A compendium of tips, terms, resources & papers for environmentally friendly magazine publishing

THE MAGAZINE ECO KIT

A project of Magazines Canada, the British Columbia Association of Magazine Publishers (BCAMP), the Alberta Magazine Publishers Association (AMPA), Magazines Ontario, the Manitoba Magazine Publishers Association (MMPA), Magazines du Québec (AQEM), the Atlantic Magazines Association (AMA) and Markets Initiative.
WELCOME TO THE SECOND EDITION OF THE MAGAZINE ECO KIT.

Much has changed since the development of the first Coated Paper Eco Kit in 2004. Awareness of the environmental impacts of the magazine industry has grown, and publishers and printers who want to support environmentally preferred papers now have myriad options where before few existed. Many publishers have developed environmental paper purchasing policies that support protection of intact forest ecosystems; they prefer recycled content and demonstrate this preference to their readers. In general, consumers, government and industry are increasingly determined to protect the global environment. Making environmentally friendly choices now carries the prestige of doing the right thing. The time is right to consider how we can all make the transition to environmentally friendly publishing.

Today, making environmentally friendly choices goes beyond good business practice—we in the magazine industry must do our part to choose the most environmentally friendly papers available to protect and preserve the natural resources upon which we all depend. You are invited to join the growing group of publishers and printers who recognize that the management of paper requires careful stewardship.

In this kit we offer a collection of ideas and best practices that many publishers may adopt as their own. We are confident that this kit will help you ask the right questions, while providing tips and tools that will both inform and educate you about making viable choices for a greener, more sustainable publishing industry.

Our goal is to lead paper manufacturers towards the development and supply of new environmentally friendly papers that meet publishers’ quality, price and supply expectations. But achieving this goal will take the commitment and support of Canadian magazine publishers to generate demand for papers that have high-recycled content, free of ancient-forest fibre and harmful bleaching processes. Forward-thinking printers are already gaining valuable expertise through their use of eco-friendly papers, and can provide publishers with the information they need to make environmentally friendly choices. As a result of this evolution, going green is within the grasp of most publishers.

Going green is achievable, and the decision to go green is easier than ever. The choice is yours. We encourage you to contact your printer to learn more about how you can go green, and hope that you find this Magazine Eco Kit a practical guide that clarifies the sometimes confusing information available on eco-friendly publishing solutions.

SUPPORTED BY:
Magazines Canada
Magazines Ontario
Magazines du Québec
Markets Initiative
British Columbia Association of Magazine Publishers
Manitoba Magazine Publishers Association
Atlantic Magazines Association
Alberta Magazine Publishers Association
ABOUT MARKETS INITIATIVE:

As the leading environmental publishing advocate, Markets Initiative’s role is to shift consumption patterns of industrial paper consumers so that their purchases do not destroy ancient and endangered forests such as Canada’s Boreal, temperate rainforests and the tropical forests. Markets Initiative works with companies to shift the demand for paper products to sustainable options. If eco-options do not exist, Markets Initiative works collaboratively with major paper purchasers and throughout the supply chain to bring alternatives into existence.

Since 1999, Markets Initiative has facilitated shifts within the book, magazine and new paper industries. Markets Initiative is at the forefront of creating change in global paper markets. As a result of Markets Initiative’s work, more than 520 book publishers, magazines, newspapers, 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 to green the Harry Potter series internationally. Markets Initiative is a national non-profit with offices in Montreal, Toronto and Vancouver, and has mentored similar projects in nine other countries, including the US, the UK and China.

SUPPORT THE ECO-VISION AND SEIZE OPPORTUNITY WHILE NAVIGATING THE CURRENT MARKET CONDITIONS:

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ABOUT THE WHEAT SHEET
Print magazine publishers have a vested interest in ensuring that the industry supports environmental best practices. Consumers today are increasingly aware of the environmental impact of their choices and are putting their purchasing power behind positive environmental change. In the case of magazines, environmentally friendly choices include those that can help protect the world’s forests.

THE WORLD’S FORESTS
The world’s ancient forests are massive storehouses of carbon, which help stabilize the earth’s climate and act as a protective shield against global warming. These forests also protect watersheds and, through the natural cycle of death, decay and regeneration, maintain soil productivity while contributing significantly to the biodiversity and resilience of the planet.

Of North America’s original forest ecosystems, only two areas remain in large tracts of relatively undisturbed ancient forests: the Boreal forest, which spans northern Canada, and the Western Temperate Rainforest, stretching from Southern Alaska down through British Columbia to Northern California.

THE BOREAL FOREST
Canada’s Boreal forests are some of the largest tracts of natural intact forest left in the world, covering an area 21 times the size of the United Kingdom. They compose 25% of the world’s remaining intact ancient forests. Given the rarity of intact forests, Canada’s Boreal forests are an international treasure and one of the world’s foremost conservation opportunities.

Maintaining the integrity of the Canadian Boreal forest through large-scale area conservation and shifts to sustainable forest management systems is critical to maintaining the stability of the global climate.

BRITISH COLUMBIA’S TEMPERATE RAINFORESTS
Temperate rainforests, having originally covered a mere 0.2 % of the world’s land surface, are far more rare than tropical forests. The diversity and complexity of these forests is a result of over 10,000 years of post-glacial activity. In British Columbia’s ancient temperate rainforest, cedars live to be over one thousand years old, and Sitka spruce trees grow over 90 meters tall. Rich, fertile and majestic, these rainforests are populated with thousands of species of birds, plants and animals. The World Resources Institute classifies temperate rainforests as the most endangered forest type on the planet. Over half of British Columbia’s ancient forests have already been logged. Of the province’s original large rainforest valleys, only 20% remain intact.

DEFORESTATION, PAPER AND CLIMATE CHANGE
“One of the most significant, and perhaps least understood, impacts of the paper industry is climate change. Every phase of paper’s lifecycle contributes to global warming, from harvesting trees to production of pulp and paper to eventual disposal. It is estimated that 42% of the industrial
Wood harvest is used to make paper—a sobering fact given that forests store roughly 50% of all terrestrial carbon, making them one of our most important safeguards against climate change. Old-growth and mature, second-growth natural forests store much larger amounts of climate than newly planted stands and, once logged, require decades to recover the original amount of carbon they contained.6

The combined Boreal forests of Canada and Russia make up the world’s largest terrestrial carbon sink containing approximately 40% of the planet’s terrestrial carbon stocks,7 and play a critical role in the fight against climate change. The Boreal forests are so good at storing carbon that, during their growing season, the level of oxygen goes up around the world!

The forest sector is the largest single industrial user of energy in Canada and has significant greenhouse gas emissions.8 Logging removes 33-36 million tons of above-ground carbon from the eco-system each year — that’s more carbon than that which is emitted from all passenger vehicles in the country.9

If logging in Canada continues for the next 10-12 years as it has for the past 10-12 years, it is estimated another 1 million square kilometers10 of the Boreal will be destroyed.

*The Stern Review on the Economics of Climate Change* identified conservation of intact forests as a primary defense against climate change.11 Consequently, low-carbon technologies, along with the conservation and protection of intact forests, have become increasingly important.

Over the coming years, climate change will become a major factor in shaping investment in paper manufacturing.

**GOING GREEN AND SAVING OUR FORESTS**

*Many solutions exist.*

Central to the opportunity of protecting intact forests and reducing greenhouse gases is producing papers with fibre from low-carbon and low-biodiversity areas. These papers contain high post-consumer recycled content, agricultural residues and fibre from forest management areas certified to systems like the Forest Stewardship Council.13

There is also significant potential for using agricultural residue fibre alternatives. Currently more than 10% of paper made in China and India contains agricultural fibres like wheat straw. In South Africa, award-winning magazines print on paper made with sugar cane bagasse. Kenaf, hemp, bamboo and cotton can be used as paper fibre, but require land allocated for their growth. An environmentally preferable option is the use of agricultural residues such as wheat straw and flax straw, which are waste products of our agricultural harvest. These fibres are harvested in vast quantities in the Canadian Prairies and the American Midwest, but currently no wheat pulping infrastructure exists in North America. Markets Initiative is spearheading the development of a North American agricultural paper market, though it will be a few years before these fibres can be produced economically and be a truly viable solution for large-scale paper production in North America. The “wheat sheet” paper you are holding in your hands right now is one of the steps in building this market. (See the story of this paper on page 34.)

1 World Resources Institute, September 2006
2 Country Canada’s Natural Capital. Canadian Boreal Initiative and Pembina Institute, 2003
3 Ecotrust and Conservation International, 1992
4 World Resources Institute, 1997
5 Toward a Sustainable Paper Cycle: An Independent Study on the Sustainability of the Pulp and Paper Industry. 1996
8 Canadian Council of Forest Ministers, 2005, Criteria and Indicators of Sustainable Forest Management in Canada, National Status 2005, Indicator 4.1.4 – Forest sector carbon emissions
10 Global Forest Watch Canada, 2007
11 Stern Review on the Economics of Climate Change, 2006
12 Stern Review on the Economics of Climate Change, 2006, pg. 537
13 See page 25 for more details on the Forest Stewardship Council (FSC)
Industry, consumers and environmental groups increasingly agree that sourcing paper fibre from intact forests is not an ecologically sustainable approach to paper production. We must curtail deforestation by reducing worldwide paper consumption, while putting legal protection in place for remaining ancient and endangered forests, and by turning to other sources of fibre for papermaking.

RECOVERED FIBRE AND MAGAZINES
Papers made with high post-consumer recycled content are the most affordable ecological alternatives currently available for large consumers of paper and paper products. In addition to alleviating the pressure to log ancient forests, recycled papers also divert waste from landfill sites and incinerators, effectively addressing issues of both deforestation and pollution.

Thanks to innovations in de-inking and pulping technologies, the quality of recycled papers has improved dramatically. In addition, chlorine-free bleaching technology promises to reduce the harmful chemicals released into the environment from the papermaking and de-inking processes. Many of today’s recycled papers meet the same quality standards as their virgin counterparts in almost all grade categories.

Recycled fibres CAN be used in coated magazine paper.

Higher quality recovered fibre can be recycled into lower quality paper, though recovered fibre can’t be recycled indefinitely because the fibre degrades. Depending on the paper type, some virgin fibre may always be required for strength and quality—therefore virgin fibres from agricultural residue or sustainably managed forests are an important ingredient in many coated papers.

Paper producers will state the fact that almost every grade of commercial printing and office paper is made with a mix of long and short fibres. Recycled paper is a great source of short fibre for papermaking.

In 2006, the recovered fibre rate for all paper generated was 49% in Canada and just over 51.9% in the US. Leadership in global recovered fibre has been set by nations such as Germany with 74.7% and South Korea with 96.8%.

In North America, printing and writing grade paper mills’ use of recycled fibre is approximately 6% of its total fibre use. Other sectors range from 32% (newsprint) to 45% (tissue) in recovered fibre use.

The recovery of printing and writing paper is lower than other types of paper recovery, leaving an estimated 18 million tons of printing and writing paper in the United States not currently being collected. Therefore, there is great potential for increasing recovery in the production of printing and writing paper. In fact, the paper from more than half of all offices in the United States is not being recovered, and it could be.

The industry and Environmental Paper Network are forecasting that the North American supply for recycled paper will be short by 2 to 2.5 million tons between 2007 and 2012. North American de-inking capacity currently provides about 1.6 million tons of de-inked pulp with 900,000 to 1.2 million short tons going to printing and writing grade papers. Therefore, an additional capacity of 1.2 to 1.7 million short tons is needed.

Growing concern for forest conservation has resulted in increased demand for recovered fibre in North America. Demands for using recycled paper are coming from many large corporate purchasers such as Transcontinental Inc., St. Joseph Communications, Rogers Publishing, Staples, Dell, Random House of Canada, Simon & Schuster, Limited Brands (Victoria’s Secret), Bank of America, Citigroup, Office Depot, Scholastic, Nickelodeon, Shape, Reader’s Digest US, Fast Company, Inc. and others.
To bring increased capacity for high-grade recycled fibres in North America, several circumstances need to be simultaneously addressed. These include:

- Increased consumer awareness of the importance of recycling paper (for example, attaching a value to it as has been done with cans and bottles)
- Increased municipal recycling infrastructures and addressing quality challenges associated with single-stream recycling
- Government incentives that support recycling
- Industry investment in new de-inking capacity
- Industry investments in the research and development of high quality recycled-content papers
- Market support from major paper consumers

**SOLUTIONS A-PLENTY**

Looking to recovered fibre leaders reveals North American wide solutions. Just one example is the Abitibi Paper Retriever program that is also a fundraiser for schools and churches. It is a free, community-based program, with approximately 25,000 collection points in North America and the UK which actually pays schools, churches, non-profits and the like for their paper recycling efforts.

(Though newsprint can’t be recycled into magazine paper, this example speaks to the ways industry can work with consumers to increase recovered fibre supply and create a value for that supply in consumers’ minds.) More: www.paperretriever.com

Thanks to growing consumer demand from environment-minded leaders in the magazine industry, there are now more than 50 eco-papers produced with recycled and/or FSC-certified fibre available for magazine publishers.
Consumers’ opinions of high priority activities for publishers who are trying to lessen their footprint:

- Using post-consumer recycled paper for publications: 81%
- Using alternatives to toxic bleach and dyes in the printing process: 80%
- Using paper that comes from sustainably managed forests: 73%
- Reducing trim size and number of pages to use less paper: 51%
CHOOSING FOREST-FRIENDLY PAPERS—WHAT YOU NEED TO KNOW
Are you thinking about choosing environmentally friendly paper but don’t know where to start? Publishers and printers need to consider a lot of information when exploring the adoption of eco-practices.

FACTORS AFFECTING COST
Consumers are concerned that recycled and eco-papers are more expensive than conventional papers, but in fact they are growing more affordable as demand rises. In today’s market, these high-quality papers range in price and can be more affordable than the paper you are using right now—some Ancient Forest Friendly™, 100% recycled papers are available at a price parity to virgin papers, or less. It pays to get a solid quote from your preferred printer that’s relevant to your needs before making a final decision.

Many factors affect the price of virgin and recycled papers:
▶ Volume purchasing agreements between printers and paper mills
▶ Decreased capacity due to paper mill closures and consolidation
▶ Fluctuating currency exchange rates
▶ Infrastructure and technology investments or lack thereof
▶ Scheduled mill downtimes
▶ Rising energy, production, shipping and pulp costs
▶ Paper grade
▶ Specific mill marketing strategies

(These market dynamics can fluctuate rapidly, even weekly.)

In addition, the region in which a magazine is printed can affect pricing. Depending upon their origin, papers that are affordable in Ontario, Quebec and Manitoba may not be as economical by the time they are shipped to the east or west coast. Market conditions, shipping costs, seasonality and quantity will affect the final price, underscoring the importance of talking with your printer before making your paper selection.
In early 2007, both Transcontinental and Quebecor World book printing divisions announced stocking commitments to provide 100% recycled Ancient Forest Friendly™ uncoated book paper at price parity to virgin papers. Select magazine printers are now looking at doing the same, and even offering clients the ability to purchase Ancient Forest Friendly™ lightweight coated #5 papers that may be more competitively priced than the virgin paper they had used previously.

As more magazine publishers demand more high quality eco-papers and printers agree to purchase them in volume, mills will have greater incentive to produce eco-papers and prices may come down.

AVAILABILITY AND SUPPLY FACTORS
The single biggest issue facing printers has to do with the availability of eco-papers. Industry demand for eco-papers may require most paper mills to retool while keeping prices competitive. The magazine industry plays a very large role in this conversion process, as it provides a steady and predictable demand for these products. At the time this document went to press, the demand for eco-papers exceeded the supply.

With more publishers and printers developing Ancient Forest Friendly™ purchasing policies, eco-papers will increase in number and volume over the coming years. One major magazine printer in Canada saw demand for post-consumer recycled paper jump from 250,000 lbs. in 2005 to well over 7 million lbs. in 2007. More publishers are ready to make the switch to eco-friendly papers but supply agreements, order and delivery times, cost and mill closures sometimes limit the availability of these papers.

When you are interested in printing on eco-papers, you may need to be patient and persistent. Your demand will add to the support that encourages mills to produce a broader range of eco-papers. Add your voice to the market shift!

The availability of particular stocks can also be a factor in publishing with eco-friendly papers. Talk with your printer to ensure that supply timelines match your print and distribution schedules. Always direct the following questions through your printer to supplier mills:
1. What is the lead-time for paper? Customers must respect LDO and LDC dates (i.e. the dates by which orders can be placed and changed).
2. Is there a minimum tonnage required? Many of the roll stocks will require a minimum order of 40,000 lbs. or a tractor-trailer load.

THE RISING ECO-TREND AMONG MAGAZINES
- In 2005, 3.8 million copies of Canadian magazines were printed on Ancient Forest Friendly™ and eco-papers, diverting pressure from 8,200 trees.
- In 2006, 53.3 million magazine copies saved 40,000+ trees.
- In 2007, magazine publishers and printers used enough recycled paper to save more than the equivalent of 55,000+ trees.
- If all Canadian consumer magazines printed on eco-paper with 30% post-consumer content, the equivalent of approximately 400,000 trees would be saved annually.
INCREASING EFFICIENCY CAN HELP THE ENVIRONMENT

Seemingly small changes to stock basis weight and trim size can positively reduce paper usage and costs while helping the environment. There are two ways to achieve basis weight reductions:

1. Reduce the basis weight of the text stock, the cover stock, or both.
2. Change to a self-cover using a lower basis weight cover or text grade.

As for trim size, the ability to reduce size depends on many factors including the type of press used and the press cut-off, trim and binding allowances.

The following chart shows examples of the impact of reductions in basis weight and trim size.

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REDACTING MAGAZINE PAPER USAGE

**Reducing Basis Weight:** Reduction of stock usage is possible in these ways:

1. For a magazine printing on different cover and text stocks, reduce the basis weight of either the cover or text or both.

   **Example A:**
   - Trim size 8 1/4" x 10 7/8", cover stock 80lb, text 60lb, press run 25,000, 68 ROP pages, annual frequency 12
   - Small run, small page count, heavy stock
   - Change to cover stock 60lb, text 44lb
   - Estimated annual stock savings = 19.23 tons
   - Environmental impact:
     - Save 417 trees
     - Save enough energy to heat 8 homes/year
     - Save greenhouse gases equivalent to 11 cars/year
     - Save enough wastewater to fill almost 1 swimming pool
     - Save enough solid waste to fill 2 garbage trucks

2. For a magazine printing on different cover and text stocks, change to self-cover at the lower text basis weight.

   **Example B:**
   - Trim size 8 1/4" x 10 7/8", cover stock 80lb, text 38lb, press run 500,000, 164 ROP pages, annual frequency 12
   - Large run, large page count, light stock
   - Change to text 36lb
   - Estimated annual stock savings = 43.18 tons
   - Environmental impact:
     - Save 703 trees
     - Save enough energy to heat 17 homes/year
     - Save greenhouse gases equivalent to 27 cars/year
     - Save enough wastewater to fill 1 swimming pool
     - Save enough solid waste to fill 4 garbage trucks

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19 Markets Initiative based on Statistics Canada Periodical Publishing Survey and The Paper Calculator from Environmental Defense

20 With the exception of the self-cover scenario, examples explore a small run, small page count, heavy stock scenario and a large press run, large page count, light stock scenario. The estimated annual stock savings are in metric tons and environmental impact estimates use www.papercalculator.org
### Example A:
Trim size 8 1/4” x 10 7/8”, cover stock 80lb, text 60lb, press run 25,000, 68 ROP pages, annual frequency 12.

| small run, small page count, heavy stock | 0% recycled stock, 10% makeready waste |
| Change to cover stock 60lb |
| Estimated annual stock savings = 1.13 tons |

Environmental impact:
- Save 25 trees
- Save enough energy to heat <1 home/year
- Save greenhouse gases equivalent to <1 car/year
- Save enough wastewater to fill <1 swimming pool
- Save enough solid waste to fill <1 garbage truck

### Reducing Trim Size:
Trim size reduction depends on many factors including the type of press, press cut-off, trim and binding allowance, etc.

### Height:
Generally, the maximum height of a trade-sized magazine (or width of a tabloid-sized magazine) is limited by the cut-off of a press. Reductions here do not create stock savings as the extra trim (for shorter size) just goes to waste. The exception is, for certain presses with a shorter than normal cut-off, that may allow a trade-sized height of 10 1/2”. Check with printer to see if height reduction (or width for tabloid-sized) is possible.

### Width:
Reducing the width of a trade-sized magazine (height of tabloid-sized) results in the use of narrower webs and real reduction in stock use.

#### Example A:
Trim size 8 1/4” x 10 7/8”, cover stock 80lb, text 60lb, press run 25,000, 68 ROP pages, annual frequency 12.

| small run, small page count, heavy stock | 0% recycled stock, 10% makeready waste |
| Change to 7 7/8” x 10 7/8” |
| Estimated annual stock savings = 2.64 tons |

Environmental impact:
- Save 52 trees
- Save enough energy to heat 1 home/year
- Save greenhouse gases equivalent to 1 car/year
- Save enough wastewater to fill <1 swimming pool
- Save enough solid waste to fill <1 garbage truck

#### Example B:
Trim size 8 1/4” x 10 7/8”, cover stock 80lb, text 38lb, press run 250,000, 164 ROP pages, annual frequency 12.

| large run, large page count, light stock | 0% recycled stock, 5% makeready waste |
| Change to 7 7/8” x 10 7/8” |
| Estimated annual stock savings = 38.86 tons |

Environmental impact:
- Save 587 trees
- Save enough energy to heat 13 homes/year
- Save greenhouse gases equivalent to 22 cars/year
- Save enough wastewater to fill 1 swimming pool
- Save enough solid waste to fill 3 garbage trucks
QUALITY MATTERS: ASK QUESTIONS

Magazine publishers do not want changes in levels of paper quality, surface treatments or brightness from one issue to the next. Here is a list of questions to ask when considering different eco-papers:

▶ What are the environmental characteristics of the paper? Is it totally or process chlorine-free (TCF or PCF)? What percentage is post-consumer recycled (PCR/PCW) or FSC-certified?
▶ Is the paper chain of custody certified (COC) through FSC?
▶ Is the paper Ancient Forest Friendly™?
▶ Are there specific chemistry and/or absorption issues with the brand of paper being used? Some recycled paper can absorb more ink and water than virgin papers. Consult with your print sales representative for feedback on the paper grade that you are considering. Ask to see printed samples.
▶ Most paper grades are available in different surface finishes. There are four primary finishes for coated paper grades: gloss, dull, silk or matte/satin. Each surface or finish offers different paper gloss and sheet smoothness characteristics.
▶ Are there cracking issues with the paper? Will the paper split when being saddle-stitched due to the thinness or brittleness of the brand? Some higher-content post-consumer recycled papers may not have the strength of virgin papers.
▶ Is the printer FSC-certified? The printer is part of the chain of custody requiring certification.
▶ Has your paper grade selection been test-run to see if it performs to your expectations? Some testing may be required before you can go “live” with your project.

SOLVING THE MYSTERY OF THE CHAIN OF CUSTODY

What is chain of custody? Why is it important?

Most chain of custody (CoC) is designed to track wood fibres from the forest floor to the pulp and paper mill, the paper distributor, the printer and ultimately to the end product.

As the demand for fibre from sustainably certified forests and CoC certified papers grows, more mills are obtaining CoC certificates that demonstrate the origins of paper products.

However, CoC certificates in and of themselves do not guarantee whether fibres originated from areas affected by land claim disputes, endangered species habitat or endangered forest areas with high ecosystem and biodiversity values.

CREATING DEMAND: PRINTERS AND PUBLISHERS CAN MAKE A DIFFERENCE

Leading Canadian magazine publishers, printers and media conglomerates have spearheaded the global industry-wide eco-paper movement through the following initiatives:

▶ Developing and supporting an eco-paper policy (page 20)
▶ Using papers at the top of the Environmental Paper Hierarchy (page 21)
▶ Working with suppliers to develop papers with high post-consumer fibre content and Ancient Forest Friendly™ attributes, including FSC-certified virgin fibre and agricultural residue
▶ Supporting proactive suppliers that develop and stock Ancient Forest Friendly™ eco-papers
▶ Promoting the use of eco-paper on the masthead
▶ Printing marketing materials, media kits, and business reply cards on 100% post-consumer recycled papers
▶ Realizing paper efficiencies like reducing basis weight and trim size, where appropriate
▶ Promoting critical mass by encouraging colleagues to use eco-papers
▶ Sending the message to provincial and federal governments to financially support magazines using eco-paper, while also asking government to invest in infrastructure development such as agricultural pulping technologies in Alberta
WAYS TO MAKE USING ANCIENT FOREST FRIENDLY™ AND ECO-PAPERS MORE AFFORDABLE:

1. Buy paper cooperatively. Several publishers using the same printer may significantly reduce paper costs by asking the printer to buy eco-paper in large volumes. (Discuss the warehousing logistics of this strategy with your printer.) If the paper you order is popular with several clients, the printer may begin to stock it as a house sheet. Note that the grade and basis weight of the collective buy must be identical to realize potential savings.

2. Encourage production managers and designers to be aware of eco-papers. A helpful Eco-Paper Database is available at www.marketsinitiative.org/resources/paper-database.

3. Consult with your printer about new and upcoming paper stocks, and cost-saving approaches to eco-friendly printing.

4. Reduce the basis weight of your stock if it doesn’t compromise the overall quality of your magazine. Check which lighter-weight papers compare in opacity and caliper to other heavier stocks. As basis weights are lowered, paper quality becomes increasingly important, so be sure to work with your printer to understand which trade-offs you are prepared to make.

To promote the use of Forest Stewardship Council certified paper, one of the FSC labels may be obtained from an FSC-certified company. (In most cases a printer—and not a publisher—is the company certified.) Submit files that show where the label will appear to your printer, and your printer will obtain final approval from the certifying body. Allow a minimum of one week for approval, and be sure to work with your printer to understand this process.
ECO-TIPS FOR ADVERTISERS

ADVERTISERS’ ROLE IN FOREST CONSERVATION

The transition to Ancient Forest Friendly™ and eco-papers is a team effort, with group benefits. Advertisers play a key role in the support of magazines using environmentally friendly papers. When a magazine reduces its ecological footprint, so does its advertisers. As consumers become more environmentally savvy and concerned about climate change, they are taking note of the companies spending advertising dollars on environmentally progressive magazines.

For an increasing number of advertisers, the “editorial environment” encompasses eco-papers and environmentally friendly practices. A publisher’s environmental practices can now make or break an advertising deal with advertisers such as Aveda and Mountain Equipment Co-op, who are at the forefront of supporting environmental magazine publishing practices.

The reality today is that all manufacturers and advertisers are under pressure to adopt more eco-friendly practices, which means becoming substantially more understanding of and receptive to environmental issue-driven change. Besides, today’s coated eco-papers ensure excellent advertising reproduction and quality.

North American magazines (including, but not limited to) Canadian Geographic, Cottage Life, explore, Canadian Home Workshop, Outdoor Canada, Inc., Fast Company, alive, Unlimited, Natural Home, Shape and Natural Health are all using paper with 30 to 100% post-consumer recycled fibre and have won accolades and support for making the transition. Rogers Publishing has been using 10% post-consumer recycled fibre for all its subscriber-based consumer publications since late 2005.

When asked about the main responsibility of large companies, slightly more than one third (35%) of Americans responded that businesses should be competitive, but not at the cost of reducing their green efforts. Another 42% agreed that companies should be equally responsible for competitiveness and environmental protection. However, should a conflict arise between the two, a majority of Americans (52%) believe that protecting the environment is more important than economic growth.22


Less than one third of Americans believe that corporate America has fulfilled its environmental protection responsibilities. In fact, consumers are looking for more transparency.” (See chart on page 20.)
ADVERTISERS SUPPORTING CHANGE: THE AVEDA ENVIRONMENTAL AWARDS

Acting on its overarching environmental stewardship commitments, Aveda sent a letter in 2003 to the magazines in which they advertise, asking about the magazines’ environmental commitments and use of eco-paper.

Aveda’s support of magazines using recycled paper inspired *Shape* and *Natural Health* to switch to paper with 30-40% post consumer content.

In 2005, Aveda developed The Aveda Environmental Award, the first North American environmental award for magazines, in collaboration with Co-op America’s Magazine PAPER Project: *explore* magazine was one of the 2006 winners for their use of Ancient Forest Friendly™ glossy paper. *Cottage Life* was one of the winners in 2007.

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HOB0: GOING GREEN AND ADVERTISERS LOVE IT

*Hobo* magazine has been committed to environmental protection since its inception, and was one of the first magazines in Canada to develop an Ancient Forest Friendly™ stewardship policy. Their story of becoming Ancient Forest Friendly™ and using 100% recycled paper is a story full of creative ingenuity.

In 2006, wanting to walk the talk, especially as major fashion/lifestyle magazines like *Vanity Fair* and *Elle* came out with green issues using little if any recycled content, *HoBO* stepped out on a limb. They became the first fashion-oriented magazine in the world that we know of to switch to an UNCOATED stock in order to use affordably priced Ancient Forest Friendly™, 100% recycled, high quality paper.

*HoBO* knew it was risk, so they promoted their actions to all their stakeholders — advertisers and readers alike. It paid off. At launch parties in New York, fans loved the recycled paper.

For their first Ancient Forest Friendly™ issue they used an uncoated stock for the text and cover, which produced an elegant but nonetheless matte feel. As successful as they were, the reality is they are still a fashion and pop-culture magazine, without PMB numbers. So, in 2007, *HoBO* found a new and whiter uncoated 100% recycled stock for the text pages that makes the ads look even better. For the cover stock they chose 100% recycled paper with 40% post-consumer content that could be UV coated to give it a gloss. They also embossed the title.

The result:

*HoBO* found a creative compromise in order to walk their environmental talk. They shine, advertisers and readers still love them and they also managed to save 121 trees!

Granted, *HoBO* is small and nimble, but they have the same bottom-line pressures all magazine publishers do. They also decided to find a solution.

We are not advocating every fashion magazine switch to uncoated stock, but we hope *HoBO*’s actions will inspire innovation among large magazines and their advertisers.

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22 *Elle* used paper with 10% post consumer content while *Vanity Fair* used 100% virgin paper.
DEVELOPING AN ECO-PAPER POLICY

More than 520 Canadian book publishers, magazines and newspapers including Transcontinental Inc., Rogers Publishing, St. Joseph Communications, Canadian Geographic, Cottage Life, explore, Canadian Art, The Walrus, Random House of Canada, McClelland & Stewart and NOW Magazine have developed policies that give preference to recycled and FSC fibre. A growing number of cataloguers including Limited Brands (Victoria’s Secret), Mountain Equipment Co-op and Williams Sonoma have eco-paper policies as well.

You too can develop an eco-paper policy or vision statement; add momentum to the shift already taking place throughout the entire supply chain. Markets Initiative has more than 5 years of experience working with the Canadian magazine publishing industry in the development of Ancient Forest Friendly™ policies and is here to help you with your eco-policies. Email marketsinitiative@marketsinitiative.org to receive an electronic template and to discuss your policy.

“We fully support the initiative to protect the world’s ancient and endangered forests. All our magazines are printed on 100% post-consumer recycled, FSC certified, Ancient Forest Friendly™ paper. All other printing is done on FSC certified paper with a minimum 30% post-consumer recycled content. It’s nice to see the magazine industry, not only here in Canada, but around the world, is starting to implement environmentally sound paper and wood alternative practices in their business. Working together, we can make a difference.” ~ Al Zikovitz, Publisher, Cottage Life and explore

“We take our environmental responsibilities seriously so it seems only prudent that we, along with all of our colleagues in the magazine industry, take an active interest in knowing the sources of the fibre in the paper we are using and in pressing our suppliers to adopt best forestry practices in order to protect Canada’s ancient and endangered forests.”

~ Rick Boychuk, Editor, Canadian Geographic

“Environmental indicators will become a part of Canada’s economy and filter into the business world. Ignoring this fundamental development would be tantamount to ignoring the switch from analogue to digital processes. Markets Initiative is having so much success because their environmental approach is based on sound business progress.” ~ Jon Robinson, PrintAction
HOW TO DESIGN AN ANCIENT FOREST FRIENDLY* PAPER POLICY

An Ancient Forest Friendly paper procurement policy should include the following key elements and targets:

**Protect ancient and endangered forests**
- Work with suppliers to ensure that forest management practices conserve ancient and endangered forests
- Conduct due diligence with paper suppliers regarding their forest management practices via a chain of custody document
- Provide for a preference for Forest Stewardship Council (FSC) certified fibre when virgin wood fibre is required
- Include the following definition of ancient and endangered forests (refer to definitions)

**Maximize recycled content**
- Set targets to maximize the recycled and specifically post-consumer recycled content—ideally to 50-100%.

**Support alternative fibre sources**
- Source papers made from agricultural residue fibres such as flax or wheat straw, and/or support research and development of commercial scale production of pulp and paper from agricultural residue fibre sources.

**Decrease carbon footprint**
- Give preference to papers, which have qualities that reduce their carbon footprint
- Give preference for paper manufactured by suppliers that actively use effective measures to reduce their carbon footprint (including using less energy and using non-fossil fuel energy sources)
- Engage suppliers on curbing operations in intact and old growth forests
- Explore other business areas where carbon reduction strategies can be implemented

**Prevent pollution**
- Give preference for paper manufactured by suppliers that use effective pollution prevention measures
- Source papers that are produced with responsible bleaching technologies (i.e. processed and totally chlorine free processing)

**Increase paper efficiencies and reduce consumption**

**Set timelines, benchmarks, and accountability**
- Set timelines, benchmarks and mechanisms for accountability so that progress can be celebrated

**Involve all stakeholders in process and implementation**
- Involve key employees
- Encourage supplier compliance
- Create marketing plan to promote new policy

**Promote industry leadership**
- Promote Ancient Forest Friendly purchasing policy to employees, customers and business community

* Ancient Forest Friendly paper must be manufactured with a high percentage of recycled fibre or agricultural residue. Any virgin fibre used must be FSC certified and not originate from an endangered forest. Bleaching must be chlorine free. Ancient Forest Friendly papers have low carbon footprints and conserve intact forest ecosystems and their functions, such as climate stabilization, water regulation and species habitat.
ECO-PAPERS AND THE HIERARCHY OF ENVIRONMENTAL PAPERS

The following Hierarchy of Environmental Papers provides a more detailed description of the qualities of various eco-papers.

**ANCIENT FOREST FRIENDLY PAPER**
- All fibre (100%) has ecological attributes
- 100% post-consumer recycled paper emits 25-50% less greenhouse gases, and consumes no trees
- Any virgin fibre is FSC certified (no controlled wood content)
- Any remaining fibre is recycled or agricultural residue
- Process or totally chlorine free
e.g. FSC Recycled label or FSC Mixed Sources label (with no controlled wood)

**ENVIRONMENTALLY IMPROVED PAPER**
- At least 50% of fibre has ecological attributes
- 50% post-consumer recycled paper emits approx. 19-21% less greenhouse gases, and saves the equivalent of 7 to 12 trees per metric tonne.
- Process or totally chlorine free
- Includes post-consumer recycled content (50%+)
- May contain recycled fibre and/or agricultural residue
- Much of the virgin fibre is not FSC certified
e.g. FSC Mixed Sources label (with controlled wood)

**TRANSITIONAL PAPER**
- At least 30% of fibre has ecological attributes
- 30% post-consumer recycled paper emits approx. 10-15% less greenhouse gases, and saves the equivalent of 4 to 7 trees per metric tonne.
- Includes post-consumer recycled content (30%+)
- May contain recycled and/or agricultural residue
- Enhanced elemental chlorine free
- Much of the virgin fibre is not FSC certified
e.g. FSC Mixed Sources label (with controlled wood)

**ENVIRONMENTALLY DAMAGING PAPER**
- No ecological attributes
- Does not reduce greenhouse gas emissions, and consumes the equivalent of 14 to 24 trees per metric tonne.
- Not minimal post-consumer recycled content
- Virgin tree fibre is not FSC certified
- Elemental chlorine free

A few Ancient Forest Friendly™ #4 and #5 stocks are now available at competitive prices. While a full range of these magazine papers is not currently available for every paper grade, there is a range of high quality environmentally improved eco-papers that are both FSC certified and contain 30%+ recycled content. If your publication is unable to use one of the Ancient Forest Friendly™ stocks, a great way to start implementing your policy is to use FSC certified paper with high post-consumer recycled fibre.

Paper manufacturers frequently change the specifications, fibre content and availability of their papers. To keep publishers updated, Markets Initiative features an online Eco-Paper Database at www.marketsinitiative.org/resources/paper-database. This site is regularly updated to reflect both the changes in existing papers and the introduction of new papers to the market. Also, if you would like to receive a listing of the papers included in the top two categories of the paper hierarchy please contact marketsinitiative@marketsinitiative.org.

The Canadian Paper Finder, at www.paperrfinder.ca, also catalogues and cross-references the extensive variety of commercial printing papers available from paper mills and merchants across Canada. It includes gives specific information on different paper grades, their characteristics and uses.

Contact your printer, paper merchant or one of the paper manufacturers listed on these sites for more information.
Welcome to the Paper Calculator
This tool will help you quantify the benefits of better paper choices. The Paper Calculator shows the environmental impacts of different papers across their full lifecycle.

Why do paper choices matter?
By using less paper, increasing recycled content, and making other improvements, you can save wood, water and energy, and cut pollution and solid waste.

See the environmental benefits
Create an easy-to-read report, to help your company, community, non-profit or other organization make better paper choices and measure the environmental results.

The Paper Calculator is based on research done by the Paper Task Force, a peer-reviewed study of the lifecycle environmental impacts of paper production and disposal. The underlying data are updated regularly.

Questions? Comments?
Contact Environmental Defense Fund.

I agree to cite Environmental Defense Fund (sample citation) when using information provided by the Paper Calculator, and accept the Terms & Conditions associated with the use of this site.

Compare individual papers
For example, compare the impacts of a specific paper to alternatives with higher recycled content.

Compare paper groups
For example, compare the combined impacts of several different papers you use today to one or more sets of recycled alternatives.

Lifecycle Environmental Impact
The following is a breakdown of the environmental impact of your choices for different grades of paper.

<table>
<thead>
<tr>
<th>Paper</th>
<th>Baseline Paper</th>
<th>Target Paper I</th>
<th>Target Paper II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity</td>
<td>100 Tons</td>
<td>90 Tons</td>
<td>90 Tons</td>
</tr>
<tr>
<td>% Postconsumer</td>
<td>0</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Wood Use</td>
<td>347 tons</td>
<td>281 tons</td>
<td>312 tons</td>
</tr>
<tr>
<td>Total Energy</td>
<td>3,836 million BTU's</td>
<td>3,302 million BTU's</td>
<td>3,453 million BTU's</td>
</tr>
<tr>
<td>Wastewater</td>
<td>1,907,520 gallons</td>
<td>1,638,016 gallons</td>
<td>1,716,768 gallons</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>227,838 pounds</td>
<td>194,939 pounds</td>
<td>205,051 pounds</td>
</tr>
</tbody>
</table>

Explanation of Data Values
The Paper Calculator is based on research done by the Paper Task Force, a peer-reviewed study of the lifecycle environmental impacts of paper production and disposal.
### Lifecycle Environmental Impact

The following is a breakdown of the environmental impact of your choices for different grades of paper.

<table>
<thead>
<tr>
<th>Paper Choices</th>
<th>Baseline Paper</th>
<th>Target Paper I</th>
<th>Target Paper II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncased Freesheet (e.g. copy paper)</td>
<td>100 tons 0% recycled.</td>
<td>90 tons 10% recycled.</td>
<td>90 tons 10% recycled.</td>
</tr>
</tbody>
</table>

#### Save the results in Excel or PDF

### ABOUT CERTIFICATION LABELS

As more eco-papers have become available, certification labels have flourished. How do publishers make sense of the labels on the market? The Forest Stewardship Council is generally acknowledged as maintaining the gold standard in forest certification, but to understand certification you also need to understand the differences in "on the ground" forest certification and "eco-paper" labels.

**"On the Ground" Forest Certification Labels:**

The four certification systems operating in Canada are:

- Forest Stewardship Council (FSC)
- Sustainable Forestry Initiative (SFI)
- Canadian Standards Association (CSA)
- Programme for the Endorsement of Forest Certification (PEFC)

In 2007 EEM Inc., a private consulting firm, was independently commissioned to compare the four forest certification systems used in Canada and produce a comparison of the standards. The following is a top-line summary of EEM's findings. A summary of the comparison and the complete 40-page document are available for download at www.marketsinitiative.org/resources and www.eem.ca.
A Paper Buyer’s Guide to Forest Certification Schemes

The following quick reference guide represents the highlights from a 2007 comparison by ÉEM inc. of forest management certification schemes in North America. This study is designed to help paper purchasers determine which certification system best suits their environmental paper procurement criteria and is based on an analysis of the written standards.

The schemes compared are Forest Stewardship Council (FSC), Canadian Standards Association (CSA), Sustainable Forestry Initiative (SFI) and Programme for the Endorsement of Forest Certifications (PEFC).

Highlights of Conclusions & Findings from ÉEM inc.

A sustainable forest is most likely to exist under an FSC certification. FSC strengths include the protection of ecologically important forests and the banning of the conversion of natural forests into plantations. A CSA certification can be acceptable but further knowledge of the forest and management practices is required. The CSA standard does not address forest conversion into plantations, or protection of high conservation value areas and wildlife habitat, other than those protected by government. The SFI program is weaker with respect to forest management practices and the lack of independence in the certification process in the past means that it is still struggling with credibility issues.

Using fibre from certified forests is but one environmental aspect of paper procurement. The use of recycled fibre is paramount.

Comparison at-a-glance

<table>
<thead>
<tr>
<th></th>
<th>FSC</th>
<th>CSA</th>
<th>SFI</th>
<th>PEFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Allowable Cut (AAC) per hectare (best available approximation of volume using 2004 data)</td>
<td>0.43 m³/hectare</td>
<td>0.75 m³/hectare</td>
<td>1.27 m³/hectare</td>
<td>N/A</td>
</tr>
<tr>
<td>Prohibits the use of genetically modified trees</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Prevents the conversion of natural forest to plantation</td>
<td>Yes (with a few exceptions)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Requires precautionary approach to the management of High Conservation Value areas</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Prohibits Fibre from illegally harvested or high conservation value forests</td>
<td>Fibre from illegally harvested and controversial sources</td>
<td>Fibre from sources that are illegally harvested and some specified non-acceptable sources</td>
<td>Raw material from controversial sources</td>
<td></td>
</tr>
</tbody>
</table>

ECO-PAPER LABELS
The following eco-paper labels are the marks of leadership:

Ancient Forest Friendly™ Paper
The Ancient Forest Friendly™ logo is a designation that 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 post-consumer recycled fibre or agricultural residue. Any virgin fibre used in the paper must be both FSC certified and assessed as not originating from endangered forests. 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.23
**Forest Stewardship Council**
FSC has a number of paper labels for use on papers with FSC Pure, FSC Recycled, and mixed fibre contents. www.fsc.org/en/getting_involved/use_trademark/new_labels

**Processed Chlorine Free** is reserved for recycled content paper. This includes all recycled fibres used as a feedstock that meet EPA guidelines for recycled or post-consumer content. PCF papers have not been rebleached with chlorine containing compounds. A minimum of 30% post-consumer content is required. www.chlorinefreeproducts.org

**Totally Chlorine Free** is reserved for virgin fibre papers. TCF papers do not use pulp produced with chlorine or chlorine containing compounds as bleaching agents. www.chlorinefreeproducts.org

**Environmental Choice EcoLogo**  
EcoLogo was started by the Government of Canada in 1998 and certifies environmental leaders in over 300 categories of products. For close to a decade the EcoLogo program has certified paper meeting leadership requirements for fibre use, energy use, COD emissions, sub-lethal toxicity, acidification potential and global warming impacts. EcoLogo certification requirements are regularly updated and products are re-audited regularly to ensure certified products are leaders in their categories.

**Biogas Energy**
Biogas refers to the use, in the paper manufacturing process, of the gas generated from decomposition of landfill. This process helps to reduce greenhouse gas emissions.

**Green-E**  
Green-e is the leading US independent certification and verification program for renewable energy and greenhouse gas emission reductions in the retail market. You may see this logo used on some papers produced in the US.

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**A Note about Recycled labels**
Many papers carry the mobius loop which features three arrows in a triangle formation. Unless you use a recycled paper certified by a credible third party with a chain of custody, the recycled content contained in the paper is not guaranteed. The FSC 100% recycled paper label ensures that the paper does in fact contain recycled content per the FSC criteria. SFI and PEFC also have labels or claims that guarantee recycled paper content.

Post Consumer Recycled (PCR) and Post Consumer Waste (PCW) both refer to paper collected from recycling bins; this paper has already been through its full life cycle.

**Recyclable**
This mobius loop simply means the paper can be recycled. Don’t be fooled into thinking that this paper grade has been produced using post-consumer recycled fibre.

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23 For information on the science behind the Ancient Forest Friendly™ brand, see the document Your Guide to the Ancient Forest Friendly™ Brand, page 6-7, available for download at www.marketsinitiative.org.
HOW YOU CAN MAKE A DIFFERENCE

Now is the time to consider how we can all make the transition to environmentally friendly publishing. What can we all contribute that will move industry to a higher level of ecological accountability?

**Publishers**
- Adopt an eco-paper purchasing policy for your organization (page 20)
- Choose eco-papers that meet the highest environmental standards, like Ancient Forest Friendly™ whenever possible (and remember, using recycled paper is one of the best ways to reduce your carbon footprint before doing any offsetting)
- Work with your printer to examine how your magazine can reduce its paper consumption through adjusting basis weight and trim size
- Communicate and promote your use of eco-papers far and wide

**Printers**
- Adopt and promote Ancient Forest Friendly™ and eco-paper as house stocks
- Train sales staff to recognize and promote the many advantages of eco-papers
- Work with paper mills and communicate your need for more eco-paper choices, more predictable quality, assured delivery and competitive pricing

**Advertisers**
- Increase your awareness of your ecological footprint, and the footprints of your suppliers
- Show your support for magazines that make the switch to eco-papers and environmental best practices

**Everyone**
- Become a champion of the environment for your company and help your company achieve its eco-friendly goals
THINKING OF CARBON REDUCTION?
This is a process that involves measuring, with a credible organization, the entire footprint of your operations from your paper use: loss of biomass due to deforestation, pulp transportation, paper production, office energy use for lights and equipment, staff commutes, printing and distribution to subscribers and the newsstand and the end result of unsold copies.

Leaders in this area are spending the time to do this comprehensive benchmarking. Larger publishers will discover a significant portion of their footprint is linked to the entire lifecycle of their paper choice (various reports suggest anywhere from 61-88%, depending on the paper type and measurement variables).

Therefore, one of the best solutions is to shift as much paper as possible to recycled contents. This alone will reduce emissions associated with paper production by 38-48%24, as well as alleviating the pressure to log or add to landfill. Some mills now make paper with biogas, wind and other renewable energies, so purchasing papers from these mills also helps realize another level of carbon reduction.

Once you have measured your footprint and reduced it as much as possible, then offset the rest by investing in “gold standard” renewable energy offsets.

Resources:
Following the Paper Trail, The Impact of Magazine and Dimensional Lumber Production on Greenhouse Gas Emissions, A Case Study on Time and InStyle Magazines, The Heinz Center, 2006. (Please note, the calculations in this paper are based on an assumption that harvesting does not change soil carbon content, page 32.)

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24 Using 100% recycled paper over virgin paper saves 38% in GHG emissions for uncoated paper and 48% with coated groundwood. Available: www.papercalculator.org
25 The Gold Standard is widely considered to be the highest standard in the world for carbon offsets. Available: www.davidsuzuki.org/Climate_Change/What_You_Can_Do/carbon_offsets.asp
FORESTS AND FIBRE

*Ancient Forests* are forest areas relatively undisturbed by human activity. Ancient forests vary significantly in age and structure from one forest type and biogeoclimatic zone to another. Boreal forests, temperate or tropical rainforests may all be classified as ancient or old growth forests. The following features characterize ancient forests:

- Have not undergone any significant industrial activity
- Are naturally regenerated and dominated by a range of indigenous tree species
- Tree size, age and spacing vary widely
- Accumulations of dead standing trees (snags) and fallen trees are much more frequent than in younger forests
- Trees are large for the species and site combination
- The canopy has many openings and the forest floor is lush with ferns, berry bushes, mosses, etc.
- Multiple canopy layers
- Support old growth-dependent species like the endangered Spotted Owl

*Endangered Forests* are defined in the Wye River document (*www.forestethics.org/pdf/EF.pdf*) according to biological, ecological, social and legal categories. In summary they include:

- Rare Forests
- Anthropogenically Rare Forests (i.e. Western Temperate Rainforests)
- Intact (Frontier or Near-Frontier) Forests
- Other Ecologically Important Forests (i.e. roadless areas and old growth patches)
- Forests with ongoing Human and Indigenous Rights violations
- Illegally Harvested Forest Products

*Ancient/Endangered Forest Fibre Free* means that the product contains no material from trees of ancient and other endangered forests.

*Alternative/Agricultural fibres* refer to non-wood plants that are grown intentionally for paper and other products (e.g. hemp, kenaf).

*Agricultural Waste/Residue* refers to usable materials recovered primarily from annual crops as byproducts of food and fibre production (e.g. flax/wheat/rice straw).

*Recovered Fibre* refers to the universe of materials that count as both pre- and post-consumer recycled.
Virgin Fibre has not been previously used in a product. It can refer to fibre that originates from forests or agricultural sources. The vast majority of virgin forest fibre in Canada originates from endangered/ancient forests. Unless a product stipulates its recycled and post-consumer recycled content, it is generally comprised of virgin fibre.

Tree-Free Paper is made from agricultural waste/residue fibre or agricultural fibres.

RECYCLED PAPER
In North America the term "recycled paper" refers to paper made with pre-consumer fibre that has not been "used by consumers," including unsold newsstand magazine issues as well as mill-generated waste.

Eco-paper is a term used through this ecokit to refer to paper that has ecological attributes like recycled and post-consumer recycled fibre, FSC certified virgin fibre and/or agricultural waste fibres.

De-inking is the process by which ink is lifted off used paper that is then broken back down into fibres to be recycled into new paper.

BLEACHING
The bleaching process used to whiten products, particularly paper products and tissue products, is another critical environmental factor to consider when measuring the environmental credibility of a given product. The use of chlorine creates dioxins—organic pollutants that are carcinogenic and have been linked to endocrine disruptions in human and animal health.

Both standard and elemental chlorine-free bleaching technologies produce organochlorines as a by-product. These substances include dioxin, a proven human carcinogen and an endocrine disrupter. An average mill using standard chlorine bleaching technology will release around 35 tons of organochlorines a day. An ECF mill will release 7 to 10 tons, while a totally chlorine-free mill will release none.
**Processed Chlorine Free (PCF)** is the most environmentally friendly type of chlorine processing for post-consumer fibre and, along with Totally Chlorine Free (TCF) is the safest bleaching process. PCF uses oxygen-based compounds instead of chlorine-based compounds in the bleaching process. PCF products contain post-consumer, recycled-fibre content that has been re-bleached using this process. Since it is impossible to tell whether the recycled content has been bleached with chlorine in the past, recycled pulp cannot be labeled totally chlorine free.

**Totally Chlorine Free (TCF)** is a virgin pulp bleaching process and is as safe as PCF processing. TCF uses oxygen-based compounds instead of chlorine-based compounds and chlorine derivatives in the virgin pulp bleaching process.

**Elemental Chlorine (EC)** is the traditional method for paper bleaching using chlorine gas (elemental chlorine) to whiten paper. This process produces large amounts of dioxins. Paper with EC bleaching can contain either virgin or recycled fibres.

**Elemental Chlorine Free (ECF)** is a bleaching process that substitutes chlorine dioxide for elemental chlorine in the bleaching process. Compared to elemental chlorine bleaching processes, ECF bleaching reduces the formation of many chlorinated organic compounds. However the quantity of effluent from the mill is not reduced and additional unnecessary human health and environmental hazards remain.

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Environmental Paper Network
www.environmentalpaper.org (Canada/US)
The Environmental Paper Network is a diverse group of environmental organizations that have joined together to support socially and environmentally sustainable transformations within the pulp and paper industry.

Forest Stewardship Council (FSC)
www.fsccanada.org (Canada/International)
The Forest Stewardship Council is an international, membership-based, non-profit organization that supports environmentally appropriate, socially beneficial, and economically viable management of the world's forests. The FSC was the first forest certification program to emerge and it provides standard setting, trademark assurance and accreditation services for companies, organizations and individuals.

Magazine PAPER Project
www.ecopaperaction.org (US)
The Magazine Paper Project exists to preserve the health of forests and communities by encouraging US magazine publishers to make environmental commitments and improve their environmental records. The Paper Project is dedicated to providing magazine publishers with the tools and resources they need to adopt environmentally preferable alternatives.

Markets Initiative
www.marketsinitiative.org (Canada)
Markets Initiative is a Canadian environmental advocacy organization whose work is to protect the world’s forests, biodiversity and climate by shifting the consumption patterns of industrial paper consumers to eco-friendly options. The organization works collaboratively throughout the entire supply chain.

Paper Calculator
www.papercalculator.org (US)
The online Environmental Paper Calculator developed by Environmental Defense, a leading American non-profit organization that works to link science, economics and law to create innovative, equitable and cost-effective solutions to society's most urgent environmental problems.
ECO-LINKS

CREDITS
Markets Initiative offers a special thank you to the Magazines Canada Manufacturing and Technical Standards Committee for developing a workgroup to spearhead this initiative. Special thanks go to:
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Mark Patenaude, St. Joseph Print
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Thomas Fortington, Markets Initiative

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iStockphoto, Tomas Bercic (page 35)
“If you can tear your eyes from these words for a moment, have a look at the paper they are printed on.”
~ Rick Boychuk, the Editor of Canadian Geographic in their June 2008 environment issue

The Wheat Sheet is a landmark in North American paper production: it is the first glossy light-weight coated magazine paper made with wheat straw in North America. The Wheat Sheet is comprised of 20% wheat straw, 40% post-consumer recycled fibre, and 40% totally chlorine-free virgin wood fibre.

The Wheat Sheet is the result of a partnership between Canadian Geographic, Markets Initiative, Alberta Research Council, Dollco Printing and a major North American paper mill. It has taken over three years to bring this paper trial to reality, revealing the opportunities and challenges of using agricultural residue fibres in North American paper production.

Canada’s agricultural heartland is a bountiful source of paper fibre. Each year, large quantities of the byproducts of grain harvests go unused while our intact forests continue to be logged for paper production. Using fibres such as wheat straw for paper will significantly reduce pressure upon ancient and endangered forests. Although papers made with wheat are not yet commercially available in North America, market support is strong for this initiative. The Wheat Sheet is a tangible example of the potential revitalization of Canada’s paper industry and spearheads the development of an agricultural residue paper industry in North America.

SO GOOD, YOU COULD ALMOST EAT IT
Agricultural pulps take less time to cook than wood pulps, and so require less energy, less water and fewer chemicals. Agricultural fibres also have a significantly lower land-use footprint, and pulps made from wheat and flax straw waste residues have an overall lower ecological footprint than pulp derived from wood.

HOW THE WHEAT SHEET CAME TO BE
After searching for 18 months — first within Canada, and then the US — the project partners turned off-shore to secure wheat straw pulp in volume. Canada produces wheat straw fibre, but has no domestic facilities to pulp the fibre. The wheat straw pulp was purchased from China, where more than 20% of paper fibre used comes from agricultural residues.

The people Markets Initiative spoke with about this trial often asked, “Why start with a glossy paper? It’s impossible.” Proving it was possible was exactly the point. Proving that agricultural wastes can be used successfully in high quality glossy papers that are technically difficult to produce demonstrates a whole new realm of possibility for manufacturing printing and writing grade papers.

The goal in the next 5-10 years is to ensure that Canadian-produced agricultural waste pulps
become an integral part of the North American paper industry fibre basket.

The next step is to support the development of pulping infrastructure in Canada. This requires leadership, innovation and investment. It will require all of us — publishers, printers, government decision makers and environmental groups — to work together to make the most of these fields of opportunity.

For more information on the Wheat Sheet visit www.marketsinitiative.org.
The entire ecokit committee, Magazines Canada and Markets Initiative extend a heartfelt thanks to Dollco Printing for the print donation of this ecokit.

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