an approach to designing products that incorporates thinking about the entire life-cycle of a product. Rather than a cradle-to-grave lifecycle, the product is safely compostable or infinitely recycled again and again. Doing so saves vast quantities of energy and resources rather than continually processing virgin materials into new products.

Is paper designed to be cradle-to-cradle? Not yet. Sourcing for most papers is currently not renewable or sustainable: though trees are replaceable, the carbon and biodiversity values of old growth and endangered forest ecosystems, the primary source for much of the world's paper production, takes hundreds of years to restore. Further, in North America, low paper recovery rates mean that 35–50% of paper ends up in landfills rather than returning to the fibre basket.³⁸ In the landfill, decomposition releases methane gas, which wreaks havoc on a vulnerable climate.



PRINT VS. ONLINE

As advocates and collaborators for eco-paper solutions, we at Canopy are frequently asked which is better for the environment: print or digital? This debate has become particularly heated with the proliferation of recent reviews of carbon footprint measuring and reporting. Here's a snapshot of current studies that highlight some of the issues to be aware of:

1. In a 2007 study comparing the various impacts of printed, web-based and tablet e-newspapers, KTH concluded that reading the newspaper for 30 minutes each day on e-paper has a smaller footprint than newsprint containing 40% recycled content and is equivalent to reading news on the web for 10 minutes. The study did not compare the impacts of a higher recycled content newsprint sheet relative to the e-tablet.³⁹
2. IT research firm Gartner revealed that the entire carbon footprint of the IT industry is comparable to the global aviation industry. In comparison, greenhouse gas emissions associated with global pulp and paper production are more than twice that of aviation. In fact, about 8% of global emissions can be attributed to pulp and paper⁴⁰ according to the Intergovernmental Panel on Climate Change (IPCC), whereas aviation is responsible for 3.5%.⁴¹
3. A 2009 article looking at the book industry contained data that parallels the newspaper research from KTH. They attributed 70% of the book sector's CO₂ emissions to paper production, noting that for e-book readers, the most carbon-intensive step is the production of the device itself, while the greatest impact of reading online is the energy that it takes to power the computer.⁴²
4. Most recently, CleanTech reported that electronic book readers will save an average of 168 kg of CO₂ after their first year of use when making the switch from printed books. However, assumptions about the number of titles purchased, rate of e-device replacement and environmental qualities of the printed book were either not defined or favourable for the e-device.⁴³

At this time, we know of no study that specifically compares the lifecycle impacts of digital to print magazines. However, carbon footprint studies by *Time*, *Backpacker*, *InStyle* and others, imply that magazines have a similar performance to books and newsprint.

Regardless, the digital revolution is well underway. So the question remains: which is better for the environment? Before a definitive answer can be made, numerous

issues still need to be addressed in order to accurately assess the relative environmental and social merits of digital and print publications. The frequency of e-reader hardware upgrades, the fibre content of the printed piece and transportation impacts associated with product delivery are all significant factors in determining which application is better ecologically. For example, not only does using 100% recycled content rather than virgin fibre slash the biodiversity

impacts of a printed publication, it also reduces its carbon footprint by 38–48%⁴⁴—significantly changing the eco-equation. It should also be noted that most studies fail to adequately account for the social costs of production such as conflict in the Democratic Republic of Congo due to the precious metals used for electronics or land rights disputes between paper plantation owners and indigenous people in Brazil.

While we recognize the need for more in-depth studies that incorporate the entire lifecycle of both print and electronic media into the footprint analysis (i.e., the loss of carbon biomass from soil disruption during logging, the social impacts of logging and mining, production affects on water and landfill, recycle-ability), these take time and are not always definitive. In the interim, Canopy suggests employing the smallest footprint possible. For now, a prudent approach appears to be a mixed platform of both digital and print with use of papers that have as high recycled content as possible.

"Textbooks are outdated as far as I'm concerned."

— Arnold Schwarzenegger, Governor of the State of California, who believes online technology is a way to cut state spending on 'antiquated textbooks'.



THE PAST YEAR

Green paper or pulp fiction?

GREEN PAPER

The campaign for real recycling

Co-mingled (also called single-stream) recycling has become one of the biggest obstacles to the utilization of clean recovered fibre making its way back into paper products. In the UK, materials re-processors, the community recycling sector and Friends of the Earth have joined together to launch *The Campaign for Real Recycling* to urge the central government and local authorities to improve the quality of materials collected for recycling in the UK. According to the campaign, sorting recyclables at the source (end-consumer/pre-collection) rather than after collection, maximizes “the economic, environmental and social benefits of recycling for everyone, from the local council tax payer to the global re-processing industry.”⁴⁵

PULP FICTION

Destroying forests for ‘carbon neutral’ biofuels

It has become a recent trend to claim that using trees from carbon-rich forests and in turn, the waste from pulp and paper production (biofuels from biomass), is carbon neutral. These claims are cause of some concern because the paper industry typically misapplies the IPCC guidelines by claiming it would be double-counting, but in fact, they aren’t counting their emissions from the use of biomass at all. Instead they are claiming that burning biomass and biomass derived fuels (i.e., black liquor) in their mills is carbon neutral because, they assert, trees are a renewable resource. Under the greenhouse gas accounting rules of the IPCC, the removal of carbon from a forest or plantation is considered an emission at the time of harvest. While the debate about whether biomass energy versus coal energy releases more carbon emissions has yet to be settled, the inclusion of biomass energy and emission source in the life cycle analysis of paper would likely make paper second only to petroleum refining in terms of emissions. It is important to note that while biomass must not be counted twice, it must be accounted for in the entire life cycle analysis of a product.⁴⁶

GREEN PAPER

The UK’s Shrink Project

In 2009, the *Shrink Project*, run by a coalition of environmental organizations, decided to rank some of the largest UK retailers, publishers and finance companies for how efficiently they use paper. With a motto of ‘addressing the madness of over-consumption of paper’, they awarded one company a Gold rating, two Silver and six scored Bronze, compared to 11 companies that failed to show adequate activity on paper efficiency. The project is seen by many as timely: almost half of all UK office paper is in the bin by the end of the first day it is used and the average British household receives 650 pieces of junk mail every year! It’s no wonder that North Americans and Europeans use more than 200 kg of paper each per year, while the average African uses just 6.5 kg.⁴⁷

PULP FICTION

International Paper and certification

This year International Paper (IP), the world’s largest paper producer, was tagged by investment analysis company, Wall Street 24/7, as one of the top ten corporate greenwashers.⁴⁸ The University of Massachusetts Political Economy Research Institute (PERI) has identified IP as the thirty-first most toxic company in the US.⁴⁹ This summer, in a surprising announcement, IP declared that it has the largest FSC manufacturing platform across the globe. On the surface, the announcement by IP represents a significant step by the world’s largest paper company to become a leader on FSC after many years of advocating for the far less stringent SFI certification scheme. However, buyers beware: a closer look at their announcement is revealing. While IP now has FSC chain of custody certification at some facilities, it is not actually producing any new products that are FSC certified. The chain of custody certificate simply means that IP has the appropriate mechanisms in place to be able to track FSC certified fibre from the forest, through the mills and to an end product. Unfortunately, at this stage IP has not yet taken any steps to pursue FSC for its forest operations.

GREEN PAPER

Standard Life commits to cutting paper use in half

Top-of-the-league and setting a great 'standard' is finance company, Standard Life, which has pledged to reduce its paper use by half by 2012. It has already made great strides towards this goal: the company's various green teams have slashed paper consumption by more than 20% since 2006. In the process, they have saved money and significantly reduced their carbon footprint. It seems everybody is in favour of a greener 'standard' for the company: when it surveyed its stakeholders, the company found that of its 1.5 million shareholders, 94% preferred to receive their insurance information by email rather than by post and paper, thereby reducing pressure on trees and the climate.

PULP FICTION

Black liquor as an environmental solution

These days, most people support public funds invested in improved energy efficiency and environmental performance. When those funds are abused, it is a different story. That's why the recent trend of us subsidization (in the form of grants or tax-cuts) for the pulp and paper sector's use of black liquor is generating real steam by environmental groups and many paper producers.

Black liquor is a waste-product of the chemical pulping process and is used to generate heat and power in mills. Since it is a so-called 'bio-fuel', mills are claiming it is a renewable and carbon neutral energy source. In the us, however, paper companies found a tax loophole to receive millions of dollars in payments from the us Treasury by increasing their use of fossil fuel. By adding a small amount of diesel fuel to each gallon of black liquor fuel, mills qualified to

become a registered 'alternative fuel mixer', which brings a multimillion dollar tax credit. A recent Goldman Sachs report on this tax loophole states that us paper companies' use of this tax credit actually results in an increase in the use of fossil fuel, thanks to the scheme's method of adding diesel fuel to the black liquor. Unfortunately, tax-payers who support cleaner energy aren't the only losers in this scheme. Producers using recycled fibres without a black liquor by-product are also placed at a severe disadvantage even though they are being environmentally responsible.

Recently, Canadian mills used this development in the us to lobby Ottawa for the \$1 billion in green energy credits that can be claimed over the next few years. The details of this subsidy are still being revealed as this goes to press.

GREEN PAPER

Kimberly-Clark sets the bar higher for tissue products

In August of 2009, Kimberly-Clark Corporation, the maker of Kleenex, Scott and Cottonelle brands, announced a strong fibre sourcing policy that will increase conservation of forests globally and will make the company a leader for sustainably produced tissue products. Kimberly-Clark has set a goal of obtaining 100% of the company's wood fibre for tissue products, including the Kleenex brand, from environmentally responsible sources. The revised standards will enhance the protection of endangered forests and increase the use of both FSC certified fibre and recycled fibre. By the end of 2011, Kimberly-Clark will ensure that 40% of its North American tissue fibre is either recycled or FSC certified – a 71% increase from 2007 levels that represents 600,000 tonnes of fibre. Also by the end of 2011, Kimberly-Clark will eliminate the purchase of any fibre from the Canadian Boreal forest that is not FSC certified.

BUILDING BETTER BUY-IN



NEED HELP BUILDING A STRONG COALITION for your company's green efforts? Getting employees involved and invested in your company's environmental goals and objectives not only requires an understanding of environmental issues, as well as specific knowledge of the company's own environmental impacts, it also requires the ability to inform and educate in such a way that it frames action as the essential next step.

Beyond practical tools and systems, successfully implementing an environmental policy involves permeating a new environmental and social consciousness throughout the culture and day-to-day activities of a company. Long-lasting change requires a shift in culture, supported by strong leadership, vision and tenacity. Here are some tips to get you started.

1 Develop a policy

A policy acts as the primary vehicle for institutionalizing your company's environmental initiatives. It is a central vision piece for building collaboration, commitment and ultimately, action.

2 Present to your staff

The right speaker can help you build a compelling context for your environmental initiatives and start to build buy-in. Topics can include climate change, building an effective green team, environmental publishing and more.

3 Ask your staff

If you want to encourage your staff, start by asking them what they think. Surveys can be designed easily and affordably. Such information gathering can also reveal internal champions for leading projects and test job satisfaction in a 'greener' work environment.



4 Set and measure goals

Setting goals and prioritizing areas of impact is key to successfully implementing an environmental initiative. Canopy has developed templates and systems that are customized for companies. Such tools can help create and implement environmental policies and track, quantify and report on ecological savings. Communicating tangible progress back to staff and customers can inspire, motivate and build brand loyalty.

5 Create incentives

A number of companies are using incentive-based initiatives to encourage participation in environmental programs. Some involve recognition or even cash. Bank of America instituted a reward system of sharing 5% of any cost savings that resulted from an employee driven idea—by reducing the basis weight of their ATM receipt 25%, they saved \$500,000 and the employee received a \$25,000 bonus.

6 Get recognized as a leader

Various job satisfaction surveys cite a 'sense of purpose in their work' as being one of the top contributors. Being an environmental leader can give company employees a sense of pride like nothing else. *Canadian Geographic* became a trailblazer when they were the first magazine in North America to print on wheat straw based paper. Similarly, Hearst Corporation was the first building in New York City to achieve the Gold Leadership in Energy and Environmental Design (LEED) rating. And there are many ways to promote your 'greener' brand, whether it be communication efforts about your new policy, your ecological/cost savings, or your progress to-date. A number of business and environmental awards exist—a long list of publishers have won the *Ethics in Action Award* and the *Environmental Printing Awards*—and there are many more opportunities to get noticed in trade publications. The possibilities are endless!

7 Institutionalize your environmental commitment

Nowadays, everyone wants to be a little greener and so often we want all hands to be on deck around environmental initiatives. However, rather than everyone trying to work on it 'off the side of their desks', building environmental performance criteria directly into job descriptions and performance benchmarks builds clarity, accountability and ownership. And as important as broad buy-in is to success, it is useful that at least one employee has this as a key focus of their work—especially in large companies. There is a reason why a sustainability manager is becoming one of the hottest new jobs in the marketplace.

8 Utilize educational tools

A number of free or low-cost tools already exist to help you build an education program for your company. Canopy can share a number of educational materials, presentation templates and eco-audits. Canopy also coordinates a number of workshops, webinars and forums to help educate publishers on environmental issues.

9 Make it fun

Inspire staff with fun activities that help them learn and contribute to your initiatives. Start a competition between various departments and give a prize to the department with the most reduced consumption. Or, host an environmental speaker at a staff 'zero-waste' lunch.

10 Network with others

Greening the marketplace can't be done alone: it takes collaboration. Canopy can connect like-minded Green Teams, staff and companies for collaborative partnerships, trouble-shooting or skills sharing.

GLOSSARY OF GREEN

Wading through the eco-paper lexicon

ANCIENT AND OLD-GROWTH FORESTS are forest areas that are relatively undisturbed by human activity. Ancient forests vary significantly in age and structure from forest type to forest type and one bio-geo-climatic zone to another. Boreal forests, temperate or tropical rainforests may all be classified as ancient or old growth forests.

ENDANGERED FORESTS are forests that are so rare, threatened or ecologically vulnerable, and are of such global biological importance that any commercial use could irreparably damage their conservation value.

ANCIENT FOREST FRIENDLY™ PAPERS are low carbon and low biodiversity products that conserve intact forest ecosystems and their ecosystem functions. In order to be Ancient Forest Friendly™, 100% of the paper fibre must have ecological attributes, including a high percentage of post-consumer recycled or agricultural residue FSC certified and assessed not to originate from endangered forests. Bleaching must be chlorine free.

DEFORESTATION is the conversion of forested areas to non-forest land for use such as arable land, pasture, urban use, logged area, or wasteland. Deforestation results from removal of trees without sufficient reforestation. This results in a decline in habitat and biodiversity, wood for fuel and industrial use, and quality of life.

FOREST FRAGMENTATION in its most general sense, is the break-up of an intact forest area, e.g., by logging and road-building, leaving a land base that is divided into smaller pieces, rather than completely deforested. In particular, there is conversion of a large area of native forest into other types of vegetation/land use, leaving remnant patches of forest that vary in size and isolation.

LOW-CARBON AND LOW-BIODIVERSITY FOOTPRINT PAPERS are papers that contain high-recycled content, agricultural residue fibre and Forest Stewardship Council certified 'pure' fibre where virgin fibre is necessary. These papers can also be made at mills utilizing renewable energy like wind, solar and biogas, certified by a credible green energy certifier.

CARBON NEUTRAL PAPER 'carbon neutral' is a term that refers to an attempt to balance the amount of carbon released with the amount sequestered or offset. Currently, there is no standardization governing carbon neutral claims, which makes credible accounting difficult. It is an especially problematic term when applied to paper composed of virgin tree fibre, as it has often been applied to energy reduction measures at the mill and offsets purchased for the energy used to produce the paper, while ignoring the heavy role that virgin paper plays in 'deforestation' and 'fragmentation' – both major contributors to global carbon emissions.

CRADLE-TO-CRADLE (C2C) is an approach to the manufacturing of products, that considers the entire life-cycle into the design whereby making it entirely compostable or giving it the ability to be infinitely recycled into itself. In doing so, it saves vast quantities of energy and resources rather than continually processing virgin materials into new products. At its core, cradle-to-cradle is about the conservation of nature, limiting toxic pollutants, and promoting increased innovation. Although a promising potential, the production model reality for much of the paper currently produced in North America and around the world falls short of cradle-to-cradle design or life-cycle.

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ADDITIONAL RESOURCES

Canopy

Book and Magazine Eco-Kits

A compendium of tips, terms, resources and papers for environmental friendly book and magazine publishing. Available online at: <http://www.canopyplanet.org/index.php?page=ecokits>.

Eco-Paper Database

A listing of the best eco- and Ancient Forest Friendly™ papers available in the Canadian marketplace. Available online at: <http://www.canopyplanet.org/EPD/index.php>.

Trend Report 2009:

Charting a New Course for North America's Struggling Pulp and Paper Industries: Green Innovation. Available online at: <http://www.canopyplanet.org/index.php?page=trend-report-2009>.

Other websites

The Environmental Paper Network (EPN)

The EPN is a resource for purchasers, environmental organizations, industry, and individuals. It is a diverse group of environmental organizations joined together to support socially and environmentally sustainable transformations within the pulp and paper industry. Their website can be found at: <http://www.environmentalpaper.org/>.

What's In Your Paper

What's In Your Paper, a project of the Environmental Paper Network, is a website and campaign designed to raise public awareness about responsible paper options. Their website can be found at: <http://www.whatsinyourpaper.com/>.

PulpWatch

An online resource rating the performance of global pulp and paper mills according to criteria of the *Common Vision for a Sustainable Paper Industry* developed by the Environmental Paper Network. Ratings are based on publicly available data on fibre supply, forest certification, bleaching criteria and Social performance. Available online at: www.pulpwatch.org/.

eBooks vs. Paper Books

A summary of studies on the impacts of online versus print can be found at: <http://www.ecolibris.net/ebooks.asp>.

Blogs about paper

<http://thepaperplanet.blogspot.com/>

Reports

Reducing Climate Impacts, A Guide For the Book and Newspaper Industries

Report by Green Press Initiative, 2008. Available online at: www.greenpressinitiative.org/documents/climateguide.pdf.

Vancity Carbon Neutral Project

Read more about what Vancity did to become the first 'carbon neutral' financial institution in Canada online at: www.vancity.com/MyCommunity/OurVision/ActingOnClimateChange/ClimateChangeSolutions/VancitysCarbonNeutral/.

Films

'Green' Film

The film *Green* is a 48 min long documentary on the Indonesian rainforest, deforestation and orangutan extinction. This film is now available for free download on the website: <http://greenfilm.free.fr>.

The Story of Stuff

<http://www.storyofstuff.com>.

PHOTO CREDITS

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