Book Business
Magazine

The Facts and Myths of Recycling

By Steven W. Frye Jan/Feb 2005

Because I'm involved in the publishing industry, and more specifically as a buyer and user of paper, I find myself regularly being accused of deforesting the world. I try defending our industry by educating the general public that our industry grows and harvests trees as farmers do corn. I proudly state that there are, in fact, more trees in the U.S. today than there were 200 years ago.

While discussing this subject with a friend, she was astonished with some of my remarks and exclaimed, "Have you ever flown over Oregon?" referring to the widespread deforestation evident there. Yes, I answered and explained the majority of that damage was done before good forestry practices, and anyways most of that wood is used in the lumber industry and not the paper industry.

But, was I right? (I admit I was beginning to wonder.) I based my statements on information I gleamed over a 26-year career.

Then the subject of recycled paper came up. Again, over my career, the "greening" of the publishing industry seemed to be more of politically-correct hype than good business sense. Recycled paper was of poorer quality, there were few choices, they were more expensive and there was only 10% post consumer content…90% of the fiber content was still from virgin fibers. But the real zinger that was being downplayed was that during the de-inking process a toxic chemical sludge was created and buried in drums in the ground. Was recycling paper really good for the environment or were publishers being misled in its real benefit? Or was it in demand just for the marketing image of including the recycle bug?

Now I was wondering if those beliefs were true.

I've been seeing a new resurgence in publishers wanting to use recycled stocks, but this time there's a difference. I've been finding a lot more choices where the quality is excellent and the prices are comparable to virgin fiber stocks. But the biggest difference was in the amount of post-consumer (PC) content. There are stocks with 30%, 50%, 70% and even 100% PC content.

Another belief I held was the main reason people were interested recycling was to put a major dent in the amount of paper filling up the landfills. This image of waste is most damaging to the packaging, catalog, newspaper and magazine industries. But books tend to fill up libraries and not landfills. So why should book publishers be interested in using recycled stocks or other environmentally-friendly practices?

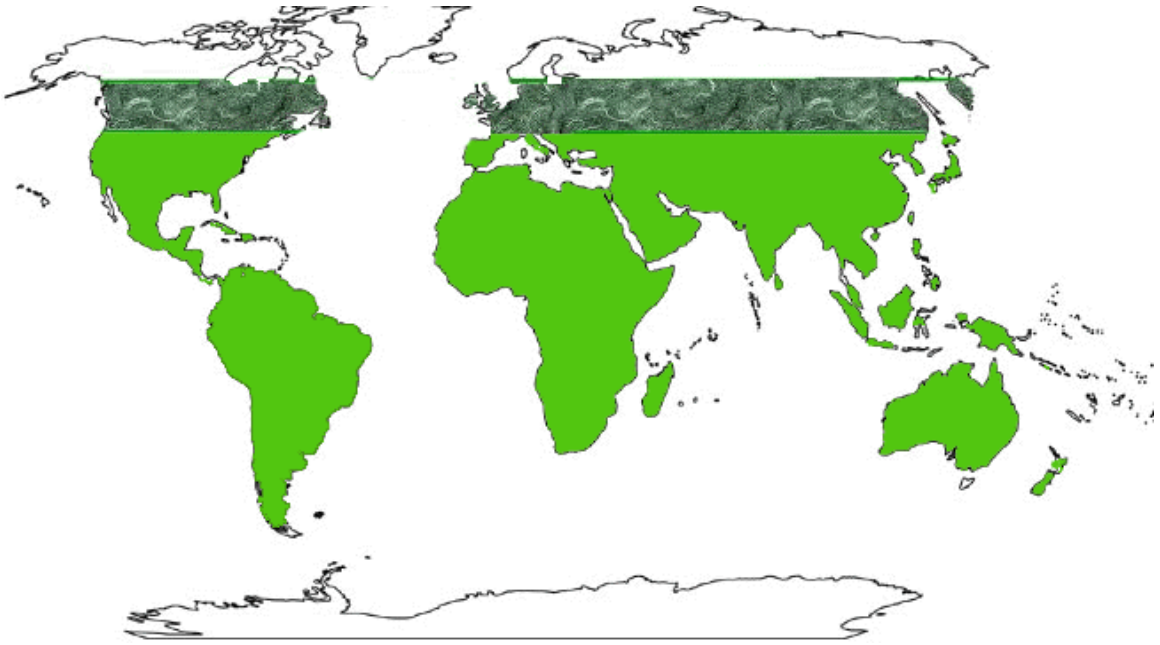
"Well, first and foremost the environment should be the first concern." says Deborah Bruner, Production and Design manager at Cornell University Press. "However, we recently tested *Primivera*, an Italian sheet imported by New Leaf, for one of our book jackets. When we compared it to the same grade of virgin paper we had been using, we found it to be brighter and whiter, in which the halftones were more defined and crisp and the color was ultimately brighter."

Besides having higher PC content, today's stocks have different finishes and color characteristics. They are available for POD, sheetfed, web offset and gravure printing processes and all stocks meet the ANSI/NISO Standard Z39.48. "Some of the recycled papers look a hell'va lot better than some virgin stocks." continues Bruner.

Some recycled stocks have a unique feel that designers find attractive. As Bruner also pointed out, "There are some papers that offer an 'eco-look' for publishers who want that look and feel."

Book publishers may not have an impact on filling up landfills, but they can on cleaning them up. Reclaimed fibers from recycling have two main effects on the environment. First, paper waste is being reused, and secondly, less virgin fibers need to be harvested.

Which brings me back to my opening statements…wood pulp is harvested from farmed trees and not natural or ancient forests. But Jeffery Hill, President of Horizon West Paper, educated me that, indeed, old-growth forests are being harvested to produce papers. He said that there are two types of fiber: short-grain and long-grain. The short-grain fibers come from trees in the northern tree belt (see graphic) and are used for high-quality paper. These trees take up 80 years to grow and die when harvested. The long-grain fibers come from trees below that belt ranging down to, basically, Antarctica. These trees mature between ten and twenty years and re-grow after being harvested. These trees are highly renewable whereas the northern trees are not.



So I was wrong. We, the publishing industry, are indeed cutting down old-growth northern trees. And according to a report published by The Environmental Paper Summit held in November 2002, entitled *Guidance to Best Practices for Advancing Environmentally and Socially Sustainable Papers*, natural forest ecosystems are also being cleared for their conversion into plantations for paper fiber. What? My tree-corn argument withers when it comes at the expense of natural forests.

So what other misconceptions do I have about recycling paper?

Does it take more energy to produce recycled paper rather than virgin paper? According to the *Environmental Defense* and the *Alliance for Environmental Innovation*, producing recycled paper uses

much less total energy than producing virgin paper. Depending on the grade, producing recycled paper may use more or less purchased energy (a subset of total energy), in the form of fossil fuels and purchased electricity. Virgin freesheet grades require slightly less purchased energy to produce than recycled ones, because some of their energy needs are met by burning wood-derived process waste. Virgin groundwood papers, by contrast, require more purchased energy to produce than do recycled groundwood papers.

Making paper from used paper is generally a cleaner and more efficient process than making paper from virgin materials. Extracting and bleaching the fibers has already been done and that means less total energy, water, and chemical use, and lower releases of air and water pollutants.

So what about that ink, clay and bleaching sludge from recycled paper mills? Recycled mills do generate more solid waste, mostly in the form of sludge, than virgin paper mills. However, that increase reportedly is more than offset by the reduction in solid waste that comes from diverting paper from the waste stream. The mills point out that the same inks, coatings, and fillers present in recycling mill sludge would have gone into the ground anyway. (A claim I'm still having difficulty with because printed paper does not contain chlorine-like chemicals found in the sludge.) However, at least it's contained after the de-inking process. Recyclers are also increasingly finding ways to reclaim and reutilize some components of recycled paper sludge, which can't happen if that paper goes to a landfill or incinerator.

Some believe it makes more sense to recycle all paper into the lower grades of paper instead of the higher quality printing and writing papers. From an environmental standpoint the benefits of substituting recycled for virgin fiber are generally larger in higher grades (especially those made from chemical pulp) than lower grades such as newsprint, corrugated boxes, and tissue. And from a supply perspective, there is more than enough recovered paper to supply recycled pulp for both printing and writing papers and lower grades.

Another environmental concern from landfills is methane gas, which has 21 times the heat-trapping power of carbon dioxide. Methane is a potent greenhouse gas and contributor to global climate change. The U.S. EPA cites municipal landfills as the single largest source of methane emissions to the atmosphere, and has identified the decomposition of *paper* as among the most significant source.

The science of recycling paper is maturing at a fast rate and it is proven to be worth the effort. Even though book publishers do not contribute directly to the landfill problem, everybody is part of the problem in one way or another. By using recycled paper book publishers become part of the solution to a huge global problem.

If you haven't already done so, I plead with you to check out the recycled paper choices. They are of high quality and are more affordable. Many books, due to their market, would benefit greatly by supporting conservation and environmental concerns.

And if you do decide to use recycled paper, purchase wisely. Be an educated buyer and help drive the industry. Being "green" is good…even if you don't have to.

How to be Part of the Solution

There are well over 100 publication papers available with recycled content. Some of these are also chlorine free and some include tree free fibers or FSC-certified content. Almost all paper mills make some environmental papers. Some feature them and others provide them upon request.

How do you identify environmental papers? Look for these features:

- Post-consumer (PC) recycled content - Post-consumer content refers to fibers from papers that were collected from end-users such as offices and homes, in contrast with pre-consumer scraps created in the industrial chain such as sheeting, cutting and printing. There is 5 times as much post-consumer as pre-consumer fiber and it is more challenging to collect and process. Focusing on post-consumer supports the infrastructure needed to ensure a healthy recycling system.

- Chlorine Free - Most papers are bleached with chlorine derivatives, but the least toxic bleaching technologies are 'processed chlorine free " (PCF). These include ozone and oxygen bleaching.

- Tree Free Fibers - Some plants such as agricultural residues left over after harvests and 'on-purpose crops' planted specifically for paper fiber such as hemp or kenaf can be pulped and used in place of tree fibers.

- FSC-Certified - Some papers include forest fibers certified by the Forest Stewardship Council to come from sustainable harvested forests.

Besides buying recycled paper, your company can do more. Develop an organizational policy commitment to purchase paper with increasingly enhanced environmental characteristics as specified in these guidelines, and set a timetable for the transition. Communicate the commitment to managers and staff, suppliers, customers, partners, and the public.

Minimize paper consumption. Eliminate excessive and unnecessary paper consumption. Visit wwwforestethics.org/reduction for paper reduction strategies.

Examples of minimizing paper usage include:

- Purchasing copiers, printers, and fax machines that can be set to default to double-sided printing.
- Maximizing paper use efficiency in business and other settings.
- Rethinking design processes to minimize printing and copying waste.
- Minimizing unsolicited mail, both sent and received.
- Minimizing overruns and maximizing sell-through for published materials.

Maximize the recycled content of the paper you do buy. Eliminate the use of paper and paper products (including newsprint, packaging, tissue products, office papers, and publications) made from 100 percent virgin fiber content. Switch to paper that contains the highest post-consumer recycled content feasible for each specific need, but no less than the U.S. Environmental Protection Agency (EPA) minimums for federal agencies. Currently the EPA minimums for printing and writing papers, for example, are 30 percent for uncoated papers and 10 percent for coated papers.

After switching to recycled paper, set a timeline for increasing the PC content as quickly as possible to higher percentages. For printing and writing papers, this should be no less than 50% for uncoated papers and 30% for coated papers. After maximizing PC recycled content, give preference to paper products that also contain other recovered materials (e.g., agricultural residues, pre-consumer fiber).

Be Selective about Virgin Fiber Content. Verify with suppliers and manufacturers the source of any virgin fiber content in paper and give preference to suppliers and manufacturers that establish a credible "Chain of Custody" tracking system to reliably identify the origin of fiber sources. Also give preference to papers guaranteed to be free of fiber that threatens endangered forests.

Source any remaining virgin wood fibers for paper from independent, third-party certified forest managers that employ the most environmentally and socially responsible forest management and restoration practices. The Forest Stewardship Council (FSC) is the only acceptable international certification program that comes close to meeting this goal.

There are several ways to find environmental papers:

1) Check for papers on Conservatree's environmental paper listings, www.conservatree.org. These are continually updated and presented by grade, with environmental and specification characteristics, as well as sources, for each.

2) Work with a paper merchant that specializes in getting environmental papers made, such as New Leaf Paper, which collaborates with manufacturers to produce new papers to high environmental specifications.

Resources for further information:
forestethics.org/reduction (paper reduction strategies)
fscus.org and fscoax.org (FSC US and international web sites)
certifiedwood.org (certified wood supply databases and tracking services)
forestworld.com (certified wood supply databases and tracking services)

Current Ranges of Environmental Attributes in Coated Publication Papers

Paper Grade	Typical Environmental Contents	Specification Ranges	Manufacturers	
Coated # 1	**Postconsumer Recycled Fiber:** 10 - 30% **Bleaching:** Some PCF **Tree Free Fiber:** kenaf	**Brightness:** 91 - 100 **Basis Weights:** 65 – 100# text, 65 – 130# cover **Available:** web and sheet **Finishes:** gloss, dull, velvet, silk, matte **Colors:** white, blue white, cream	Appleton Coated Meadwestvaco Mohawk Papers M-Real SAPPI	Scheufelen Smart Papers Stora Enso UPM Kymmene Vision Paper
Coated #2	**Postconsumer Recycled Fiber:** Most are 10%, with some higher, up to 100% **Bleaching:** Some PCF **Tree Free Fiber:** hemp/flax	**Brightness:** 87 - 90 **Basis Weights:** 60 – 100# text, 65 – 120# cover **Available:** web and sheet **Finishes:** gloss, dull, velvet, matte **Colors:** white, blue white, ivory	Appleton Coated Cascades Fine Paper Domtar International Paper Living Tree Paper Meadwestvaco New Leaf Paper	Pasadena Papers SAPPI Spicers Paper Stora Enso Unisource Canada West Linn Paper
Coated #3	**Postconsumer Recycled Fiber:** 10 - 40+% **Bleaching:** Some PCF **Certified Forest Fibers:** Some FSC-certified	**Brightness:** 81 - 87 **Basis Weights:** 30 – 115# text, 70 - 100# cover **Available:** web (offset and rotogravure) and sheet **Finishes:** gloss, dull, silk, velvet, matte **Colors:** white, blue white	Appleton Coated Cascades Fine Paper Dalum Papir Domtar International Paper Madison Paper Int'l Meadwestvaco	New Leaf Paper Pasadena Papers SAPPI Stora Enso UPM Kymmene West Linn Paper
Coated #4	**Postconsumer Recycled Fiber:** 10 - 50+% **Bleaching:** Some PCF	**Brightness:** 76 - 84 **Basis Weights:** 36 – 70# text **Available:** web only (offset and rotogravure) **Finishes:** gloss, dull, silk, matte **Colors:** white, blue white	Bowater Dalum Papir International Paper Leipa Madison Paper Int'l Meadwestvaco	New Leaf Paper SAPPI Stora Enso Tembec UPM Kymmene
Coated #5	**Postconsumer Recycled Fiber:** Many 10%, several 20- 50+% **Bleaching:** Some PCF	**Brightness:** 69 – 74 **Basis Weights:** 26 – 70# text **Available:** web only (offset and rotogravure) **Finishes:** gloss, dull, matte **Colors:** white, blue white	Bowater Domtar International Paper Kruger Leipa Madison Paper Int'l	New Leaf Paper Norske Skog Stora Enso Tembec UPM Kymmene Weyerhaeuser
Supercalendered (SCA/ SCA+)	**Postconsumer Recycled Fiber:** Most 10 - 25%, some higher **Bleaching:** Some PCF	**Brightness:** 69 – 71 **Basis Weights:** 26 - 70# text **Available:** web only (offset and rotogravure) **Finishes:** gloss **Colors:** white	Bowater International Paper Stora Enso	Tembec UPM Kymmene

Current Ranges of Environmental Attributes in Uncoated Publication Papers				
Uncoated Publication Offset	**Postconsumer Recycled Fiber:** 30 - 100% **Bleaching:** Some PCF	**Brightness:** 75 –85 **Basis Weights:** 40 – 80# text, 65 – 80# cover **Available:** web and sheet **Finishes:** smooth, vellum **Colors:** white, offwhite, colors	Badger Paper Boise Paper Dalum Papir Georgia Pacific	Grays Harbor Paper International Paper New Leaf Paper Weyerhaeuser
Uncoated Publication Opaque Offset	**Postconsumer Recycled Fiber:** Most 30%, some 10 - 100% **Bleaching:** Some PCF **Certified Forest Fibers:** Some FSC-certified	**Brightness:** 94 – 80 **Basis Weights:** 40 –80# text, 65 – 80# cover **Available:** web and sheet **Finishes:** smooth, vellum **Colors:** white, blue white, offwhite, colors	Badger Paper Cascades Fine Paper Domtar Finch Pruyn Fraser Papers Georgia Pacific	Glatfelter Grays Harbor Paper International Paper New Leaf Paper Unisource Canada Weyerhaeuser
Uncoated Publication Improved Newsprint	**Recycled Fiber:** 20 - 50% (pre- and postconsumer)	**Brightness:** 60 – 72 **Basis Weights:** 28 - 55# **Available:** web only **Colors:** white	Blue Heron Bowater Inland Empire Paper	

Many options exist for blow-in cards and direct mail, as well.

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